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**Department of Defense
Fiscal Year (FY) 2012 Budget Estimates**

February 2011



Navy

Justification Book Volume 5

Research, Development, Test & Evaluation, Navy

Budget Activity 7

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Table of Volumes

Budget Activities 1, 2, and 3.....	Volume 1
Budget Activity 4.....	Volume 2
Budget Activity 5.....	Volume 3
Budget Activity 6.....	Volume 4
Budget Activity 7.....	Volume 5

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Navy • President's Budget FY 2012 • RDT&E Program

Volume 5 Table of Contents

Exhibit R-1..... Volume 5 - v
Program Element Table of Contents (by Budget Activity then Line Item Number).....Volume 5 - xv
Program Element Table of Contents (Alphabetically by Program Element Title).....Volume 5 - xix
Exhibit R-2's..... Volume 5 - 1

UNCLASSIFIED

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Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Jan 2011

Summary Recap of Budget Activities	FY 2010 (Base & OCO)	FY 2011 Base Request with CR Adj	FY 2011 OCO Request with CR Adj	FY 2011 Total Request with CR Adj	FY 2011 Annual CR Base	FY 2011 Annual CR OCO	FY 2011 Annual CR Total
Operational Systems Development	4,316,194	4,116,711	39,801	4,156,512	4,632,069	65,655	4,697,724
Total Research, Development, Test & Eval, Navy	4,316,194	4,116,711	39,801	4,156,512	4,632,069	65,655	4,697,724
Summary Recap of FYDP Programs							
Strategic Forces	152,643	133,327		133,327	150,017		150,017
General Purpose Forces	1,168,841	1,065,720		1,065,720	1,199,133		1,199,133
Intelligence and Communications	1,307,266	1,298,323	6,900	1,305,223	1,460,855	11,382	1,472,237
Research and Development	295,738	266,368		266,368	299,714		299,714
Central Supply and Maintenance	92,984	68,072		68,072	76,597		76,597
Classified Programs	1,298,722	1,284,901	32,901	1,317,802	1,445,753	54,273	1,500,026
Total Research, Development, Test & Eval, Navy	4,316,194	4,116,711	39,801	4,156,512	4,632,069	65,655	4,697,724

UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Jan 2011

Summary Recap of Budget Activities -----	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Operational Systems Development	4,131,044	41,334	4,172,378
Total Research, Development, Test & Eval, Navy	4,131,044	41,334	4,172,378
 Summary Recap of FYDP Programs -----			
Strategic Forces	151,994		151,994
General Purpose Forces	1,244,650	7,550	1,252,200
Intelligence and Communications	1,144,804		1,144,804
Research and Development	200,348		200,348
Central Supply and Maintenance	80,640		80,640
Classified Programs	1,308,608	33,784	1,342,392
Total Research, Development, Test & Eval, Navy	4,131,044	41,334	4,172,378

UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2010 (Base & OCO)	FY 2011 Base Request with CR Adj	FY 2011 OCO Request with CR Adj	FY 2011 Total Request with CR Adj	FY 2011 Annual CR Base	FY 2011 Annual CR OCO	FY 2011 Annual CR Total	Sec
164	0604402N	Unmanned Combat Air Vehicle (UCAV) Advanced Component and Prototype Development	07	295,738	266,368		266,368	299,714		299,714	U
165	0604717M	Marine Corps Combat Services Support	07								U
166	0604766M	Marine Corps Data Systems	07								U
167	0101221N	Strategic Sub & Weapons System Support	07	67,980	81,184		81,184	91,347		91,347	U
168	0101224N	SSBN Security Technology Program	07	33,131	34,997		34,997	39,378		39,378	U
169	0101226N	Submarine Acoustic Warfare Development	07	6,704	6,815		6,815	7,668		7,668	U
170	0101402N	Navy Strategic Communications	07	44,828	10,331		10,331	11,624		11,624	U
171	0203761N	Rapid Technology Transition (RTT)	07	55,535	35,120		35,120	39,517		39,517	U
172	0204136N	F/A-18 Squadrons	07	114,132	148,438		148,438	167,020		167,020	U
173	0204152N	E-2 Squadrons	07	59,304	19,011		19,011	21,391		21,391	U
174	0204163N	Fleet Telecommunications (Tactical)	07	33,750	26,894		26,894	30,261		30,261	U
175	0204228N	Surface Support	07								U
176	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	16,705	10,587		10,587	11,912		11,912	U
177	0204311N	Integrated Surveillance System	07	26,123	23,464		23,464	26,401		26,401	U
178	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	1,142	4,357		4,357	4,902		4,902	U
179	0204571N	Consolidated Training Systems Development	07	35,912	50,750		50,750	57,103		57,103	U
180	0204574N	Cryptologic Direct Support	07	1,602	1,519		1,519	1,709		1,709	U

R-1P: FY 2012 President's Budget (With FY 2011 CR Adjustments), as of January 24, 2011 at 11:20:59

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Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Se
164	0604402N	Unmanned Combat Air Vehicle (UCAV) Advanced Component and Prototype Development	07	198,298		198,298	U
165	0604717M	Marine Corps Combat Services Support	07	400		400	U
166	0604766M	Marine Corps Data Systems	07	1,650		1,650	U
167	0101221N	Strategic Sub & Weapons System Support	07	88,873		88,873	U
168	0101224N	SSBN Security Technology Program	07	33,553		33,553	U
169	0101226N	Submarine Acoustic Warfare Development	07	6,360		6,360	U
170	0101402N	Navy Strategic Communications	07	23,208		23,208	U
171	0203761N	Rapid Technology Transition (RTT)	07	30,021		30,021	U
172	0204136N	F/A-18 Squadrons	07	151,030	2,000	153,030	U
173	0204152N	E-2 Squadrons	07	6,696		6,696	U
174	0204163N	Fleet Telecommunications (Tactical)	07	1,739		1,739	U
175	0204228N	Surface Support	07	3,377		3,377	U
176	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	8,819		8,819	U
177	0204311N	Integrated Surveillance System	07	21,259		21,259	U
178	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	5,214		5,214	U
179	0204571N	Consolidated Training Systems Development	07	42,244		42,244	U
180	0204574N	Cryptologic Direct Support	07	1,447		1,447	U

R-1P: FY 2012 President's Budget (With FY 2011 CR Adjustments), as of January 24, 2011 at 11:20:59

UNCLASSIFIED

Volume 5 - viii

UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2010 (Base & OCO)	FY 2011 Base Request with CR Adj	FY 2011 OCO Request with CR Adj	FY 2011 Total Request with CR Adj	FY 2011 Annual CR Base	FY 2011 Annual CR OCO	FY 2011 Annual CR Total	Se c
181	0204575N	Electronic Warfare (EW) Readiness Support	07	34,267	39,398		39,398	44,330		44,330	U
182	0205601N	HARM Improvement	07	35,030	14,207		14,207	15,986		15,986	U
183	0205604N	Tactical Data Links	07	14,525	28,854		28,854	32,466		32,466	U
184	0205620N	Surface ASW Combat System Integration	07	38,175	32,877		32,877	36,993		36,993	U
185	0205632N	MK-48 ADCAP	07	33,621	26,234		26,234	29,518		29,518	U
186	0205633N	Aviation Improvements	07	121,986	133,611		133,611	150,337		150,337	U
187	0205658N	Navy Science Assistance Program	07	3,639	3,535		3,535	3,978		3,978	U
188	0205675N	Operational Nuclear Power Systems	07	71,730	74,229		74,229	83,521		83,521	U
189	0206313M	Marine Corps Communications Systems	07	268,815	245,298		245,298	276,006		276,006	U
190	0206623M	Marine Corps Ground Combat/ Supporting Arms Systems	07	99,157	100,424		100,424	112,996		112,996	U
191	0206624M	Marine Corps Combat Services Support	07	64,856	19,466		19,466	21,903		21,903	U
192	0206625M	USMC Intelligence/Electronic Warfare Systems (MIP)	07	24,775	20,316		20,316	22,859		22,859	U
193	0207161N	Tactical AIM Missiles	07	2,232	912		912	1,026		1,026	U
194	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	3,622	2,633		2,633	2,963		2,963	U
195	0208058N	Joint High Speed Vessel (JHSV)	07	8,206	3,586		3,586	4,035		4,035	U
200	0303109N	Satellite Communications (SPACE)	07	481,831	422,268		422,268	475,130		475,130	U
201	0303138N	Consolidated Afloat Network Enterprise Services (CANES)	07	46,823	63,563		63,563	71,520		71,520	U
202	0303140N	Information Systems Security Program	07	31,422	25,934		25,934	29,181		29,181	U

R-1P: FY 2012 President's Budget (With FY 2011 CR Adjustments), as of January 24, 2011 at 11:20:59

UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
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 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Se c
181	0204575N	Electronic Warfare (EW) Readiness Support	07	18,142		18,142	U
182	0205601N	HARM Improvement	07	11,147		11,147	U
183	0205604N	Tactical Data Links	07	69,224		69,224	U
184	0205620N	Surface ASW Combat System Integration	07	22,010		22,010	U
185	0205632N	MK-48 ADCAP	07	39,288		39,288	U
186	0205633N	Aviation Improvements	07	123,012		123,012	U
187	0205658N	Navy Science Assistance Program	07	1,957		1,957	U
188	0205675N	Operational Nuclear Power Systems	07	82,705		82,705	U
189	0206313M	Marine Corps Communications Systems	07	320,864	1,500	322,364	U
190	0206623M	Marine Corps Ground Combat/ Supporting Arms Systems	07	209,396		209,396	U
191	0206624M	Marine Corps Combat Services Support	07	45,172		45,172	U
192	0206625M	USMC Intelligence/Electronic Warfare Systems (MIP)	07	14,101	4,050	18,151	U
193	0207161N	Tactical AIM Missiles	07	8,765		8,765	U
194	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	2,913		2,913	U
195	0208058N	Joint High Speed Vessel (JHSV)	07	4,108		4,108	U
200	0303109N	Satellite Communications (SPACE)	07	263,712		263,712	U
201	0303138N	Consolidated Afloat Network Enterprise Services (CANES)	07	12,906		12,906	U
202	0303140N	Information Systems Security Program	07	25,229		25,229	U

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UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
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 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2010 (Base & OCO)	FY 2011 Base Request with CR Adj	FY 2011 OCO Request with CR Adj	FY 2011 Total Request with CR Adj	FY 2011 Annual CR Base	FY 2011 Annual CR OCO	FY 2011 Annual CR Total	Sec
203	0303150M	WWMCCS/Global Command and Control System	07								U
204	0303238N	Consolidated Afloat Network Enterprise Services (CANES) - MIP	07		8,375		8,375	9,423		9,423	U
206	0305149N	COBRA JUDY	07	61,802	36,527		36,527	41,100		41,100	U
207	0305160N	Navy Meteorological and Ocean Sensors-Space (METOC)	07	27,687	63,878		63,878	71,875		71,875	U
208	0305192N	Military Intelligence Program (MIP) Activities	07	6,213	4,435		4,435	4,990		4,990	U
209	0305204N	Tactical Unmanned Aerial Vehicles	07	35,295	35,212		35,212	39,620		39,620	U
210	0305206N	Airborne Reconnaissance Systems	07	55,082							U
211	0305207N	Manned Reconnaissance Systems	07	36,716	19,263		19,263	21,674		21,674	U
212	0305208M	Distributed Common Ground/Surface Systems	07		8,377		8,377	9,426		9,426	U
213	0305208N	Distributed Common Ground/Surface Systems	07	11,979	16,665		16,665	18,751		18,751	U
214	0305220N	RQ-4 UAV	07	438,199	529,250		529,250	595,505		595,505	U
215	0305231N	MQ-8 UAV	07	25,497	10,665		10,665	12,000		12,000	U
216	0305232M	RQ-11 UAV	07	551	512		512	576		576	U
217	0305233N	RQ-7 UAV	07	3,132	934	6,900	7,834	1,051	11,382	12,433	U
218	0305234M	Small (Level 0) Tactical UAS (STUASL0)	07	18,685	26,209		26,209	29,490		29,490	U
219	0305234N	Small (Level 0) Tactical UAS (STUASL0)	07	18,445	18,098		18,098	20,364		20,364	U
220	0305237N	Medium Range Maritime UAS	07								U

R-1P: FY 2012 President's Budget (With FY 2011 CR Adjustments), as of January 24, 2011 at 11:20:59

UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Se
203	0303150M	WWMCCS/Global Command and Control System	07	1,250		1,250	U
204	0303238N	Consolidated Afloat Network Enterprise Services (CANES) - MIP	07	6,602		6,602	U
206	0305149N	COBRA JUDY	07	40,605		40,605	U
207	0305160N	Navy Meteorological and Ocean Sensors-Space (METOC)	07	904		904	U
208	0305192N	Military Intelligence Program (MIP) Activities	07	4,099		4,099	U
209	0305204N	Tactical Unmanned Aerial Vehicles	07	9,353		9,353	U
210	0305206N	Airborne Reconnaissance Systems	07				U
211	0305207N	Manned Reconnaissance Systems	07				U
212	0305208M	Distributed Common Ground/Surface Systems	07	23,785		23,785	U
213	0305208N	Distributed Common Ground/Surface Systems	07	25,487		25,487	U
214	0305220N	RQ-4 UAV	07	548,482		548,482	U
215	0305231N	MQ-8 UAV	07	108,248		108,248	U
216	0305232M	RQ-11 UAV	07	979		979	U
217	0305233N	RQ-7 UAV	07	872		872	U
218	0305234M	Small (Level 0) Tactical UAS (STUASL0)	07				U
219	0305234N	Small (Level 0) Tactical UAS (STUASL0)	07	22,698		22,698	U
220	0305237N	Medium Range Maritime UAS	07	15,000		15,000	U

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UNCLASSIFIED

UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
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 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2010 (Base & OCO)	FY 2011 Base Request with CR Adj	FY 2011 OCO Request with CR Adj	FY 2011 Total Request with CR Adj	FY 2011 Annual CR Base	FY 2011 Annual CR OCO	FY 2011 Annual CR Total	S e c
221	0305239M	RQ-21A	07								U
222	0307217N	EP-3E Replacement (EPX)	07	198							U
223	0308601N	Modeling and Simulation Support	07	7,709	8,158		8,158	9,179		9,179	U
224	0702207N	Depot Maintenance (Non-IF)	07	14,186	18,649		18,649	20,984		20,984	U
225	0702239N	Avionics Component Improvement Program	07	3,438	3,250		3,250	3,657		3,657	U
226	0708011N	Industrial Preparedness	07	71,277	46,173		46,173	51,956		51,956	U
227	0708730N	Maritime Technology (MARITECH)	07	4,083							U
9999	9999999999	Classified Programs		1,298,722	1,284,901	32,901	1,317,802	1,445,753	54,273	1,500,026	U
		Operational Systems Development		4,316,194	4,116,711	39,801	4,156,512	4,632,069	65,655	4,697,724	
Total Research, Development, Test & Eval, Navy				4,316,194	4,116,711	39,801	4,156,512	4,632,069	65,655	4,697,724	

UNCLASSIFIED

Department of the Navy
 FY 2012 President's Budget
 Exhibit R-1 FY 2012 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Jan 2011

Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Se
221	0305239M	RQ-21A	07	26,301		26,301	U
222	0307217N	EP-3E Replacement (EPX)	07				U
223	0308601N	Modeling and Simulation Support	07	8,292		8,292	U
224	0702207N	Depot Maintenance (Non-IF)	07	21,609		21,609	U
225	0702239N	Avionics Component Improvement Program	07				U
226	0708011N	Industrial Preparedness	07	54,031		54,031	U
227	0708730N	Maritime Technology (MARITECH)	07	5,000		5,000	U
9999	9999999999	Classified Programs		1,308,608	33,784	1,342,392	U
		Operational Systems Development		4,131,044	41,334	4,172,378	
Total Research, Development, Test & Eval, Navy				4,131,044	41,334	4,172,378	

UNCLASSIFIED

Navy • President's Budget FY 2012 • RDT&E Program

Program Element Table of Contents (by Budget Activity then Line Item Number)

***Budget Activity 07: Operational Systems Development
Appropriation 1319: Research, Development, Test & Evaluation, Navy***

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
164	07	0604402N	Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev.....	
165	07	0604717M	(U)MARINE CORPS COMBAT SERVICES SUPPORT.....	
166	07	0604766M	MARINE COPRS DATA SYSTEMS.....	
167	07	0101221N	Strategic Sub & Wpns Sys Supt.....	
168	07	0101224N	SSBN Security Tech Program.....	
169	07	0101226N	Submarine Acoustic War Dev.....	
170	07	0101402N	Navy Strategic Comms.....	
171	07	0203761N	Rapid Technology Transition (RTT).....	
172	07	0204136N	F/A-18 Squadrons.....	
173	07	0204152N	E-2 Squadrons.....	
174	07	0204163N	Fleet Tactical Development.....	
175	07	0204228N	Surface Support.....	
176	07	0204229N	Tomahawk Mssn Planning Ctr.....	
177	07	0204311N	Integrated Surveillance System.....	
178	07	0204413N	Amphibious Tactical Supt Units.....	

UNCLASSIFIED

UNCLASSIFIED

Navy • President's Budget FY 2012 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 1319: Research, Development, Test & Evaluation, Navy***

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
179	07	0204571N	Consolidated Trng Sys Dev.....	
180	07	0204574N	Cryptologic Direct Support.....	
181	07	0204575N	Elect Warfare Readiness Supt.....	
182	07	0205601N	Harm Improvement.....	
183	07	0205604N	Tactical Data Links.....	
184	07	0205620N	Surface ASW Cmbt Sys Integr.....	
185	07	0205632N	MK-48 ADCAP.....	
186	07	0205633N	Aviation Improvements.....	
187	07	0205658N	Navy Science Assistance Progr.....	
188	07	0205675N	Operational Nuclear Power Sys.....	
189	07	0206313M	Marine Corps Comms Systems.....	
190	07	0206623M	MC Ground Cmbt Spt Arms Sys.....	
191	07	0206624M	Marine Corps Cmbt Services Supt.....	
192	07	0206625M	USMC Intelligence/Electronics Warfare Sys.....	
193	07	0207161N	Tactical Aim Missiles.....	
194	07	0207163N	AMRAAM.....	
195	07	0208058N	Joint High Speed Vessel (JHSV).....	
200	07	0303109N	Satellite Communications (Space).....	

UNCLASSIFIED

UNCLASSIFIED

Navy • President's Budget FY 2012 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 1319: Research, Development, Test & Evaluation, Navy***

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
201	07	0303138N	Consolidated Afloat Network Ent Services(CANES).....	
202	07	0303140N	Information Sys Security Program.....	
203	07	0303150M	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM.....	
204	07	0303238N	Consolidated Afloat Network Ent SVCS(CANES)-MIP.....	
206	07	0305149N	Cobra Judy.....	
207	07	0305160N	Navy Meteorological and Ocean Sensors-Space(METOC).....	
209	07	0305204N	Tactical Unmanned Aer Vehicles.....	
210	07	0305206N	Airborne Reconnaissance Sys.....	
212	07	0305208M	(U)Distributed Common Ground/Surface Systems.....	
213	07	0305208N	Distributed Common Ground Sys.....	
214	07	0305220N	RQ-4 UAV.....	
215	07	0305231N	MQ-8 UAV.....	
216	07	0305232M	RQ-11 UAV.....	
217	07	0305233N	RQ-7 UAV.....	
218	07	0305234M	Small (LEVEL 0) Tactical UAS (STUASL0).....	
219	07	0305234N	Small (LEVEL 0) Tactical UAS (STUASL0).....	
220	07	0305237N	Medium Range Maritime UAS.....	
221	07	0305239M	(U)RQ-21A.....	

UNCLASSIFIED

UNCLASSIFIED

Navy • President's Budget FY 2012 • RDT&E Program

***Budget Activity 07: Operational Systems Development
Appropriation 1319: Research, Development, Test & Evaluation, Navy***

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
222	07	0307217N	EPX (EP-3E Replacement).....	
223	07	0308601N	Modeling & Simulation Support.....	
224	07	0702207N	Depot Maintenance (NON-IF).....	
225	07	0702239N	Avionics Component Improvement Program.....	
226	07	0708011N	Industrial Preparedness.....	
227	07	0708730N	Maritime Tech (MARITECH).....	

UNCLASSIFIED

UNCLASSIFIED

Navy • President's Budget FY 2012 • RDT&E Program

Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
(U)Distributed Common Ground/Surface Systems	0305208M	212	07.....	
(U)MARINE CORPS COMBAT SERVICES SUPPORT	0604717M	165	07.....	
(U)RQ-21A	0305239M	221	07.....	
AMRAAM	0207163N	194	07.....	
Airborne Reconnaissance Sys	0305206N	210	07.....	
Amphibious Tactical Supt Units	0204413N	178	07.....	
Aviation Improvements	0205633N	186	07.....	
Avionics Component Improvement Program	0702239N	225	07.....	
Cobra Judy	0305149N	206	07.....	
Consolidated Afloat Network Ent SVCS(CANES)-MIP	0303238N	204	07.....	
Consolidated Afloat Network Ent Services(CANES)	0303138N	201	07.....	
Consolidated Trng Sys Dev	0204571N	179	07.....	
Cryptologic Direct Support	0204574N	180	07.....	
Depot Maintenance (NON-IF)	0702207N	224	07.....	
Distributed Common Ground Sys	0305208N	213	07.....	
E-2 Squadrons	0204152N	173	07.....	
EPX (EP-3E Replacement)	0307217N	222	07.....	

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Navy • President's Budget FY 2012 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Elect Warfare Readiness Supt	0204575N	181	07.....	
F/A-18 Squadrons	0204136N	172	07.....	
Fleet Tactical Development	0204163N	174	07.....	
Harm Improvement	0205601N	182	07.....	
Industrial Preparedness	0708011N	226	07.....	
Information Sys Security Program	0303140N	202	07.....	
Integrated Surveillance System	0204311N	177	07.....	
Joint High Speed Vessel (JHSV)	0208058N	195	07.....	
MARINE COPRS DATA SYSTEMS	0604766M	166	07.....	
MC Ground Cmbt Spt Arms Sys	0206623M	190	07.....	
MK-48 ADCAP	0205632N	185	07.....	
MQ-8 UAV	0305231N	215	07.....	
Marine Corps Cmbt Services Supt	0206624M	191	07.....	
Marine Corps Comms Systems	0206313M	189	07.....	
Maritime Tech (MARITECH)	0708730N	227	07.....	
Medium Range Maritime UAS	0305237N	220	07.....	
Modeling & Simulation Support	0308601N	223	07.....	
Navy Meteorological and Ocean Sensors-Space(METOC)	0305160N	207	07.....	
Navy Science Assistance Progr	0205658N	187	07.....	
Navy Strategic Comms	0101402N	170	07.....	

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Navy • President's Budget FY 2012 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Operational Nuclear Power Sys	0205675N	188	07.....	
RQ-11 UAV	0305232M	216	07.....	
RQ-4 UAV	0305220N	214	07.....	
RQ-7 UAV	0305233N	217	07.....	
Rapid Technology Transition (RTT)	0203761N	171	07.....	
SSBN Security Tech Program	0101224N	168	07.....	
Satellite Communications (Space)	0303109N	200	07.....	
Small (LEVEL 0) Tactical UAS (STUASL0)	0305234M	218	07.....	
Small (LEVEL 0) Tactical UAS (STUASL0)	0305234N	219	07.....	
Strategic Sub & Wpns Sys Supt	0101221N	167	07.....	
Submarine Acoustic War Dev	0101226N	169	07.....	
Surface ASW Cmbt Sys Integr	0205620N	184	07.....	
Surface Support	0204228N	175	07.....	
Tactical Aim Missiles	0207161N	193	07.....	
Tactical Data Links	0205604N	183	07.....	
Tactical Unmanned Aer Vehicles	0305204N	209	07.....	
Tomahawk Mssn Planning Ctr	0204229N	176	07.....	
USMC Intelligence/Electronics Warfare Sys	0206625M	192	07.....	
Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev	0604402N	164	07.....	
WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	0303150M	203	07.....	

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	295.738	266.368	198.298	-	198.298	143.142	41.975	-	-	0.000	945.521
3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>	295.738	196.068	198.298	-	198.298	143.142	41.975	-	-	0.000	875.221
3191: <i>UCAS Technical Maturation</i>	-	70.300	-	-	-	-	-	-	-	0.000	70.300

A. Mission Description and Budget Item Justification

The 2005 Quadrennial Defense Review published February 2006 and OSD Advanced Technology & Logistics Executive Committee Memorandum of February 2006 supported direction to restructure the Joint Unmanned Combat Air System (UCAS) program into a new Navy UCAS program. The Navy UCAS program will develop an unmanned, longer-range, carrier-based aircraft capable of being air-refueled to provide greater standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The Navy was directed to demonstrate carrier operations, including Autonomous Aerial Refueling, of a Low Observable (LO) platform UCAS and to mature required technologies to a Technology Readiness Level-6; which, is required to enter Milestone B for a potential follow on acquisition program.

The Navy UCAS designed for autonomous launch and recovery as well as operations in the Carrier Control Area, is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, LO platform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as Primary Flight Control displays, Landing Safety Officer displays, and Carrier Air Traffic Control Center stations.

The Navy UCAS program will be structured to match program resources to United States Navy objectives/constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. Candidate Technology Maturation efforts include transformational communications, advanced integrated propulsion, aircraft carrier suitable materials, LO sensors and apertures, sense and avoid functionality (in an LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs are being developed as a result of the demonstration. Maturation of candidate technologies support the evaluation of alternatives needed for a future milestone decision and subsequent entry into Engineering and Manufacturing Development (EMD). The Navy consolidated Project 3191 into Project 3178 in FY10 and subsequently separated them in FY11. Project 3191 was reprogrammed into Project 3178 in FY12-FY14. EMD funding is not covered, nor described in this exhibit.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i>	PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>
BA 7: <i>Operational Systems Development</i>	

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	304.907	266.368	215.974	-	215.974
Current President's Budget	295.738	266.368	198.298	-	198.298
Total Adjustments	-9.169	-	-17.676	-	-17.676
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-8.302	-			
• Program Adjustments	-	-	-16.019	-	-16.019
• Section 219 Reprogramming	-0.849	-	-	-	-
• Rate/Misc Adjustments	-	-	-1.657	-	-1.657
• Congressional General Reductions Adjustments	-0.018	-	-	-	-

Change Summary Explanation

Technical: N/A

Schedule:

Project 3178: The following events were revised as part of the ongoing program baseline review.

- Air Vehicle-1 Development & Integration completion moved from 4th QTR FY09 to 1st QTR FY11.
- Air Vehicle-2 Development & Integration completion moved from 1st QTR FY11 to 4th QTR FY11.
- MCS Software Development, Integration & Support completion moved from 2nd QTR FY11 to 4th QTR FY12.
- Surrogate Testing completion moved from 4th QTR FY11 to 4th QTR FY13.
- First Flight moved from 2nd QTR FY10 to 2nd QTR FY11.
- Airworthiness Testing completion moved from 1st QTR FY11 to 2nd QTR FY12.
- Land Based Carrier Control Area, Catapult Launch & Arrestment Testing completion moved from 1st QTR FY12 to 4th QTR FY13.
- First Ship Landing moved from 2nd QTR FY12 to 2nd QTR FY13.
- Sea Trials completion moved from 3rd QTR FY13 to 4th QTR FY13.
- Ship Integration completion moved from 3rd QTR FY13 to 2nd QTR FY13.
- Autonomous Aerial Refueling (AAR) categories shown in PB-11 were removed and replaced with System Design, System Integration and Surrogate/Air Vehicle Flight Test to show the appropriate level of detail based on the amount of scope of the effort.
- AAR System Integration completion moved from 3rd QTR FY10 to 3rd QTR FY14

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>

-AAR System Design completion moved from 2nd QTR FY11 to 4th QTR FY11.
Project 3191: Reprogrammed into Project 3178 in FY12-FY14.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>				PROJECT 3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>	295.738	196.068	198.298	-	198.298	143.142	41.975	-	-	0.000	875.221
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Navy Unmanned Combat Air System (UCAS), designed for autonomous launch and recovery as well as operations in the Carrier Control Area, is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, Low Observable (LO) planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as Primary Flight Control displays, Landing Safety Officer (LSO) displays, and Carrier Air Traffic Control Center (CATCC) stations.

The Navy consolidated Project 3191 into Project 3178 in FY10 and subsequently separated them in FY11. Project 3191 was reprogrammed into Project 3178 in FY12-FY14. Navy UCAS technology maturation efforts were contained within this project for FY10.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Product Development	255.302	173.188	168.544
Articles:	0	0	0
<p>Description: The primary effort in the Navy UCAS program is design, development, integration and validation of Air Vehicle Segment, MCS and government led Aircraft Carrier Segment leading to a Carrier demonstration of an unmanned, LO planform UCAS system, and development of internal/external interface documents. In addition, design and development of hardware/software to support Autonomous Aerial Refueling (AAR) will be conducted. Shipboard evaluation of the Navy UCAS includes integration of the Navy UCAS with shipboard systems such as Primary Flight Control displays, LSO displays and CATCC stations.</p> <p>FY 2010 Accomplishments: Continued efforts in the Navy UCAS program designing, developing, integrating and validating the Navy UCAS Air Vehicle Segment, MCS and government led Aircraft Carrier Integration Segment. Continued Air Vehicle 2 assembly and integration. Continued technology maturation, modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs previously included under Project 3191. Installed UCAS-D shipboard components on Nimitz class aircraft carrier. Continued design and development of hardware/software to support AAR.</p> <p>FY 2011 Plans: Continue efforts in the Navy UCAS program designing, developing, integrating and validating the Navy UCAS Air Vehicle Segment, MCS and government led Aircraft Carrier Integration Segment. Complete integration and checkout of Air Vehicle 2.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Installation of UCAS-D shipboard components on Nimitz class aircraft carrier. Continue design and development of hardware/software to support AAR. FY 2012 Plans: Continue efforts in the Navy UCAS program designing, developing, integrating and validating the Navy UCAS Air Vehicle Segment, MCS and government led Aircraft Carrier Integration Segment. Technical reviews required before sea-trials will be conducted. Installation of UCAS-D shipboard components on Nimitz class aircraft carrier. Continue AAR integration efforts.				
Title: Support		20.861	-	-
		Articles: 0		
FY 2010 Accomplishments: Performed activities that supported the evaluation of alternatives needed for a future milestone decision and subsequent entry into Engineering and Manufacturing Development.				
Title: Test and Evaluation Support		9.049	11.337	15.443
		Articles: 0	0	0
FY 2010 Accomplishments: Air Vehicle 1 conducted low, medium and high speed taxi testing. Conducted light civil surrogate and F/A-18D surrogate aircraft testing with Carrier Fixed Wing Nuclear (CVN)-72.				
FY 2011 Plans: Air Vehicle 1 will conduct its first flight and conduct airworthiness and envelope expansion testing at Edwards AFB. Air Vehicle 2 will conduct its first flight and conduct airworthiness and envelope expansion testing at Edwards AFB. Continue light civil surrogate and F/A-18D surrogate testing with Nimitz class aircraft carrier.				
FY 2012 Plans: After airworthiness and envelope expansion test completion, Air Vehicles 1 and 2 will transfer to Naval Air Warfare Center Aircraft Division (NAWCAD) Patuxent River, MD for shore-based carrier suitability testing. Conduct shore-based carrier suitability testing with Air Vehicles 1 and 2. Continue light civil surrogate and F/A-18D surrogate testing with Nimitz class aircraft carrier.				
Title: Management		10.526	11.543	14.311
		Articles: 0	0	0
FY 2010 Accomplishments: Completed Government management, engineering, and contract support.				
FY 2011 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Government management, engineering, and contract support.				
FY 2012 Plans: Government management, engineering, and contract support.				
Accomplishments/Planned Programs Subtotals		295.738	196.068	198.298
C. Other Program Funding Summary (\$ in Millions)				
N/A				
D. Acquisition Strategy				
<p>In the 2005 Quadrennial Defense Review, the Navy was directed to restructure the Joint UCAS program and develop an unmanned, longer-range carrier-based aircraft capable of being air-refueled to provide greater aircraft carrier standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The primary goal is risk reduction for carrier integration while developing the critical data necessary to support a potential follow on acquisition milestone decision. The Navy UCAS effort will focus on designing, developing, and evaluating the core capabilities which safely demonstrate carrier interoperability. Currently, primary hardware development for the Navy UCAS effort is being performed under a Federal Acquisition Regulation based, cost plus incentive fee-type contract competitively awarded to a single contractor.</p>				
E. Performance Metrics				
Complete airworthiness and envelope expansion testing. Conduct shore-based carrier suitability testing. Conduct F/A-18D surrogate aircraft testing with Nimitz class aircraft carrier.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aviation/ Ship Integration	C/CPFF	Rockwell/AFRL:Rome, NY	7.585	0.950	Dec 2010	2.000	Nov 2011	-		2.000	3.200	13.735	13.735
Aviation/ Ship Integration	C/CPFF	L-3 Com Titan:MD	7.882	2.396	Dec 2010	2.000	Dec 2011	-		2.000	4.240	16.518	16.518
Aviation/Ship Integration	WR	NAWCAD:MD	28.015	11.611	Nov 2010	15.580	Nov 2011	-		15.580	24.109	79.315	
Aviation/Ship Integration	C/CPFF	Various:Various	2.142	2.100	Feb 2011	0.900	Jan 2012	-		0.900	2.200	7.342	7.342
Primary Hardware Development	C/CPFF	Northrop Grumman Corporation:CA	572.170	144.614	Nov 2010	129.187	Nov 2011	-		129.187	69.029	915.000	915.000
Systems Engineering	WR	NAWCAD:MD	20.870	8.916	Nov 2010	15.310	Nov 2011	-		15.310	30.636	75.732	
Product Development	Various	Various:Various	94.950	2.601	Dec 2010	3.567	Dec 2011	-		3.567	7.562	108.680	
Subtotal			733.614	173.188		168.544		-		168.544	140.976	1,216.322	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Support	Various	Various:Various	20.861	-		-		-		-	0.000	20.861	
Subtotal			20.861	-		-		-		-	0.000	20.861	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	MIPR	Edwards AFB:CA	6.142	3.333	Nov 2010	4.737	Nov 2011	-		4.737	3.309	17.521	
Developmental Test & Evaluation	WR	NAWCAD:MD	8.741	7.633	Nov 2010	10.338	Nov 2011	-		10.338	21.035	47.747	
Test & Evaluation	Various	Various:Various	0.635	0.371	Nov 2010	0.368	Nov 2011	-		0.368	0.780	2.154	
Subtotal			15.518	11.337		15.443		-		15.443	25.124	67.422	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>
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Unmanned Combat Air Vehicle (UCAV) ADV CP/PROTO DEV	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Systems Development																												
Air Vehicle 1 - Development & Integration	█																											
Air Vehicle 2 - Development & Integration					█																							
Mission Control Segment Software Devel, Int, & Supt					█																							
Ship Integration (Build 1)	█																											
Ship Integration and Installations (Build 2)					█																							
Autonomous Aerial Refueling (AAR)					█																							
System Design					█																							
System Integration									█																			
Surrogate/Air Vehicle Flight Test													█															
Technology Maturation	█																											
Test & Evaluation																												
Surrogate Testing					█																							
Airworthiness Testing					█																							
First Flight ▲					█																							
Land Based Carrier Control Area, Catapult Launch & Arrestment Testing									█																			
Sea Trials													█															
First Ship Landing ▲													█															

2012PB - 0604402N - 3178

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3178: <i>Unmanned Combat Air System CV-Demo (UCAS-D)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Unmanned Combat Air Vehicle (UCAV) ADV CP/PROTO DEV</i>				
Systems Development: Air Vehicle 1	1	2010	1	2011
Systems Development: Air Vehicle 2	1	2010	4	2011
Systems Development: Software Devel, Int, & Supt	1	2010	4	2012
Systems Development: Ship Integration: Build 1	1	2010	4	2010
Systems Development: Ship Integration: Build 2	2	2010	2	2013
Systems Development: Autonomous Aerial Refueling (AAR): System Design - AAR	1	2010	4	2011
Systems Development: Autonomous Aerial Refueling (AAR): System Integration - AAR	3	2010	3	2014
Systems Development: Autonomous Aerial Refueling (AAR): Surrogate/Air Vehicle Flight Test - AAR	4	2010	1	2014
Systems Development: Technology Maturation: Technology Maturation	1	2010	4	2010
Test & Evaluation: Surrogate Testing: Surrogate Testing	1	2010	4	2013
Test & Evaluation: Airworthiness Testing: Airworthiness Testing	1	2011	2	2012
Test & Evaluation: Airworthiness Testing: Airworthiness Testing - First Flight	2	2011	2	2011
Test & Evaluation: Land Based Carrier Control Area, Catapult Launch & Arrestment Testing: Land Based Carrier Control Area, Catapult Launch & Arrestment Testing	1	2012	4	2013
Test & Evaluation: Sea Trials: Sea Trials	1	2013	4	2013
Test & Evaluation: Sea Trials: First Ship Landing	2	2013	2	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3191: <i>UCAS Technical Maturation</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3191: <i>UCAS Technical Maturation</i>	-	70.300	-	-	-	-	-	-	-	0.000	70.300
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Navy Unmanned Combat Air System (UCAS) program is an Advanced Development effort. The Navy UCAS program will be structured to match program resources to United States Navy objectives/constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. Candidate technology maturation efforts include transformational communications, advanced integrated propulsion, aircraft carrier suitable materials, Low Observable (LO) sensors and apertures, sense and avoid functionality (all operating in a LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs are being developed as a result of the demonstration. Maturation of candidate technologies support the evaluation of alternatives needed for a future milestone decision and subsequent entry into Engineering and Manufacturing Development (EMD). EMD funding is not covered, nor described in this exhibit.

The Navy consolidated Project 3191 into Project 3178 in FY10 and subsequently separated them in FY11. Project 3191 was reprogrammed into Project 3178 in FY12-FY14. Navy UCAS technology maturation efforts are contained within Project 3178 for FY10.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Product Development</p> <p style="text-align: right;">Articles:</p> <p>Description: Identification and maturation of technologies required to support the demonstration of an unmanned, LO platform Navy UCAS on an aircraft carrier including modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs to support the evaluation of alternatives needed for a future milestone decision and subsequent entry into EMD.</p> <p>FY 2011 Plans: Continue technology maturation, modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs.</p>	-	43.200 0	-
<p>Title: Support</p> <p style="text-align: right;">Articles:</p> <p>FY 2011 Plans:</p>	-	27.100 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3191: <i>UCAS Technical Maturation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Perform activities that support the evaluation of alternatives needed for a future milestone decision and subsequent entry into EMD.			
Accomplishments/Planned Programs Subtotals	-	70.300	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

In the 2005 Quadrennial Defense Review, the Navy was directed to restructure the Joint UCAS program and develop an unmanned, longer-range carrier-based aircraft capable of being air-refueled to provide greater aircraft carrier standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The primary goal is risk reduction for maturation of critical technologies, while developing the critical data necessary to support a potential follow on acquisition milestone decision. The Navy UCAS effort will focus on designing, developing, and evaluating the core capabilities which safely demonstrate carrier interoperability. As part of this effort, individual contracts will be awarded either competitively or sole sourced in a firm fixed price or cost plus arrangement to evolve various technologies to meet the Technology Readiness Level-6 to support the Advanced Development effort.

E. Performance Metrics

The goal of the Technology Maturation Project Unit is to identify and mature critical technologies and reduce the risk of carrier integration of a UCAS.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3191: <i>UCAS Technical Maturation</i>
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UCAS Technical Maturation	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Technology Maturation																																
Acquisition Planning																																
Advanced Development Engineering																																
Concept Development																																

2012PB - 0604402N - 3191

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604402N: <i>Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev</i>	PROJECT 3191: <i>UCAS Technical Maturation</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>UCAS Technical Maturation</i>				
Technology Maturation: Acquisition Planning: Acquisition Planning	1	2011	4	2011
Technology Maturation: Advanced Development Engineering: Advanced Development Engineering	1	2011	4	2011
Technology Maturation: Concept Development: Concept Development	1	2011	4	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604717M: (U)MARINE CORPS COMBAT SERVICES SUPPORT
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	-	0.400	-	0.400	0.325	0.260	0.130	0.130	Continuing	Continuing
2510: <i>MAGTF CSSE & SE</i>	-	-	0.400	-	0.400	0.325	0.260	0.130	0.130	Continuing	Continuing

A. Mission Description and Budget Item Justification

GLOBAL COMBAT SUPPORT SYSTEM - MARINE CORPS (GCSS-MC) GLOBAL FORCE MANAGEMENT DATA INITIATIVE (GFM-DI). Global Combat Support System-Marine Corps (GCSS-MC) is the physical implementation of the enterprise Information Technology (IT) architecture designed to support both improved and enhanced Marine Air Ground Task Force (MAGTF) Combat Support Services (CSS) functions and MAGTF Commander and Combatant Commanders/Joint Task Force (CC/JTF) combat support information requirements. The initial program includes all transactional CSS systems related to Supply Chain Management (SCM) and Enterprise Asset Management (EAM) functionality enabled with Service Management functions. The primary goal of GFM-DI initiative is to support the capture of force structure authorization data, such as IUID data from the GCSS-MC system, and facilitate the accessibility of this data via web services.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	0.400	-	0.400
Total Adjustments	-	-	0.400	-	0.400
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	0.400	-	0.400

Change Summary Explanation

Funding supports the Joint Global Force Management - Data Initiative (GFM-DI). The acquisition details are not finalized, but will be completed in the Spring 2011.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604717M: <i>(U)MARINE CORPS COMBAT SERVICES SUPPORT</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2510: <i>MAGTF CSSE & SE</i>	-	-	0.400	-	0.400	0.325	0.260	0.130	0.130	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

GLOBAL COMBAT SUPPORT SYSTEM - MARINE CORPS (GCSS-MC) GLOBAL FORCE MANAGEMENT DATA INITIATIVE (GFM-DI). Global Combat Support System-Marine Corps (GCSS-MC) is the physical implementation of the enterprise Information Technology (IT) architecture designed to support both improved and enhanced Marine Air Ground Task Force (MAGTF) Combat Support Services (CSS) functions and MAGTF Commander and Combatant Commanders/Joint Task Force (CC/JTF) combat support information requirements. The initial program includes all transactional CSS systems related to Supply Chain Management (SCM) and Enterprise Asset Management (EAM) functionality enabled with Service Management functions. The primary goal of GFM-DI initiative is to support the capture of force structure authorization data, such as IUID data from the GCSS-MC system, and facilitate the accessibility of this data via web services.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: New Accomplishment/Planned Program Entry	-	-	0.400
Articles:			0
FY 2012 Plans: FY12 activities include the completion of the GCSS LCM Block 2 requirements analysis and the preparation of the Capabilities Design Document (CDD).			
Accomplishments/Planned Programs Subtotals	-	-	0.400

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The GFM-DI initiative support will be integrated into the GCSS-MC/LCM Block 2 requirements analysis and program planning scheduled to begin during FY12. Block 2 will expand the retail supply functionality of Block 1 by implementing Marine Corps-wide wholesale and retail warehouse management and automated information technologies, such as RFID and bar code scanning, and the study of IUID will be incorporated into the Block 2 analysis.

E. Performance Metrics

Technical: Realignment of funds into PE 0604717M represents USMC commitment to the Department's Global Force Management-Data Initiative advocated by VCJCS.

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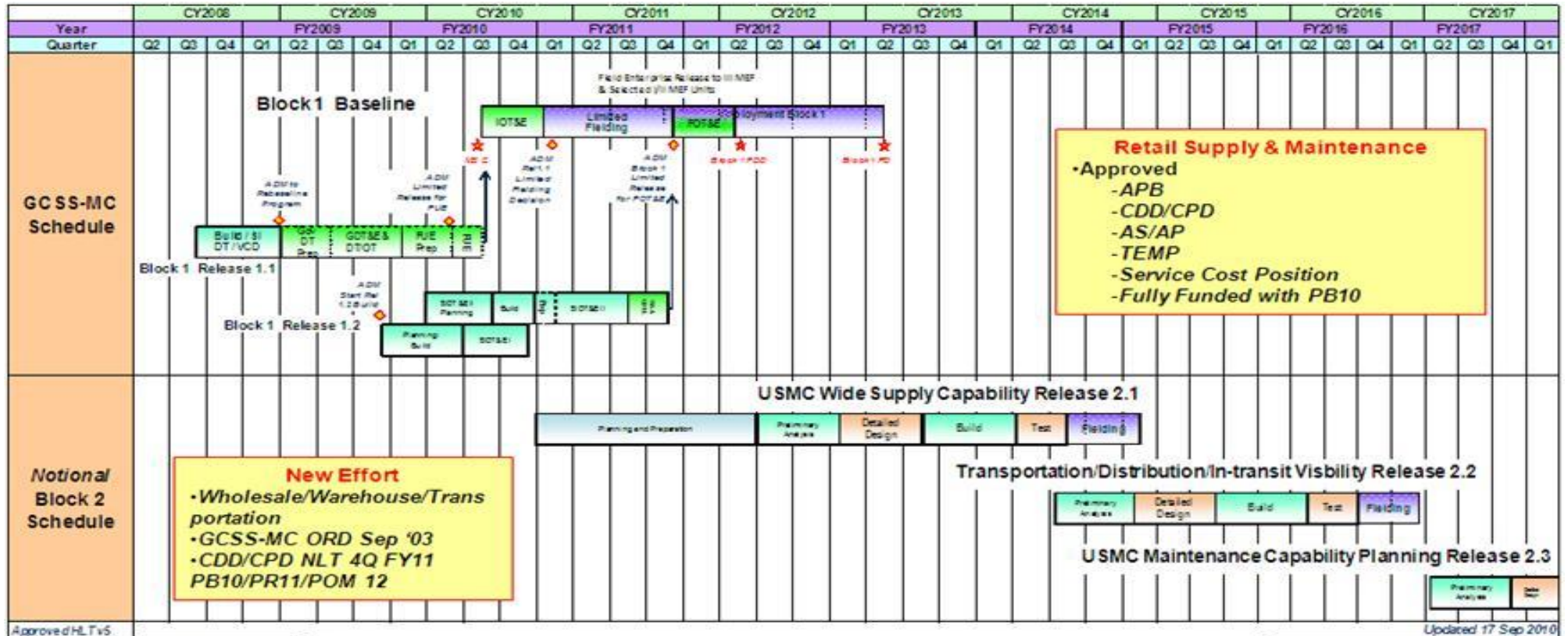
Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0604717M: (U)MARINE CORPS COMBAT
 SERVICES SUPPORT

PROJECT
 2510: MAGTF CSSE & SE



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0604717M: (U)MARINE CORPS COMBAT
 SERVICES SUPPORT

PROJECT

2510: MAGTF CSSE & SE

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2510				
GCSS LCM Block 2, Release 2.1 IRB	4	2011	4	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604766M: <i>MARINE COPRS DATA SYSTEMS</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	-	1.650	-	1.650	1.375	1.200	1.000	1.000	Continuing	Continuing
2906: <i>Marine Corps IT</i>	-	-	1.650	-	1.650	1.375	1.200	1.000	1.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

PE 0604766M reflects a portion of the Global Force Management-Data Initiative advocated by the VCJCS. Funding enhancements support GFM-DI implementation of the Force Management and Adaptive Planning Processes by FY13 and Financial, Health Records, and Information Assurance by FY16.

B. Program Change Summary (\$ in Millions)

	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	1.650	-	1.650
Total Adjustments	-	-	1.650	-	1.650
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	1.650	-	1.650

Change Summary Explanation

Funding supports the Joint Global Force Management - Data Initiative (GFM-DI). The acquisition details are not finalized, but will be completed in the Spring 2011.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0604766M: <i>MARINE COPRS DATA SYSTEMS</i>	PROJECT 2906: <i>Marine Corps IT</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2906: <i>Marine Corps IT</i>	-	-	1.650	-	1.650	1.375	1.200	1.000	1.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Global Force Management - Data Initiative enhancements.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Total Force Structure Management System (TFSMS)	-	-	1.650
Articles:			0
FY 2012 Plans: TOTAL FORCE STRUCTURE MANAGEMENT SYSTEM (TFSMS) will associate and maintain Marine Corp Organizational Server (MCOS) Force Structure (FS) data in Marine Corps Total Force System (MCTFS) to link FS Organization Unique Identifier's (OUID) to Electronic Data Interchange Personnel Identifiers (EDI-PI) and Billet Identification Codes (BIC) (ie: "spaces" to "faces"). Additionally funding will be used to develop USMC enterprise Attribute Based Access Control (ABAC) in coordination with NII/ DISA and develop means for MCOS FS data to be consumed by the Navy-Marine Corps Mobilization Process System and Navy Manpower Programming and Budget System and associate to appropriate data elements.			
Accomplishments/Planned Programs Subtotals	-	-	1.650

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Programs will use an incremental development methodology utilizing short development periods. The contracting strategy is to use a firm-fixed price contract to reduce risk to government, with additional capabilities defined by a Marine Corps Configuration Control Board and delivered to the service integrator as a modification to the contract.

E. Performance Metrics

Technical: This exhibit reflects a break-out of GFM-DI efforts into unique USMC PE's.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	67.980	81.184	88.873	-	88.873	111.007	145.959	134.101	132.609	Continuing	Continuing
0004: <i>TRIDENT Submarine System Improvement</i>	0.371	0.431	-	-	-	-	-	-	-	0.000	0.802
0951: <i>Joint Warhead Fuze Sustainment Program</i>	13.970	33.100	42.171	-	42.171	61.643	95.633	106.627	104.633	Continuing	Continuing
2228: <i>Technical Applications Programs</i>	44.123	43.015	42.097	-	42.097	44.762	45.717	22.861	23.279	Continuing	Continuing
3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>	5.772	4.638	4.605	-	4.605	4.602	4.609	4.613	4.697	Continuing	Continuing
9999: <i>Congressional Adds</i>	3.744	-	-	-	-	-	-	-	-	0.000	3.744

A. Mission Description and Budget Item Justification

The TRIDENT Submarine System Improvement Program (0004) develops and integrates command and control improvements needed to maintain TRIDENT Submarine operational capability through the life cycle of this vital strategic asset. The program conducts efforts needed to maintain strategic connectivity, ensure platform invulnerability, and reduce lifecycle costs through Obsolete Equipment Replacement (OER) and commonality.

The Joint Warhead Fuze Sustainment Program (0951) is an effort to develop advanced components to improve the reliability, safety, and security of Arming, Fuzing and Firing (AF&F) systems for nuclear reentry systems. The current effort is focused on supporting the Alteration of the AF&F system for the MK5/W88 system which will be five years beyond its design life at the scheduled deployment of the AF&F Alteration. This effort also supports future utilization of the developed components by the US Air Force and United Kingdom.

The Technology Applications Program (2228) supports the TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) that provides the U.S. a weapon system with greater accuracy and payload capability as compared to the TRIDENT I (C4) system. TRIDENT II enhances U.S. strategic deterrence providing a survivable, sea-based system capable of engaging the full spectrum of potential targets with fewer submarines. This Program Element supports investigations into new technologies which would help mitigate the program impact due to component obsolescence and a rapidly decreasing manufacturing support base. These efforts include Reentry System Applications and Guidance System Applications.

The Integrated Nuclear Weapons Security System (INWSS) (3158) efforts support the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located landside at Naval Submarine Base, Kings Bay, or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The Chief of Naval Operations (CNO) has assigned the Strategic Systems Programs, the FBM program manager, with mission responsibility for the safeguard of FBM nuclear technologies. This budget supports efforts directed at

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i>	PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>
BA 7: <i>Operational Systems Development</i>	

improving the current technological baseline through a series of studies focusing on land and waterside requirements, including both surface and underwater. These efforts will improve countermeasure technologies to address detection, delay and denial.

The Advanced LINAC Facility Program seeks to develop and complete the design for an advanced Linear Accelerator Facility to perform radiation simulation of transient dose rate events. This facility will perform with advanced capabilities to overcome limitations of existing facilities, allowing greater efficiency in testing and reducing costs.

The Adelos National Security Sensor System effort develops an advanced fiber optic sensor system for counterterrorism and antiterrorism operations to meet rigorous performance metrics necessary for nuclear facility, material, and weapons protection. The Adelos component will evaluate the use of advanced classification algorithms for reduction of false positive detections of objects in proximity to fiber optic sensing elements. Adelos program also seeks to expand the application of a unique fiber optic sensor system designed to provide covert surveillance and intelligence gathering of potential threats to our nation's nuclear activity.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	69.385	81.184	83.089	-	83.089
Current President's Budget	67.980	81.184	88.873	-	88.873
Total Adjustments	-1.405	-	5.784	-	5.784
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.271	-			
• Program Adjustments	-	-	6.359	-	6.359
• Section 219 Reprogramming	-0.122	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.575	-	-0.575
• Congressional General Reductions Adjustments	-0.012	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

 Congressional Add: *Advanced Linear Accelerator (LINAC) Facility*

 Congressional Add: *Adelos National Security Sensor System*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	0.956	-
	2.788	-
Congressional Add Subtotals for Project: 9999	3.744	-
Congressional Add Totals for all Projects	3.744	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101221N: *Strategic Sub & Wpns Sys Supt*

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 0004: <i>TRIDENT Submarine System Improvement</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0004: <i>TRIDENT Submarine System Improvement</i>	0.371	0.431	-	-	-	-	-	-	-	0.000	0.802
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The TRIDENT operational systems development program results in improvements to the baseline TRIDENT Combat System. Current TRIDENT Combat Systems were first developed in the early 1970s and are becoming increasingly difficult to maintain and offer comparatively less performance than more recently designed systems. Previous efforts to upgrade portions of the TRIDENT Combat System include improvements via sonar and combat control hardware and software (e.g., QE2 programs), feasibility of increased countermeasure capability and a concept evaluation of an Submarine Fleet Mission Program Library (SFMPL) interface. Due to the sensitivity of TRIDENT programs it is assessed that international technology will not have a major impact or be a recipient of the benefits derived from this effort. Development strategies will significantly enhance the sustainability and operability of the sonar, communications and Combat Control Systems on TRIDENTs by evaluating both Obsolete Equipment Replacement (OER) possibilities and potential improvements.

The TRIDENT Submarine System Improvement Program develops and integrates command and control improvements needed to maintain TRIDENT Submarine operational capability through the life cycle of this vital strategic asset. The program conducts efforts needed to maintain strategic connectivity, ensure platform invulnerability, and reduce lifecycle costs through Obsolete Equipment Replacement (OER) and commonality.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: TRIDENT Submarine System Improvement	0.371	0.431	-
Articles:	0	0	
FY 2010 Accomplishments:			
Conducted Commercial Off The Shelf (COTS)/emergent technology and Command Control System (CCS) performance requirements evaluations supporting Trident modernization program/plans. Researched and evaluated effectiveness of proposed new technology over the ships' life cycle. Analyzed impacts on platform performance with proposed new technology changes using architecture models and tests. Studied and identified options in selecting and installing new technology improvements. Evaluated Navigation data interface requirements to meet Electronic Chart Display and Information System Navy (ECDIS-N) compliance on Trident hulls. Provided arrangement layouts Government Furnished Information (GFI) to Electric Boat (EB) Ship Design Agent (SDA).			
FY 2011 Plans:			
Conduct Commercial Off The Shelf (COTS)/emergent technology and Command Control System (CCS) performance requirements evaluations supporting Trident modernization program/plans. Research and evaluate effectiveness of proposed			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 0004: <i>TRIDENT Submarine System Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
new technology over the ships' life cycle. Analyze impacts on platform performance with proposed new technology changes using architecture models and tests. Study and identify options in selecting and installing new technology improvements. Evaluate Navigation data interface requirements to meet Electronic Chart Display and Information System Navy (ECDIS-N) compliance on Trident hulls. Provide arrangement layouts Government Furnished Information (GFI) to Electric Boat (EB) Ship Design Agent (SDA).			
Accomplishments/Planned Programs Subtotals	0.371	0.431	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Efforts conducted by U.S. Navy laboratories.

E. Performance Metrics

Not applicable

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>				PROJECT 0951: <i>Joint Warhead Fuze Sustainment Program</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0951: <i>Joint Warhead Fuze Sustainment Program</i>	13.970	33.100	42.171	-	42.171	61.643	95.633	106.627	104.633	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Warhead Fuze Sustainment Program is an effort to develop advanced components to improve the reliability, safety, and security of Arming, Fuzing and Firing (AF&F) systems for nuclear reentry systems. The current effort is focused on supporting the Alteration of the AF&F system for the MK5/W88 system which will be five years beyond its design life at the scheduled deployment of the AF&F Alteration. This effort also supports future utilization of the developed components by the US Air Force and United Kingdom.

A study on SSBN based Conventional Prompt Global Strike (CPGS) options will be completed to address safety, security, and surety issues, along with ambiguity issues as they relate to various sea-based designs. Begin trade analysis for cost performance and schedule for those designs; information that is required to better understand the capabilities that could be delivered from naval platforms.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: TRIDENT II	13.970	33.100	42.171
Articles:	0	0	0
Description: Identify, prioritize, develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs.			
FY 2010 Accomplishments: FY 2010 efforts included: (\$13.970) Joint Warhead Fuze Sustainment Program Supported USN, USAF, and UK engineer working group. Began component level testing of potential arming/fuzing devices and technologies. Developed approach to address radiation hardening issues in electronic AF&F components.			
FY 2011 Plans: FY 2011 efforts include: (\$23.100) Joint Warhead Fuze Sustainment Program Develop, proof, and demonstrate identified advanced technologies for future AF&Fs Support USN, USAF, and UK engineer working group. Perform component level testing of potential arming/fuzing devices and technologies.			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 0951: <i>Joint Warhead Fuze Sustainment Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>Begin development of advanced AF&F safety and surety architecture solution. Document enveloping requirements to support Navy, Air Force, and UK applications. (\$10.0M) Global Strike Conduct a study that addresses safety and surety issues, along with ambiguity issues as they relate to various sea-based designs. Begin trade analysis for cost performance & schedule for those designs; information that is required to better understand the capabilities that could be delivered from naval platforms.</p> <p><i>FY 2012 Plans:</i> FY2012 efforts include: (\$42.171) Joint Warhead Fuze Sustainment Program Continue development, proofing, demonstration, and technology maturation of identified advanced technologies for future AF&Fs Support USN, USAF, and UK engineer working group. Conduct AF&F sub-assembly design demonstrations Continue development of advanced safety and surety architecture solutions. Complete Conceptual Design Review. Commence detailed design.</p>				
Accomplishments/Planned Programs Subtotals		13.970	33.100	42.171
C. Other Program Funding Summary (\$ in Millions)				
N/A				
D. Acquisition Strategy				
Contracts will continue to be awarded to those sources who were engaged in the Mk4LE Reentry Body development program and are currently engaged in the production and/or operational support of the deployed Mk4LE Reentry Body on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4				
E. Performance Metrics				
Not applicable				

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101221N: *Strategic Sub & Wpns Sys Supt*

PROJECT

0951: *Joint Warhead Fuze Sustainment Program*

Proj 0951	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 0951: <i>Joint Warhead Fuze Sustainment Program</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 0951</i>				
Contract Go-ahead and Milestones	2	2010	2	2010
Define Technical Requirements	2	2010	3	2011
Technology Development Strategies	2	2010	3	2011
Capabilities Assessment	4	2010	3	2011
Technology Maturation	2	2010	4	2013
Design Demonstration	1	2012	4	2014
Assembly Level Testing	3	2012	4	2016
Performance Assessment of Tested Designs	1	2013	4	2016
Development Tests	3	2014	4	2016
Production Engineering	1	2013	4	2016
General JCIDS Support	2	2010	4	2016
General Acquisition Planning Support	2	2010	4	2016
Global Strike Payload Ambiguity Studies	1	2011	4	2011
Global Strike Surety Studies	1	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 2228: <i>Technical Applications Programs</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
<i>2228: Technical Applications Programs</i>	44.123	43.015	42.097	-	42.097	44.762	45.717	22.861	23.279	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project supports implementation of a coordinated Navy/Air Force Reentry System Applications Program (RSAP), and a coordinated Navy/Air Force Strategic Guidance Applications Program (GAP). Reentry vehicle and guidance technology had been rapidly eroding beyond the point of being capable to respond to increasing aging phenomena and future requirements. The December 2001 DOD Nuclear Posture Review determined that infrastructure is a critical part of the new triad and these efforts form part of the infrastructure that supports the nuclear force structure.

The RSAP program, through sustainment of the reentry vehicle technology base, will maintain confidence in the dependability and reliability of strategic SLBM and ICBM weapon systems over the long term when no new systems will be in development. Critical and unique attributes necessary for the design, development and in-service support of current and modernized SLBM reentry systems have been defined and will be maintained to ensure a functioning readiness application technical capability in reentry is preserved. Working closely with the Air Force, Navy and Air Force requirements have been integrated into a comprehensive program. The program maintains close coordination with the DOD Science and Technology (S&T) community in order to: leverage S&T programs, ensure system driven technology base requirements are considered in contract awards, eliminate duplication of effort and provide an opportunity to demonstrate appropriate emerging technologies through a reentry flight test evaluation process.

The GAP program provides a minimum strategic guidance core technology development capability consistent with the Strategic Advisory Group (SAG) recommendations to COMSTRATCOM. The SAG recommended that SSP establish a program which preserves this critical design and development core. It is a basic bridge program which develops critical guidance technology applicable to any of the existing Air Force/Navy strategic missiles. The objective is to transition from current capability to a long term readiness status required to support deployed systems. Air Force and Navy guidance technology requirements are integrated and needs to be prioritized. Efforts are focused on alternatives to technologies identified as system "weak links." Currently system accuracy and functionality depends upon key technologies which provide radiation hardened velocity, attitude and stellar sensing capabilities. As the underlying technologies that currently provide these capabilities age and are no longer technically supportable, modern alternatives must be made available in order to allow for orderly replacement. There is no commercial market for these technologies and their viability depends on the strategic community.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Technical Applications Program	44.123	43.015	42.097
Articles:	0	0	0
FY 2010 Accomplishments: FY 2010 efforts included:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 2228: <i>Technical Applications Programs</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>(\$22.663) Continued Reentry System Applications Program. Continued to maintain the current capability and support the planned service life extension of Navy reentry systems. Continued development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T). Continued testing alternative low-cost heat shield and replacement nose tip material. Continued testing operationally aged heat shields to support aging trends and replacement materials assessments. Maintained RSAP technical program plan, conducted system assessments and continued Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. Continued Reentry Body material development and advanced flight test instrumentation activities. Continued development of advanced GPS receiver. Ground tested advanced reentry material systems and advanced instrumentation components. Developed test instrumentation to demonstrate D5LE missile reentry body interface compatibility.</p> <p>(\$21.460) Continued Strategic Guidance Applications Programs (GAP). Developed new architectures using telecom-based optical components for high-precision strategic gyro. Continued to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor. Assessed feasibility of advanced stellar sensor technologies for use in strategic applications; specifically, active pixel and camera-on-a-chip architectures will be evaluated. Utilized the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios. Conducted investigations to improve circumvention and recovery performance.</p> <p>FY 2011 Plans: FY 2011 efforts include: (\$22.574) Continue Reentry System Applications Program. Maintain the current capability and support the planned service life extension of Navy reentry systems. Continue development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T) Continue testing of alternative low-cost heat shield and replacement nose tip material. Analyze advanced aging material to determine its effectiveness. Continue testing of operationally aged heat shields to support aging trends and replacement materials assessments.</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 2228: <i>Technical Applications Programs</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. Continue Reentry Body material development and advanced flight test instrumentation activities. Flight Test the advanced radiation tolerant GPS receiver Ground test advanced reentry material systems and advanced instrumentation components.</p> <p>(\$20.441) Continue Strategic Guidance Applications Programs (GAP). Continue to develop new architectures using telecom-based optical components for high-precision strategic gyro. Continue to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor. Assess feasibility of advanced stellar sensor technologies for use in strategic applications; specifically, active pixel and camera-on-a-chip architectures will be evaluated. Utilize the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios. Investigate concepts for enhanced system test and analysis Conduct investigations to improve circumvention and recovery performance. Investigate concepts for enhanced systems test and analysis</p> <p><i>FY 2012 Plans:</i> FY 2012 efforts include: (\$21.202) Continue Reentry System Applications Program. Maintain the current capability and support the planned service life extension of Navy reentry systems. Continue development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T) Continue testing of alternative low-cost heat shield and replacement nose tip material. Analyze advanced aging material to determine its effectiveness. Continue testing of operationally aged heat shields to support aging trends and replacement materials assessments. Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. Continue Reentry Body material development and advanced flight test instrumentation activities. Ground test advanced reentry material systems and advanced instrumentation components.</p> <p>(\$20.895) Continue Strategic Guidance Applications Programs (GAP).</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 2228: <i>Technical Applications Programs</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue to develop new architectures using telecom-based optical components for high-precision strategic gyro. Continue to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor. Assess feasibility of advanced stellar sensor technologies for use in strategic applications; specifically, active pixel and camera-on-a-chip architectures will be evaluated. Utilize the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios. Investigate concepts for enhanced system test and analysis Conduct investigations to improve circumvention and recovery performance.			
Accomplishments/Planned Programs Subtotals	44.123	43.015	42.097

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Contracts will continue to be awarded to those sources who were engaged in the TRIDENT II (D5) development program and are currently engaged in the production and/or operational support of the deployed D5 Strategic Weapons Systems on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4

E. Performance Metrics

Not applicable

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 2228: <i>Technical Applications Programs</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2228				
RSAP Contract Go-ahead and Milestones	1	2010	1	2016
RSAP Design Development Evaluation Alternative Heat Shield	1	2010	4	2016
RSAP Design Development Evaluation Avionics Battery	1	2010	4	2016
RSAP Design Development Evaluation Avionics Computers	1	2010	4	2016
RSAP System Test	4	2010	4	2016
GAP Contract Award	1	2010	1	2014
GAP Virtual Systems modeling and simulation trade studies for advanced system concepts	1	2010	4	2014
GAP Circumvention and Recovery investigations	1	2010	4	2013
GAP Complete investigation concepts for enhanced systems test & analysis	1	2011	4	2014
GAP design and development of high precision strategic gyro	1	2010	4	2014
GAP Evaluation of emerging alternate accelerometer technologies	1	2010	4	2014
GAP Evaluation of emerging alternate gyro technologies	1	2010	4	2014
GAP Assess feasibility, design, and demonstration of advanced strategic stellar sensor technologies	1	2010	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>				PROJECT 3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>	5.772	4.638	4.605	-	4.605	4.602	4.609	4.613	4.697	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Enhanced Special Weapons effort supports the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located landside at Naval Submarine Base, Kings Bay or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The Chief of Naval Operations (CNO) has assigned the Strategic Systems Programs, the FBM program manager, with mission responsibility for the safeguard of FBM nuclear assets. More specifically, the mission includes landside and pier operations as well as transits to and from the dive point, each of which present challenges to personnel as well as existing technologies. This budget supports efforts directed at improving the current technological baseline through a series of studies focusing on land, waterside, and in transit requirements, including both surface and underwater. Collectively, these efforts will improve countermeasure technologies addressing detection, delay and denial.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: NWSPE Development	5.772	4.638	4.605
Articles:	0	0	0
FY 2010 Accomplishments:			
FY 2010 efforts included:			
(\$5.772) Enhanced Special Weapons/Nuclear Weapons Security program.			
Continued efforts focused on developing an advanced underwater vehicle and diver detection and deterrence system, and enhanced underwater and surface barriers.			
Developed advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems.			
Developed advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities.			
Conducted technology Reviews: The systems will undergo further testing prior to production decisions.			
FY 2011 Plans:			
FY 2011 efforts include:			
(\$4.638) Enhanced Special Weapons/Nuclear Weapons Security program.			
Continue efforts focused on developing an advanced underwater vehicle and diver detection and deterrence system, and enhanced underwater and surface barriers.			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>Continue development of advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems.</p> <p>Continue development of advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities.</p> <p>Technology Reviews: The systems will undergo further testing prior to production decisions.</p> <p>FY 2012 Plans: FY 2012 efforts include: (\$4.605) Enhanced Special Weapons/Nuclear Weapons Security program. Continue efforts focused on developing an advanced underwater vehicle and diver detection and deterrence system, and enhanced underwater and surface barriers. Continue development of advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems. Continue development of advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities. Technology Reviews: The systems will undergo further testing prior to production decisions.</p>			
Accomplishments/Planned Programs Subtotals	5.772	4.638	4.605

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MCN/Various-1: <i>MILCON (CNI) (Nuclear Weapons Security)</i>	154.711	120.503	129.905	0.000	129.905	50.955	0.000	0.000	0.000	Continuing	Continuing
• OPN/Various-2: <i>OPN (Nuclear Weapons Security)</i>	40.401	47.815	56.481	0.000	56.481	60.022	50.716	48.195	66.917	Continuing	Continuing
• OMN/11D2D-3: <i>Fleet Ballistic Missile (Nuclear Weapons Security)</i>	73.426	76.097	77.002	0.000	77.002	79.760	85.191	88.739	90.280	Continuing	Continuing
• MCN/Various-4: <i>MILCON (CNI) (Transit/Escort)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OMN/11D2D-5: <i>Fleet Ballistic Missile (Transit/Escort)</i>	129.480	134.876	130.290	0.000	130.290	128.717	114.351	117.485	119.174	Continuing	Continuing
	11.972	2.011	2.037	0.000	2.037	2.078	2.112	2.149	2.187	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/Various-7: <i>OPN (Transit/ Escort)</i>											
• WPN/44217-6: <i>Gun Mount Mods</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Procurements are being executed through a combination of private contractors (large and small business), government Centers of Excellence (COEs), other government agencies and the Naval Submarine Bases, Kitsap and Kings Bay. Contract awards are based upon "best value" determinations, and where practical will be performance based or include incentive provisions.

E. Performance Metrics

Not applicable

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Nuclear Weapons Security Sys Dev	WR	NFESC:CA	0.890	0.465	Oct 2010	0.410	Oct 2011	-		0.410	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	CNWS:CA	0.404	-	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JHU APL:MD	0.944	0.875	Oct 2010	1.043	Oct 2011	-		1.043	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	SNSW:CA	1.842	0.653	Oct 2010	1.532	Oct 2011	-		1.532	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NSWC:VA	0.677	1.340	Oct 2010	0.500	Oct 2011	-		0.500	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JRC:VA	0.251	0.250	Oct 2010	0.250	Oct 2011	-		0.250	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NUWC:RI	0.075	0.375	Oct 2010	0.345	Oct 2011	-		0.345	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NEDU:FL	0.383	-	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	LMMS:CA	0.306	0.200	Oct 2010	0.200	Oct 2011	-		0.200	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOEI:ID	-	0.180	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOE:NM	-	0.300	Oct 2010	0.125	Oct 2011	-		0.125	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	ARL:TX	-	-	Oct 2010	0.200	Oct 2011	-		0.200	Continuing	Continuing	Continuing
Subtotal			5.772	4.638		4.605		-		4.605			
Project Cost Totals			5.772	4.638		4.605		-		4.605			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3158																												
NWS Contract Go-ahead and Milestones																												
NWS Technology Development Strategies																												
NWS Capabilities Assessment																												
NWS Technology Maturation																												
NWS System Development & Demonstration Phase																												
NWS Production & Deployment Phase																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 3158: <i>Integrated Nuclear Weapons Security Sys Dev</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3158				
NWS Contract Go-ahead and Milestones	1	2010	4	2016
NWS Technology Development Strategies	1	2010	4	2016
NWS Capabilities Assessment	1	2010	4	2016
NWS Technology Maturation	1	2010	4	2016
NWS System Development & Demonstration Phase	1	2010	4	2016
NWS Production & Deployment Phase	1	2010	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101221N: <i>Strategic Sub & Wpns Sys Supt</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	3.744	-	-	-	-	-	-	-	-	0.000	3.744
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional adds

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Advanced Linear Accelerator (LINAC) Facility	0.956	-
FY 2010 Accomplishments: (U) Completed all construction, testing and characterization activities necessary for a fully functional and operational dose rate test facility.		
Congressional Add: Adelos National Security Sensor System	2.788	-
FY 2010 Accomplishments: Extended the technology of Adelos to incorporate its application in a saltwater littoral environment and define appropriate signatures and signature correlation algorithms development for the Nuclear Weapons Security Program.		
Determined response times to detect, classify and localize and capacity. This efforts includes conducting technology tests and demonstrations in the use environment and a report of results.		
Congressional Adds Subtotals	3.744	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Contracts were awarded to a combination of private contractors (large and small business) and other government agencies as required to complete the objectives of each congressional add.

E. Performance Metrics

Not applicable

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0101224N: <i>SSBN Security Tech Program</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	33.131	34.997	33.553	-	33.553	34.834	35.600	36.346	36.978	Continuing	Continuing
0092: <i>SSBN Security</i>	33.131	34.997	33.553	-	33.553	34.834	35.600	36.346	36.978	Continuing	Continuing

A. Mission Description and Budget Item Justification

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	34.336	34.997	35.626	-	35.626
Current President's Budget	33.131	34.997	33.553	-	33.553
Total Adjustments	-1.205	-	-2.073	-	-2.073
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.136	-			
• Program Adjustments	-	-	-1.888	-	-1.888
• Section 219 Reprogramming	-0.068	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.185	-	-0.185
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101224N: <i>SSBN Security Tech Program</i>	PROJECT 0092: <i>SSBN Security</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0092: <i>SSBN Security</i>	33.131	34.997	33.553	-	33.553	34.834	35.600	36.346	36.978	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: SSBN Security	33.131	34.997	33.553
Articles:	0	0	0
Description: N/A			
FY 2010 Accomplishments: N/A			
FY 2011 Plans: N/A			
FY 2012 Plans: N/A			
Accomplishments/Planned Programs Subtotals	33.131	34.997	33.553

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101226N: <i>Submarine Acoustic War Dev</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	6.704	6.815	6.360	-	6.360	6.438	6.564	6.699	6.843	Continuing	Continuing
1265: <i>Sub Defensive Warfare</i>	6.704	6.815	6.360	-	6.360	6.438	6.564	6.699	6.843	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all U.S. Submarine classes.

This project funds the Next Generation Countermeasure (NGCM) efforts entailing simulating and determining the effectiveness of new technologies and capabilities developed under the Future Naval Capabilities (FNC), Small Business and Innovative Research (SBIR), and other RDT&E initiatives. New and emerging hardware and software are rigorously evaluated in a representative acoustic environment, through both digital and hardware-in-the-loop simulations, to determine their readiness for inserting this technology into the NGCM.

This Mod X project develops Engineering Change Proposal (ECP) for ADC MK 2 to improve the effectiveness of the 3"-diameter anti-torpedo countermeasure adding enhanced capabilities that have been developed under ONR's Future Naval Capability (FNC) program. The key new capabilities to be inserted to the current countermeasure are adaptive countermeasure (ACM) with a full duplex and mobility.

Funding provides In-Service Engineering Agent and Technical Design Agent hardware/software support for in-service CSA MK 2 and CSA MK 3 systems, including obsolete unit-level Technical Refresh. Additionally, CSA MK 3 system-level modernization (TACLAN integration/Technical Insertion) has been initiated.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	7.181	6.815	6.993	-	6.993
Current President's Budget	6.704	6.815	6.360	-	6.360
Total Adjustments	-0.477	-	-0.633	-	-0.633
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.247	-			
• Program Adjustments	-	-	-0.519	-	-0.519
• Section 219 Reprogramming	-0.230	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.114	-	-0.114

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101226N: *Submarine Acoustic War Dev*

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101226N: <i>Submarine Acoustic War Dev</i>	PROJECT 1265: <i>Sub Defensive Warfare</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1265: <i>Sub Defensive Warfare</i>	6.704	6.815	6.360	-	6.360	6.438	6.564	6.699	6.843	Continuing	Continuing
Quantity of RDT&E Articles	0	0	5	0	5	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all U.S. Submarine classes. This project funds the Next Generation Countermeasure (NGCM) efforts entailing simulating and determining the effectiveness of new technologies and capabilities developed under the Future Naval Capabilities (FNC), Small Business and Innovative Research (SBIR), and other RDT&E initiatives. New and emerging hardware and software are rigorously evaluated in a representative acoustic environment, through both digital and hardware-in-the-loop simulations, to determine their readiness for inserting this technology into the NGCM. This Mod X project develops Engineering Change Proposal (ECP) for ADC MK 2 to improve the effectiveness of the 3"-diameter anti-torpedo countermeasure adding enhanced capabilities that have been developed under ONR's Future Naval Capability (FNC) program. The key new capabilities to be inserted to the current countermeasure are adaptive countermeasure (ACM) with a full duplex and mobility. Funding provides In-Service Engineering Agent and Technical Design Agent hardware/software support for in-service CSA MK 2 and CSA MK 3 systems, including obsolete unit-level Technical Refresh. Additionally, CSA MK 3 system-level modernization (TACLAN integration/Technical Insertion) has been initiated.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Sub Defensive Warfare	6.704	6.815	6.360
Articles:	0	0	5
FY 2010 Accomplishments:			
FY2010 Accomplishments:			
- Continue to conduct countermeasure proofing and effectiveness analysis for designated torpedo using modeling and simulation with hardware-in-the-loop at Weapons Analysis Facility (WAF).			
- Conducted two Industry Days to provide high level technical information and the acquisition plan to potential NGCM bidders. NGCM proposals have been submitted to the Government two months after the Request for Proposal (RFP) was released to the industry.			
- Continue efforts in baselining the Test and Evaluation Master Plan (TEMP).			
- Awarded NGCM contracts 4Q-2010.			
FY 2011 Plans:			
FY2011 Plans:			
- Complete baselining the Test and Evaluation Master Plan (TEMP).			
- Conduct system requirements review, Preliminary Design Review (PDR) and Critical Design Review (CDR).			
- Refine NGCM-to-CSA interface requirements.			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101226N: <i>Submarine Acoustic War Dev</i>	PROJECT 1265: <i>Sub Defensive Warfare</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- The NGCM contractors start their internal Contractor Testing (CT) to refine designs.			
<i>FY 2012 Plans:</i> FY2012 Plans: - Complete Contractor Testing - Begin Developmental Testing (DT) with Special Test Unit (STU) which allows the acoustic performance of the NGCM. - FY12 units are for 5 Standard Test Units.			
Accomplishments/Planned Programs Subtotals	6.704	6.815	6.360

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/221000/221005: <i>Submarine Acoustic Warfare</i>	14,256.000	20,739.000	20,554.000	0.000	20,554.000	20,950.000	21,173.000	21,515.000	21,925.000	Continuing	Continuing

D. Acquisition Strategy

This project develops a Submarine Defensive Warfare System (SDWS) to improve the effectiveness and survivability of all U.S. Submarine classes. The integration of technology insertion into the Next Generation Countermeasure (NGCM) and the NGCM-capable CSA MK 3 system will continue through FY12. The development and procurement will be through a full and open competition for a cost-plus-fixed-fee contract which delivers NGCM Engineering Development Models (EDMs) to the Navy. The NGCM development contracts awarded in 4Q-2010. NGCM contractors' testing will be in FY11-FY12 and the Development Testing involving the Navy will be in FY12-FY13.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101226N: <i>Submarine Acoustic War Dev</i>	PROJECT 1265: <i>Sub Defensive Warfare</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
WAF ANALYSIS SYSTEM ENGINEERING	WR	NUWC:NEWPORT, RI	9.000	1.000	Dec 2010	1.436	Dec 2011	-		1.436	Continuing	Continuing	Continuing
NGCM SYSYTEM ENGINEERING	WR	NUWC:NEWPORT, RI	12.414	0.650	Dec 2010	0.500	Dec 2011	-		0.500	Continuing	Continuing	Continuing
NGCM DEVELOPMENT 1	C/CPAF	Argon ST:Fairfax, VA	3.053	2.245	Feb 2011	1.990	Feb 2012	-		1.990	Continuing	Continuing	Continuing
NGCM DEVELOPMENT 2	C/CPAF	Ultra:Braintree, MA	3.053	2.245	Feb 2011	1.991	Feb 2012	-		1.991	0.000	7.289	
NGCM SYSTEM ENGINEERING	WR	NUWC:KEPORT, WA	0.670	0.350	Dec 2010	0.118	Dec 2011	-		0.118	Continuing	Continuing	Continuing
Subtotal			28.190	6.490		6.035		-		6.035			

Remarks
NGCM Development contracts awarded 12/22/2010 to Argon ST and Ultra.

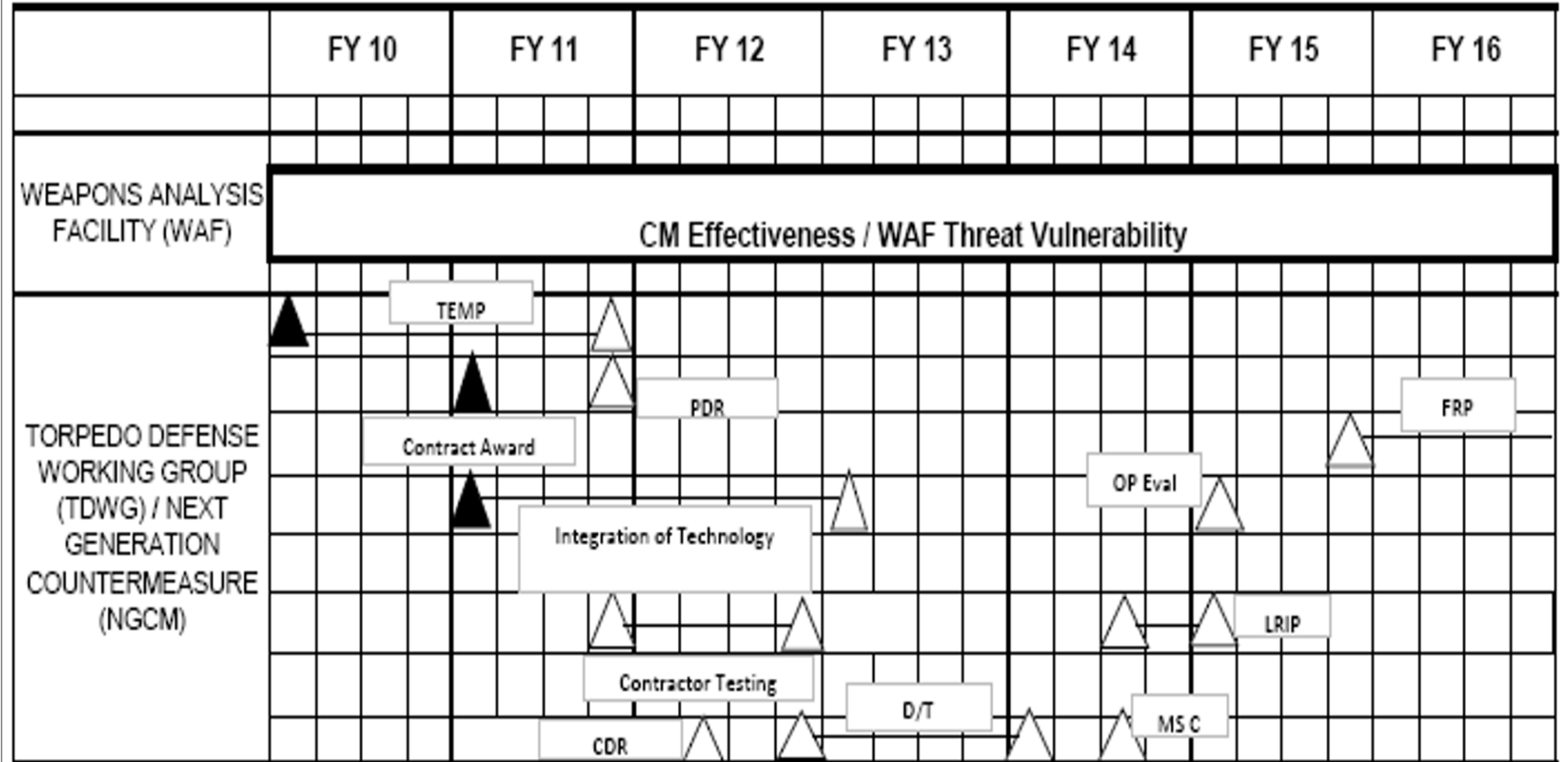
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ACQUISITION WORKFORCE	Various	Not Specified:Not Specified	0.036	-		-		-		-	0.000	0.036	0.036
TRAVEL	WR	NAVSEA:Washington, DC	0.350	0.075	Nov 2010	0.075	Nov 2011	-		0.075	Continuing	Continuing	Continuing
PROGRAM MANAGEMENT SUPPORT	C/CPAF	TECH MARINE:BURKE, VA	0.550	0.250	Feb 2011	0.250	Feb 2012	-		0.250	Continuing	Continuing	Continuing
Subtotal			0.936	0.325		0.325		-		0.325			

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			29.126	6.815		6.360		-		6.360			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101226N: <i>Submarine Acoustic War Dev</i>	PROJECT 1265: <i>Sub Defensive Warfare</i>



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101226N: <i>Submarine Acoustic War Dev</i>	PROJECT 1265: <i>Sub Defensive Warfare</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1265				
BASELINE TEST & EVALUATION MASTER PLAN (TEMP)	1	2010	4	2011
CONTRACT AWARD	1	2011	1	2011
INTEGRATION OF TECHNOLOGY INSERTIONS	1	2011	1	2013
PRELIMINARY DESIGN REVIEW (PDR)	4	2011	4	2011
CONTRACTOR TESTING	4	2011	4	2012
CRITICAL DESIGN REVIEW (CDR)	2	2012	2	2012
DEVELOPMENTAL TESTING (D/T)	4	2012	1	2014
MILESTONE C	3	2014	3	2014
LRIP	3	2014	1	2015
OPERATIONAL EVALUATION	1	2015	1	2015
FULL RATE PRODUCTION (FRP)	4	2015	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	44.828	10.331	23.208	-	23.208	20.431	23.851	14.188	9.912	Continuing	Continuing
1083: <i>Shore To Ship Com System</i>	-	-	14.430	-	14.430	19.407	23.851	14.188	9.912	Continuing	Continuing
3002: <i>Navy Strategic Comm Project</i>	42.438	10.331	8.778	-	8.778	1.024	-	-	-	0.000	62.571
9999: <i>Congressional Adds</i>	2.390	-	-	-	-	-	-	-	-	0.000	2.390

A. Mission Description and Budget Item Justification

The Shore to Ship Communications System develops communication system elements which provide positive command and control of deployed submarines. The Shore to Ship Communications System provides continuous assessment of the command and control links between the National Command Authority and missile platforms and is conducted to ensure compliance with Nuclear Technical Performance Criteria (NTPC). The Shore to Ship Communications System addresses joint system design issues for Emergency Action Message (EAM) distribution to all nuclear platforms and provides evaluation of joint interoperability of EAM delivery systems. Tools are developed to provide strategic command and control planning within the submarine shore infrastructure to support deployed ballistic missile submarines.

FY12 funds will be used for development activities necessary to award a competitive contract for system design and development of Nuclear Command, Control and Communications Long Term Solution (NC3 LTS) and an increase in development in Low Band Universal Communications System to reach Milestone C.

The E-6B Block I modification program corrects Airborne National Command Post program Follow-On Operational Test and Evaluation operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems by 2010. Block I designs, develops, integrates, and tests a Multi-Level Security system, Open Systems Architecture; replaces the intercommunications and Mission Computer Set; modifies the cooling, electrical, and Ultra-High Frequency Command, Control and Communications system; and addresses Internet Protocol Bandwidth Expansion impacts to pre-Block I baseline aircraft. Block I adds operator workstations throughout the aircraft to reduce workload and improve system interoperability, and provides a foundation for evolutionary upgrades. Other modifications (Block IA Engineering Change Proposal (ECP)) include: an additional Auxiliary Power Unit to enhance power and cooling capabilities supporting the additional systems in the Multi-Level Security system, Open Systems Architecture, a Very Low Frequency Transmitter obsolescence replacement, and a High Power Transmit Set subsystem refurbishment.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	46.170	10.331	10.328	-	10.328
Current President's Budget	44.828	10.331	23.208	-	23.208
Total Adjustments	-1.342	-	12.880	-	12.880
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.251	-			
• Program Adjustments	-	-	13.037	-	13.037
• Section 219 Reprogramming	-0.081	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.157	-	-0.157
• Congressional General Reductions Adjustments	-0.010	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *E-6B Strategic Communications UpgradeVLFTX*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	2.390	-
	2.390	-
	2.390	-

Change Summary Explanation

Schedule:

(1083) NC3 LTS: The Request for Proposal (RFP) release was delayed from 4QFY10 to 2QFY11. As a result of the RFP delay, contract award, system design and development, Preliminary Design Review (PDR), Milestone C, system test events and system fielding were delayed accordingly.

(3002) Due to testing deficiencies and delays, the Systems Integration Lab (SIL) and Aircraft Developmental Testing for Block I was extended to 4Q FY10. This caused a delay in the Block I operational testing and operational evaluation (OPEVAL). The Low Rate Initial Production was extended to 4Q FY12. The Block I Full Rate Production decision and contract award was delayed until 1Q FY12 - until the completion of the Block I operational testing and OPEVAL.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0101402N: *Navy Strategic Comms*

Technical: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1083: <i>Shore To Ship Com System</i>	-	-	14.430	-	14.430	19.407	23.851	14.188	9.912	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Funding for this project transferred from PE 0204163N beginning in FY12.

A. Mission Description and Budget Item Justification

This program develops communication system elements which provide positive Nuclear Command, Control and Communications (NC3) from originator to execution platforms. This portfolio of programs provides design and development for shore-to-ship transmit and receive communications systems.

The Low Band Universal Communications System (LBUCS) is a modernization program that will upgrade the Transmit and Receive subsystems of the Fixed Submarine Broadcast System (FSBS) which are approaching their operational end of life. LBUCS will ensure operational capability through the Very Low Frequency (VLF) architecture by providing system life extension and flexibility of submarine broadcast traffic to the submarine in stealth posture. The flexibility includes enhanced throughput and anti-jam capability, ensuring more operational products are delivered to a submarine without risking mast exposure. The flexibility further includes simplified shore architecture to maintain capability while maximizing use of shore nodes (Broadcast Keying Sites). LBUCS also provides an upgrade to the VLF receive system, with all interoperable waveforms, to ensure continued compliance with Nuclear Technical Performance Criteria.

The Nuclear Command, Control and Communications (NC3) Long-Term Solution (LTS) will replace the shore-based, nuclear command and control (NC2) message dissemination infrastructure of the NC3 Hybrid Solution while addressing capability gaps identified in the NC3 LTS Capability Based Analysis. The mission of the NC3 LTS is to provide a reliable, secure, timely and robust messaging capability between Senior Leadership (The President of the United States, Secretary of Defense, and Chairman of the Joint Chiefs of Staff), Combatant Commanders and United States nuclear force elements. Specifically, the NC3 LTS shall support the dissemination of Emergency Action Messages and other NC2 messages.

The Strategic Communications Assessment Program /Continued Evaluation Program provides constant assessment of the effectiveness of the end-to-end Nuclear Command and Control network and analysis of system performance in various mission locations.

Concept Development/System Planning provides Network Enabled Operation (NEO) that addresses Allied interoperability issues for submarine communications in an Internet Protocol (IP) environment. As new technologies are realized, coalition architectures are developed and tested to ensure continued interoperability. Concept Development/System Planning also provides for the modeling of unique Very Low Frequency/Low Frequency (VLF/LF) submarine communications capabilities which include large physical shore broadcast antennas, underwater depth penetration studies and interoperable VLF waveform analysis. Technologies to improve high voltage insulators, helix house bushings and antenna components used in the Fixed VLF transmit systems are evaluated and tested through the High Voltage Improvement Program. Development of Information Assurance solutions for the Broadcast Control Authority (BCA) and Submarine Operating Authority Wide Area Network are being investigated to mitigate vulnerability concerns.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>			
Notes/Comments: 1) FY12 LBUCS: Continue development of Production Representative Article (PRA) for transmit terminal 2) FY12 NC3 LTS: Award contract for system design and development, conduct Preliminary Design Review and begin development of the Capabilities Production Document					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
Title: Low Band Universal Communication System (LBUCS)			-	-	7.525 0
Articles:					
FY 2012 Plans: Take delivery of transmit Production Representative Articles. Complete transmit acquisition documentation, Capabilities Production Document and Information Support Plan for Milestone C. Commence transmit system Developmental Test / Operational Assessment.					
Title: Nuclear Command, Control, Communications Long Term Solution (NC3 LTS)			-	-	1.994 0
Articles:					
FY 2012 Plans: Award contract for system design and development. Commence development of NC3 LTS system. Commence development of the Capabilities Production Document in support of Milestone C. Commence development of acquisition documentation necessary to achieve Milestone C. Complete Production Design Review (PDR). United States Air Force funding commences and satisfies remainder of funding requirements.					
Title: Strategic Communications Assessment Program (SCAP)/Continuing Evaluation Program (CEP)			-	-	2.953 0
Articles:					
FY 2012 Plans: Conduct mission analysis of Ship Submersible Ballistic Nuclear Submarine (SSBN) Emergency Action Message (EAM) reception for a sample of SSBN patrols. Provide reports on performance, adherence to delivery time requirements and shortfalls. Complete and implement automated data collection and analysis tools to reduce latency time between missions and results availability.					
Title: Concept Development/Systems Planning			-	-	0.819 0
Articles:					
FY 2012 Plans: Conduct US/UK developmental testing between US Submarine Operating Authority and UK submarines to further validate Network Enabled Operation interoperability concepts and conduct Very Low Frequency interoperability studies.					
Title: High Voltage Improvement Program			-	-	0.834

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Articles:			0
FY 2012 Plans: Complete Electrically Small Antenna project. Continue dynamic tuning effort with large scale model test at Edgar Beauchamp High Voltage Test Facility. Continue work on partial discharge for use in early detection of helix house and antenna failures with the goal of being able to stop a failure before significant damage occurs. Complete outdoor helix effort with large scale model test at Edgar Beauchamp High Voltage Test Facility.			
Title: Broadcast Control Authority	-	-	0.305
Articles:			0
FY 2012 Plans: Develop candidate Submarine Operating Authority options for Information Assurance integration.			
Accomplishments/Planned Programs Subtotals	-	-	14.430

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• OPN/3107: <i>Submarine Broadcast</i>	0.000	0.000	9.692	0.000	9.692	0.791	0.000	0.000	0.000	0.000	10.483

D. Acquisition Strategy

Low Band Universal Communications System (LBUCS): LBUCS is the modernization program that will upgrade the Transmit and Receive subsystems of the Fixed Submarine Broadcast System which are approaching their operational end of life. A cost plus incentive fee contract was awarded for Transmit subsystem development in 4Q FY09 with three sequential fixed price options Contract Line Item Numbers for production and deployment. The development of LBUCS Receive will commence in FY13.

The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS): NC3 LTS will provide accurate and reliable delivery of time-critical messages for the nuclear forces by developing a Dedicated IP Network utilizing Defense Information Systems Network circuits. Milestone B for the program is projected in 4QFY11 with Milestone C occurring in 4QFY14. Contract planning activities commenced in 4QFY09, leading to a Request for Proposal release in 2QFY11 and corresponding contract award in 2QFY12. Full Operational Capability is expected in 4QFY17.

E. Performance Metrics

LBUCS: FY12: Take delivery of Transmit Production Representative Article. Complete transmit acquisition documentation and Capabilities Production Document for Milestone C. Commence transmit system Developmental Testing/Operational Assessment.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
<p>NC3 LTS: FY12 : Award contract for system design and development. Complete Preliminary Design Review.</p> <p>Strategic Communications Assessment Program/Continuing Evaluation Program: FY12: Delivery of patrol reports and development plan for automated data collection and analysis toolset.</p> <p>Concept Development: FY12: Delivery of Network Enabled Operations testing scenarios and shore architecture design to support shore to submarine testing scenarios.</p> <p>High Voltage Improvement Program: FY12: Complete ferrite study to reduce loss and size of helix enclosure. Commence examination of new ferrites to allow greater broadcast signal.</p> <p>Broadcast Control Authority: FY12: Delivery of design options to incorporate Information Assurance (IA) capability.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	SSC PAC:San Diego, CA	18.861	-		-		-		-	Continuing	Continuing	Continuing
Ancillary Hardware Development	WR	SSC PAC:San Diego, CA	2.316	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC PAC:San Diego, CA	50.733	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC Newport:Newport, RI	13.471	-		-		-		-	Continuing	Continuing	Continuing
SCAP/CEP: Systems Engineering	C/CPFF	APL/JHU:Baltimore, MD	43.049	-		-		-		-	Continuing	Continuing	Continuing
LBUCS: Systems Engineering	WR	SSC LANT:Charleston, SC	-	-		0.681	Oct 2011	-		0.681	Continuing	Continuing	Continuing
LBUCS: Primary Hardware Development	C/CPFF	SAIC:San Diego, CA	6.183	-		3.534	Nov 2011	-		3.534	Continuing	Continuing	Continuing
NC3LTS: Systems Engineering	MIPR	U.S. Army:Monmouth, NJ	7.622	-		0.525	Oct 2011	-		0.525	Continuing	Continuing	Continuing
NC3LTS: Ancillary Hardware	WR	SSC PAC:San Diego, CA	-	-		0.175	Oct 2011	-		0.175	Continuing	Continuing	Continuing
Shore to Ship: Ancillary Hardware	WR	SSC PAC:San Diego, CA	-	-		0.307	Nov 2011	-		0.307	Continuing	Continuing	Continuing
Shore to Ship: Systems Engineering	WR	SSC PAC:San Diego, CA	-	-		0.357	Nov 2011	-		0.357	Continuing	Continuing	Continuing
Subtotal			142.235	-		5.579		-		5.579			

Remarks
Total Prior Years Cost amounts shown are from PE 0204163N and are provided for context.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Development Support	WR	SSC PAC:San Diego, CA	4.853	-		-		-		-	Continuing	Continuing	Continuing
Software Development	WR	SSC PAC:San Diego, CA	11.912	-		-		-		-	Continuing	Continuing	Continuing
Acquisition/Program Development	C/CPFF	CSA:San Diego, CA	1.506	-		-		-		-	Continuing	Continuing	Continuing
Technical Data	SS/CPFF	ANSOL:San Diego, CA	2.822	-		-		-		-	Continuing	Continuing	Continuing
Development Support 2	WR	SSC PAC:San Diego, CA	2.701	-		-		-		-	Continuing	Continuing	Continuing
LBUCS: Logistics Support	C/CPFF	TCI:Alfreda, GA	1.390	-		0.510	Oct 2011	-		0.510	Continuing	Continuing	Continuing
LBUCS: Information Assurance	C/CPFF	MERDAN:San Diego, CA	-	-		0.170	Oct 2011	-		0.170	Continuing	Continuing	Continuing
LBUCS: Information Assurance	WR	SSC PAC:San Diego, CA	-	-		0.204	Oct 2011	-		0.204	Continuing	Continuing	Continuing
LBUCS: Technical Data	C/CPFF	ANSOL:San Diego, CA	-	-		0.227	Oct 2011	-		0.227	Continuing	Continuing	Continuing
LBUCS: Acquisition/Program Development	C/CPFF	CSA:San Diego, CA	-	-		0.793	Oct 2011	-		0.793	Continuing	Continuing	Continuing
NC3LTS: Information Assurance	C/CPFF	MERDAN:San Diego, CA	-	-		0.050	Oct 2011	-		0.050	Continuing	Continuing	Continuing
NC3LTS: Technical Data	C/CPFF	ANSOL:San Diego, CA	-	-		0.350	Oct 2011	-		0.350	Continuing	Continuing	Continuing
NC3LTS: Acquisition/Program Development	C/CPFF	CSA:San Diego, CA	-	-		0.212	Oct 2011	-		0.212	Continuing	Continuing	Continuing
NC3LTS: Logistics Support	C/CPFF	TCI:Alfreda, GA	-	-		0.160	Oct 2011	-		0.160	Continuing	Continuing	Continuing
Shore to Ship: Software Development	WR	SSC PAC:San Diego, CA	-	-		0.207	Oct 2011	-		0.207	Continuing	Continuing	Continuing
Shore to Ship: Studies and Design	WR	SSC PAC:San Diego, CA	-	-		0.357	Oct 2011	-		0.357	Continuing	Continuing	Continuing
Shore to Ship: Acquisition/Program Development	WR	SSC PAC:San Diego, CA	-	-		0.222	Oct 2011	-		0.222	Continuing	Continuing	Continuing
Shore to Ship: Broadcast Control Authority	C/CPFF	Predicate Logic:San Diego, CA	-	-		0.508	Oct 2011	-		0.508	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Subtotal			25.184	-		3.970		-		3.970			

Remarks
Total Prior Years Cost amounts shown are from PE 0204163N and are provided for context.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
SCAP/CEP: Strategic OP Systems Performance Evaluation	C/CPFF	APL/JHU:Baltimore, MD	22.509	-		2.953	Dec 2011	-		2.953	Continuing	Continuing	Continuing
LBUCS: System Testing	WR	COTF:Norfolk, VA	8.855	-		0.090	Oct 2011	-		0.090	Continuing	Continuing	Continuing
LBUCS: System Testing	WR	SSC PAC:San Diego, CA	-	-		0.423	Oct 2011	-		0.423	Continuing	Continuing	Continuing
NC3LTS: System Testing	WR	COTF:Norfolk, VA	-	-		0.142	Oct 2011	-		0.142	Continuing	Continuing	Continuing
Subtotal			31.364	-		3.608		-		3.608			

Remarks
Total Prior Years Cost amounts shown are from PE 0204163N and are provided for context.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Contractor Engineering Support	MIPR	U.S. Army:Monmouth, NJ	1.777	-		-		-		-	Continuing	Continuing	Continuing
LBUCS: Program Management	WR	SSC PAC:San Diego, CA	5.399	-		0.866	Oct 2011	-		0.866	Continuing	Continuing	Continuing
LBUCS: Travel	WR	SSC PAC:San Diego, CA	0.250	-		0.028	Oct 2011	-		0.028	Continuing	Continuing	Continuing
	WR		2.277	-		0.367	Oct 2011	-		0.367	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NC3LTS: Government Engineering Support		SSC PAC:San Diego, CA											
NC3: Travel	WR	SSC PAC:San Diego, CA	-	-		0.012	Oct 2011	-		0.012	Continuing	Continuing	Continuing
Subtotal			9.703	-		1.273		-		1.273			

Remarks
Total Prior Years Cost amounts shown are from PE 0204163N and are provided for context.

Project Cost Totals	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
	208.486	-		14.430		-		14.430			

Remarks
FY 2011 amounts shown are from PE 0204163N and are provided for context.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1083				
LBUCS: Milestone-C (MS-C)	3	2012	3	2012
LBUCS: Full Rate Production Milestone (FRP) - Transmit	3	2013	3	2013
LBUCS: Initial Operational Capability (IOC) - Transmit	3	2013	3	2013
LBUCS: Production Representative Article Program Review (PRA PR) - Receive	1	2013	1	2013
LBUCS: Fielding Program Review (FPR) - Receive	2	2015	2	2015
LBUCS: Capability Production Document (CPD)	3	2010	1	2012
LBUCS: Production Design Review (PDR) - Transmit	3	2010	3	2010
LBUCS: Critical Design Review (CDR) - Transmit	1	2011	1	2011
LBUCS: Technology Readiness Review (TRR) - Transmit	1	2012	1	2012
LBUCS: Production Representative Article (PRA) - Transmit	1	2010	2	2012
LBUCS: Production Representative Article (PRA) - Receive	1	2013	4	2014
LBUCS: Production Design Review (PDR) - Receive	3	2013	3	2013
LBUCS: Critical Design Review (CDR) - Receive	1	2014	1	2014
LBUCS: Developmental Test/Operational Assessment (DT/OA) - Transmit	2	2012	2	2012
LBUCS: Developmental Test/Technical Evaluation (DT/TE) - Transmit	1	2013	1	2013
LBUCS: Operational Test (OT) - Transmit	2	2013	2	2013
LBUCS: Developmental Test (DT) - Receive	1	2015	1	2015
LBUCS: Low Rate Initial Production (LRIP) - Transmit	1	2013	1	2013
LBUCS: Full Rate Production (FRP) - Transmit	4	2013	4	2015
LBUCS: Full Rate Production (FRP) - Receive	3	2015	4	2016
NC3 LTS: Milestone-B (MS-B)	4	2011	4	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 1083: <i>Shore To Ship Com System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NC3 LTS: Production Design Review (PDR)	4	2012	4	2012
NC3 LTS: Critical Design Review (CDR)	2	2013	2	2013
NC3 LTS: Milestone-C (MS-C)	4	2014	4	2014
NC3 LTS: Full Rate Production Design Review (FRP DR)	3	2016	3	2016
NC3 LTS: Capabilities Design Document (CDD)	1	2010	1	2011
NC3 LTS: Capability Production Document (CPD)	3	2012	4	2013
NC3 LTS: Procurement Planning and Strategy Meeting (PPSM)	3	2010	3	2010
NC3 LTS: Request For Proposal (RFP)	2	2011	2	2011
NC3 LTS: Contract Award (CA)	2	2012	2	2012
NC3 LTS: Production Representative Article (PRA)	2	2012	2	2014
NC3 LTS: Test & Evaluation Master Plan (TEMP)	1	2010	3	2011
NC3 LTS: Developmental Test Pre Milestone-C (DT)	2	2014	3	2014
NC3 LTS: Integrated Testing/Operational Testing (IT/OT)	3	2014	4	2014
NC3 LTS: Developmental Test Post Milestone-C (DT)	3	2015	4	2015
NC3 LTS: Integrated Test (IT)	4	2015	1	2016
NC3 LTS: Operational Test (OT)	1	2016	2	2016
NC3 LTS: Low Rate Initial Production (LRIP)	1	2015	2	2015
NC3 LTS: Full Rate Production (FRP)	3	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 3002: <i>Navy Strategic Comm Project</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3002: <i>Navy Strategic Comm Project</i>	42.438	10.331	8.778	-	8.778	1.024	-	-	-	0.000	62.571
Quantity of RDT&E Articles	2	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The E-6B Block I modification program corrects Airborne National Command Post program Follow-On Operational Test and Evaluation operational suitability deficiencies and addresses legacy system obsolescence issues. Without the Block I program, legacy system obsolescence will result in several unsupportable mission systems by 2011. Block I designs, develops, integrates, and tests a Multi-Level Security (MLS) system, Open Systems Architecture (OSA); replaces the intercommunications and Mission Computer Set; modifies the cooling, electrical, and Ultra-High Frequency Command, Control and Communications system; and addresses Internet Protocol Bandwidth Expansion impacts to pre-Block I baseline aircraft. Block I adds operator workstations throughout the aircraft to reduce workload and improve system interoperability, and provides a foundation for evolutionary upgrades. Other modifications (Block IA Engineering Change Proposal (ECP)) include: an additional Auxiliary Power Unit to enhance power and cooling capabilities supporting the additional systems in the MLS system, OSA, a Very Low Frequency Transmitter obsolescence replacement, and a High Power Transmit Set subsystem refurbishment.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Conduct Developmental Test (DT) Governmental Training</p> <p style="text-align: right;">Articles:</p> <p>FY 2010 Accomplishments: Funding supports Block I and Block IA ECP Government acquisition planning, acquisition strategy adjustment, requirements analysis, industry conferences, Department of Defense (DoD) 5000 series document development and revision, program management, technical reviews, oversight, Systems Integration Lab (SIL) and aircraft modification and test, and contract management; design, test readiness, and Contract Data Requirements List (CDRL) reviews; functional and physical configuration audits; technical interchange and program management meetings; development and operational test planning, execution, and reporting in support of Government review and design approval of modifications.</p> <p>FY 2011 Plans: Continue Block IA ECP DT Governmental Training efforts.</p> <p>FY 2012 Plans: Continue Block IA ECP DT Governmental Training efforts.</p>	7.025 0	3.255 0	0.280 0
<p>Title: Conduct DT Support Training</p> <p style="text-align: right;">Articles:</p> <p>FY 2010 Accomplishments:</p>	3.254 0	0.065 0	- -

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 3002: <i>Navy Strategic Comm Project</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Funding will be used to buy Block I and Block IA ECP contract support services to perform engineering, management, trade studies, and analysis to develop acquisition documents; plan logistics and training; develop and monitor schedules and revisions to DoD 5000 series documents; attend industry conferences; perform engineering and architectural studies and analyses; modify and test the SIL and aircraft; conduct functional and physical configuration audits; and review CDRL for Block I and IA modifications.				
FY 2011 Plans: Continue and complete Block IA ECP DT Support Training efforts.				
Title: Prototype Aircraft Installation		29.906	7.011	8.000
Articles:		2	0	0
FY 2010 Accomplishments: Funding supports Block I and Block IA ECP tasks allotted to the prime contractor including: program initiation, engineering research, design development, integration and test of Block I and IA ECP systems; preparation and presentation of the Block I and IA ECP designs and test readiness reviews; SIL and aircraft modification, functional and physical configuration audits; contractor developmental test planning, leading to Low Rate Initial Production (LRIP) approval and award.				
FY 2011 Plans: Continue Block IA ECP Prototype Aircraft Installation efforts.				
FY 2012 Plans: Continue Block IA ECP Prototype Aircraft Installation efforts.				
Title: Developmental/Operational Testing		2.253	-	0.498
Articles:		0		0
FY 2010 Accomplishments: Complete contractor developmental testing for Block I on the aircraft and in the SIL. Begin operational testing to obtain a successful Operational Evaluation (OPEVAL) report.				
FY 2012 Plans: Begin and complete Block IA ECP operational testing to obtain a successful OPEVAL report.				
Accomplishments/Planned Programs Subtotals		42.438	10.331	8.778

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 3002: <i>Navy Strategic Comm Project</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN 056400: <i>E-6 A/B Series</i>	102.309	149.164	165.253	0.000	165.253	158.906	182.369	217.654	202.601	384.103	1,819.048

D. Acquisition Strategy

Competitively awarded Cost Plus Award Fee development contract. The current contract was modified on 13 April 2007 to a Cost Plus Incentive Fee contract. A new sole source Firm Fixed Price (FFP) contract was awarded for LRIP in 4th quarter of FY2010 with Full Rate Production being a new sole source follow-on FFP contract.

E. Performance Metrics

Block I Milestone C decision achieved in 3rd quarter FY2010.
FRP Contract Award 2nd quarter FY2012
Block I IOC 3rd quarter FY2013

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 3002: <i>Navy Strategic Comm Project</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development Block I *	C/CPIF	Rockwell Collins:Cedar Rapids, IA	142.319	-		-		-		-	0.000	142.319	142.319
Award Fees	C/CPAF	Rockwell Collins:Cedar Rapids, IA	3.751	-		-		-		-	0.000	3.751	3.751
Primary Hardware Development Block IA ECP**	C/CPIF	Rockwell Collins:Cedar Rapids, IA	28.369	7.011	Jan 2011	8.000	Dec 2011	-		8.000	0.824	44.204	44.254
Ancillary Hardware Development	C/CPFF	Rockwell Collins:Cedar Rapids, IA	4.933	-		-		-		-	0.000	4.933	4.933
Training Development WST	C/CPIF	Rockwell Collins:Cedar Rapids, IA	1.213	-		-		-		-	0.000	1.213	1.213
Subtotal			180.585	7.011		8.000		-		8.000	0.824	196.420	196.470

Remarks

* The Rockwell Collins Primary Hardware Development Block I contract was converted from a Competitively Awarded/Cost plus Award Fee to a Cost Plus Incentive Fee beginning in FY07.

** The Rockwell Collins Primary Hardware Development Block IA Engineering Change Proposal (ECP) contract was definitized in July 2010.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analyses	Various	Various:Not Specified	4.412	0.065	Feb 2011	-		-		-	0.000	4.477	
Subtotal			4.412	0.065		-		-		-	0.000	4.477	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD:Patuxent River, MD	0.668	-		-		-		-	0.000	0.668	
Operational Test & Evaluation	WR	NAWCAD:Patuxent River, MD	2.148	-		-		-		-	0.000	2.148	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 3002: <i>Navy Strategic Comm Project</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Navy Strategic Communications</i>				
Acquisition Milestones: Milestones: Milestone C (MS C) (Blk I)	3	2010	3	2010
Acquisition Milestones: Milestones: Initial Operational Capability (IOC)	3	2013	3	2013
Acquisition Milestones: Production: LRIP Phase (APN)	3	2010	4	2012
Acquisition Milestones: Production: Full Rate Production (FRP) (Blk I)	1	2012	4	2016
Test and Evaluation: Technical Evaluation: SIL Contractor/Developmental Testing (CT/DT) (Blk I)	1	2010	4	2010
Test and Evaluation: Technical Evaluation: A/C Contractor/Developmental Testing (CT/DT) (Blk I)	1	2010	4	2010
Test and Evaluation: Operational Evaluation: Operational Testing (OPEVAL) (Blk I)	4	2010	2	2011
Production Milestones: Contract Awards: Contract Award Low Rate Initial Production APN (LRIP) (Blk I)	4	2010	4	2010
Production Milestones: Contract Awards: Full Rate Production (FRP) Contract Award (Blk I)	2	2012	2	2012
Production Milestones: Decisions: Full Rate Production (FRP) Decision/Start (Blk I)	1	2012	1	2012
Deliveries: LRIP Deliveries: LRIP Block I Deliveries	4	2011	4	2012
Deliveries: FRP Deliveries: FRP Block I Deliveries	1	2013	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101402N: <i>Navy Strategic Comms</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	2.390	-	-	-	-	-	-	-	-	0.000	2.390
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Add.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: E-6B Strategic Communications UpgradeVLFTX	2.390	-
FY 2010 Accomplishments: Funding will support Block IA Engineering Change Proposal (ECP) tasks allotted to the prime contractor for Block IA development.		
Congressional Adds Subtotals	2.390	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not required for Congressional Adds.

E. Performance Metrics

Not required for Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	55.535	35.120	30.021	-	30.021	37.159	36.517	37.523	39.792	Continuing	Continuing
3126: <i>Rapid Technology Transition (RTT)</i>	39.479	18.848	18.740	-	18.740	22.076	22.096	22.618	23.033	Continuing	Continuing
3173: <i>Technology Insertion Program for Savings (TIPS)</i>	-	8.259	8.038	-	8.038	9.403	9.427	9.628	9.805	Continuing	Continuing
3174: <i>Rapid Development and Deployment (RDD)</i>	16.056	8.013	3.243	-	3.243	5.680	4.994	5.277	6.954	Continuing	Continuing

A. Mission Description and Budget Item Justification

RTT programs transition technology from any source, including those not traditionally associated with defense technology. An effective and robust integration of commercial and military technologies can reduce costs and improve naval capabilities by keeping pace with the fast moving changes in technologies and operational needs. The RTT program is comprised of three elements: The Rapid Technology Transition (RTT) program, the Technology Insertion Program for Savings (TIPS), and the Rapid Development and Deployment (RDD) program. The RTT and TIPS programs are structured to bring transition deals to closure quickly, and to provide execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion. The RDD program is structured to quickly develop a prototype solution that will be deployed in theater for Naval forces engaged in Overseas Contingency Operations (OCO).

The mission of the RTT program is to increase the rate that new, innovative, and potentially disruptive technologies are inserted into DON acquisition programs and the hands of the warfighter.

The mission of the TIPS program is to increase the rate that new cutting edge technologies are inserted into DON acquisition programs in order to significantly reduce operations and maintenance support costs.

The RDD program provides for the rapid development and fielding of prototype solutions to meet urgent operational needs. The RDD process applies when existing DON processes cannot meet urgent operational needs. Overseas Contingency Operations (OCO) have generated rapidly evolving military needs that require responsive materiel solutions.

Rapid transition opportunities occur when a sufficiently mature technology is identified that can meet a particular need on a timetable which matches that of an acquisition program, and is supported by a business case which justifies the associated cost and schedule risk. The combination of circumstances which create such opportunities can appear, and disappear, well inside the Program Objectives Memorandum (POM) cycle. These programs are designed to be proactive in identifying opportunities and to work with resource sponsors, fleet and force users, and Program Managers (PMs) in constructing viable technology transition deals one at a time.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>
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To ensure the widest possible awareness of emergent commercial technology opportunities, these programs interact with the industry and the venture capital community. These programs coordinate closely with Program Executive Offices (PEOs) and Program Managers (PMs) to maintain awareness of insertion opportunities. Utilizing existing authorities, RTT applies execution year funds where necessary to "jump-start" transitions so they can be inserted and validated by Sea Trial experiments leading directly to deployment and/or demonstrations of high risk/high payoff technologies. This Program Element is the only Navy program that addresses current, urgent requirements that are required by the fleet within a 18-24 month period. As such, planning and execution are accomplished within the same fiscal year, which causes a non-traditional financial execution profile for the program. The program therefore does not meet traditional execution benchmarks.

In FY 2011, funding for the TIPS activity within the RTT R&D project (3126) was realigned into its own R&D project number - 3173 - Technology Insertion Program for Savings.

B. Program Change Summary (\$ in Millions)	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	38.963	35.120	41.863	-	41.863
Current President's Budget	55.535	35.120	30.021	-	30.021
Total Adjustments	16.572	-	-11.842	-	-11.842
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	8.914	-			
• SBIR/STTR Transfer	-1.175	-			
• Program Adjustments	8.960	-	-11.145	-	-11.145
• Section 219 Reprogramming	-0.126	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.697	-	-0.697
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>				PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3126: <i>Rapid Technology Transition (RTT)</i>	39.479	18.848	18.740	-	18.740	22.076	22.096	22.618	23.033	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The mission of the RTT project is to increase the rate that new, innovative, and potentially disruptive technologies are inserted into DON acquisition programs and the hands of the warfighter. A key aspect of the RTT project is its charter to transition technology from any source, including those not traditionally associated with defense technology. An effective and robust integration of commercial and military technologies can reduce costs and improve naval capabilities by keeping pace with the fast moving changes in technologies and operational needs. The RTT project is structured to bring transition deals to closure quickly, and to provide execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

In FY 2011, funding for the TIPS activity within the RTT R&D project (3126) was realigned into its own R&D project number - 3173 - Technology Insertion Program for Savings.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: RAPID TECHNOLOGY TRANSITION (RTT)	39.479	18.848	18.740
Articles:	0	0	0
Description: In FY 2011, funding for the TIPS activity within the RTT R&D project (3126) was realigned into its own R&D project number - 3173 - Technology Insertion Program for Savings.			
The decrease of funding from FY10 to FY11 reflects the functional transfer from project 3126 to project 3173.			
FY 2010 Accomplishments: Completed the following RTT projects: - Sparsely Populated Volumetric Array Acoustic Intercept Sensor Enhancing Submarine Passive Broadband Detection and Localization (SPVA PBB) - Littoral Combat Ship Mission Package Networked Tactical Training System (LCS NTTS) - Multistatic Active Capability Enhancements (MACE) - Non-Organic Over the Horizon Intelligence Surveillance and Reconnaissance (ISR). - Advanced Capability Integrated Trailer-ECU-Generator (ITEG)			
Terminated the following RTT projects:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<ul style="list-style-type: none"> - IBM Cell Processor - Deployable Alternative Energy Module (DAEM) - Joint Mission Planning System-Expeditionary SPF (JMPS-E) <p>Continued the following RTT projects:</p> <ul style="list-style-type: none"> - Dismounted Infantry Simulation Interface (DISI) - Riverine Patrol Boat Protection - Expand 4/5 Synthetic Aperture Radar (SAR) Mapping - Physical Screening Protection - Multiple Wavelength LEP - Afloat Non-classified Network - Multi-Level Security Grid - Expedient MSR - Seal Delivery Vehicle (SDV) Diver Thermal Power System - Small Footprint Architecture - Extensible Link - eXtensible Common Operational Picture (XCOP) - P-3 Air Crew Tactical Team Trainer (PACT-3) - Theater ASW C3 Capability - F/A-18 Jet Noise Reduction - SeaLancet RT-1944/U Multi-Band Network Radio (MBNR) - T64 Prognosis/Diagnosis Based Management (PDBM) - Common Radio Room (CRR) <p>Initiated the following RTT projects:</p> <ul style="list-style-type: none"> - Sonar Automation - Integrated Laser Designator/Rangefinder for the M1A1 Tank - Continuous Active Sonar - Integration of WiMAX (802.16) Analysis and Planning Capability into the Systems Planning, Engineering and Evaluation Device (SPEED) POR - Littoral Surveillance Radar System Data Insertion into DCGS-N - Compact Low Frequency Active Off-Board Acoustic Source Expendable (COBASE) - Framework for Context Driven Speech Recognition and Processing (FCDSRP) - Spinel Submarine Periscope Headwindow 				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>- IRIS SHARK</p> <p>- Paragon - Information Operations Frequency Enhancement</p> <p>- Integrated Variable Message Format (VMF) in the E-2 Hawkeye.</p> <p>Continued the following TIPS projects:</p> <p>- Advanced Prognostics for Steam Catapults</p> <p>- Disruptive Micro Electro-Mechanical (MEM) Sensors for Aircraft Drive Lines.</p> <p>Completed the following TIPS projects:</p> <p>- Sprayable Dielectric Shields</p> <p>- Virtual Maintenance Performance Aid-Readiness Control Officer</p> <p>- Normal Fuel Oil Tanks</p> <p>- Hybrid High-bay Lighting (HHBL)</p> <p>- Retail Operations Management Enterprise Support (ROM-ES).</p> <p>Initiated the following TIPS projects:</p> <p>- Two Sided Camouflage Netting System</p> <p>- Lithium Battery Casualty Mitigation System (LBMCS)</p> <p>- Condition Based Maintenance - Enterprise Service Bus (CBM-ESB)</p> <p>- Intrinsically Safe Remote Tank Coatings Assessment Tool</p> <p>- Improved Detection Leveraging IWS-5 APB Software</p> <p>- Lightweight Affordable Low Maintenance Watertight Doors.</p> <p>FY 2011 Plans:</p> <p>Continue or Complete the following projects:</p> <p>- Physical Screening Protection</p> <p>- SeaLancet RT-1944/U Multi-Band Network Radio (MBNR)</p> <p>- Multiple Wavelength LEP</p> <p>- Afloat Non-classified Network</p> <p>- Multi-Level Security Grid</p> <p>- Expedient MSR</p> <p>- Seal Delivery Vehicle (SDV) Diver Thermal Power System</p> <p>- Small Footprint Architecture - Extensible Link</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<ul style="list-style-type: none"> - eXtensible Common Operational Picture (XCOP) - Common Radio Room - P-3 Air Crew Tactical Team Trainer (PACT-3) - Theater ASW C3 Capability - F/A-18 Jet Noise Reduction - T64 Prognosis/Diagnosis Based Management (PDBM) - Integrated Laser Designator/Rangefinder for the M1A1 Tank - Continuous Active Sonar - Integration of WiMAX (802.16) Analysis and Planning Capability into the Systems Planning, Engineering and Evaluation Device (SPEED) POR - LSRS Data Insertion into DCGS-N - Compact Low Frequency Active Off-Board Acoustic Source Expendable (COBASE) - Sonar Automation - Framework for Context Driven Speech Recognition and Processing (FCDSRP) - Spinel Submarine Periscope Headwindow - IRIS SHARK - Paragon - Information Operations Frequency Enhancement - Integrated Variable Message Format (VMF) in the E-2 Hawkeye. <p>Initiate the following RTT projects:</p> <ul style="list-style-type: none"> - Universal Communications Controller - Light Weight Demolition Device - Multiple Weapon Simultaneous Reprogramming of JSOW-C and JSOW-C-1 - VVoSIP and Call Management for Afloat Networks - Unit-Level ISR&T for DCGS-N - Tactical Transfer Cross-Domain Solution Device - Calibration and Certification of MAC Sensors for Intelligence Data Collection - High Gain Broadband (Graywing) Shipboard IO Antenna - Image Based Navigation for Tomahawk Block IV Cruise Missiles (ImageNav) - Expeditionary Power Management and Distribution (EPMD) <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue or Complete efforts from FY 2011. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Initiate 6-11 new RTT projects to improve naval warfighter capabilities.			
Accomplishments/Planned Programs Subtotals	39.479	18.848	18.740

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Utilize existing authorities on a case-specific basis to exploit rapid technology transition opportunities.

E. Performance Metrics

The RTT program will, at a minimum, initiate 10-16 new deals a year that provide for new, innovative, and potentially disruptive technology being inserted into DON acquisition programs. The RTT deals will have a greater than 80% success rate of insertion and fielding of technology into DON warfighting systems.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
COBASE	C/CPFF	SAIC:Subs: Alturdyne & USSI San Diego	1.000	1.000	Oct 2010	-		-		-	0.000	2.000	
Integrated Variable Message Format (VMF) in the E-2 Hawkeye	C/CPFF	Wyle Laboratories, Inc:NAWCAD Patuxent River, MD	1.250	0.750	Oct 2010	-		-		-	0.000	2.000	
Integrated Laser Designator/ Rangefinder for the M1A1 Tank	C/FFP	Night Vision and Electronics Sensors Directorate/N:10221 Burbeck Road, Ft Belvoir, VA 22060	1.450	0.400	Oct 2010	-		-		-	0.000	1.850	
Continuous Active Sonar	C/CPFF	Alion Science:240 Oral School Road, Mystic, CT	1.500	0.500	Oct 2010	-		-		-	0.000	2.000	
Integration of WiMAX (802.16d/e) Analysis and Planning Capabilities in SPEED	Various	Various:Various	1.250	0.170	Feb 2011	-		-		-	0.000	1.420	
LSRS Data Insertion into DCGS-N	Various	BAE Systems/Integrity Applications/Space Dynamics:CA/UT	1.625	0.375	Oct 2010	-		-		-	0.000	2.000	
Sonar Automation	Various	Various:Various	1.500	0.500	Apr 2011	-		-		-	0.000	2.000	
Framework for Context Driven Speech Recognition and Processing (FCDSRP)	Allot	NAWCTSD:Not Specified	0.490	0.240	Oct 2010	-		-		-	0.000	0.730	
Spinel Submarine Periscope Headwindow	C/CPFF	Global Strategies Group:Crofton, MD	0.500	0.450	Oct 2010	-		-		-	0.000	0.950	
IRIS SHARK	Various	NTTI/NSWC/SAIC/ PMAT/NGC/SDL/ PMS-495/SDL Logan:CA/FL/DC/VA/ UT	1.470	0.490	Oct 2010	-		-		-	0.000	1.960	
Paragon - Information Operations Frequency Enhancement	Various	Argon ST:Fairfax VA	1.200	0.800	Oct 2010	-		-		-	0.000	2.000	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T64 Prognosis/Diagnosis Based Management	Various	AIR 4.4:NAVAIR	0.200	1.300	Oct 2010	-		-		-	0.000	1.500	
Universal Communications Controller	SS/CPFF	Fairfax:VA	-	1.246	Dec 2010	0.624	Oct 2011	-		0.624	0.000	1.870	
Light Weight Demolition Device	Various	Duke Pro, Inc.:Asheville, NC	-	0.500	Nov 2010	-		-		-	0.000	0.500	
Multiple Weapon Simultaneous Reprogramming of JSOW-C and JSOW-C-1	Various	Various:Various	-	0.730	May 2011	0.800	Oct 2011	-		0.800	0.000	1.530	
VVoSIP and Call Management for Afloat Networks	Various	Various:Various	-	1.000	May 2011	0.925	Oct 2011	-		0.925	0.000	1.925	
Unit-Level ISR&T for DCGS-N	C/CPFF	NMSO/BAE Systems:San Diego, CA	-	1.000	Dec 2010	0.500	Oct 2011	-		0.500	0.000	1.500	
Tactical Transfer Cross-Domain Solution Device	Various	Penn State Applied Research/NRL:PA/DC	-	1.000	Dec 2010	0.400	Oct 2011	-		0.400	0.000	1.400	
Calibration and Certification of MAC Sensors for Intelligence Data Collection	C/CPFF	ENSCO, Inc./Lockheed Martin/NAWC/ENSCO, Inc.:NY/VA/MD	-	0.862	Dec 2010	0.706	Oct 2011	-		0.706	0.000	1.568	
High Gain Broadband (Graywing) Shipboard IO Antenna	Various	SSC - Pacific Code 56380:San Diego, CA	-	0.750	Dec 2010	1.250	Oct 2011	-		1.250	0.000	2.000	
Image Based Navigation for Tomahawk Block IV Cruise Missiles (ImageNav)	Various	Various:Various	-	0.750	May 2011	1.250	Oct 2011	-		1.250	0.000	2.000	
Expeditionary Power Management and Distribution (EPMD)	Various	Various:Various	-	0.700	May 2011	0.700	Oct 2011	-		0.700	0.000	1.400	
Future Technology Insertion Opportunities	Various	Various:Various	-	-		8.532	Dec 2011	-		8.532	0.000	8.532	
Subtotal			13.435	15.513		15.687		-		15.687	0.000	44.635	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3126																												
Project 3126: FY10_Oversee Execution of Deals	████████████████																											
Project 3126: FY12 Call for Proposals					████																							
Project 3126: FY12 Proposals Recieved					████																							
Project 3126: FY12 Initial Evaluation					████																							
Project 3126: FY12 Red Team Reviews					████																							
Project 3126: FY12 ERG WG - conducts final reviews and ranking					████																							
Project 3126: FY12 ERG - makes selection for upcoming FY									████																			
Project 3126: FY12 MOAs - drafted, Staffed and approved									████																			
Project 3126: Begin Selected Projects									████																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3126: <i>Rapid Technology Transition (RTT)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3126				
Project 3126: FY10_Oversee Execution of Deals	1	2010	4	2011
Project 3126: FY12 Call for Proposals	2	2011	2	2011
Project 3126: FY12 Proposals Recieved	3	2011	3	2011
Project 3126: FY12 Initial Evaluation	3	2011	3	2011
Project 3126: FY12 Red Team Reviews	3	2011	3	2011
Project 3126: FY12 ERG WG - conducts final reviews and ranking	3	2011	3	2011
Project 3126: FY12 ERG - makes selection for upcoming FY	4	2011	4	2011
Project 3126: FY12 MOAs - drafted, Staffed and approved	4	2011	4	2011
Project 3126: Begin Selected Projects	1	2012	1	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3173: <i>Technology Insertion Program for Savings (TIPS)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3173: <i>Technology Insertion Program for Savings (TIPS)</i>	-	8.259	8.038	-	8.038	9.403	9.427	9.628	9.805	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The mission of the Technology Insertion Program for Savings (TIPS) is to increase the rate that new cutting edge technologies are inserted into DON acquisition programs in order to significantly reduce operations and maintenance support costs. The program is structured to rapidly transition applicable commercial off-the-shelf solutions and late-stage development technologies from any source to meet an immediate need. TIPS provides execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

In FY 2011, funding for the TIPS activity within the RTT R&D project (3126) was realigned into its own R&D project number - 3173 - Technology Insertion Program for Savings.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: TECHNOLOGY INSERTION PROGRAM FOR SAVINGS (TIPS)	-	8.259	8.038
Articles:		0	0
Description: In FY 2011, funding for the TIPS activity within the RTT R&D project (3126) was realigned into its own R&D project number - 3173 - Technology Insertion Program for Savings.			
FY 2011 Plans:			
-Continue or complete the following TIPS projects:			
- Two Sided Camouflage Netting System;			
- Lithium Battery Casualty Mitigation System (LBMCS)			
- Condition Based Maintenance - Enterprise Service Bus (CBM-ESB)			
- Intrinsically Safe Remote Tank Coatings Assessment Tool			
- Improved Detection Leveraging IWS-5 APB Software; Advanced Prognostics for Steam Catapults Water Brake Monitoring			
- Disruptive MEM Sensors for Monitoring Aircraft Drive Lines			
- Lightweight Affordable Low Maintenance Watertight Doors.			
Initiate the following TIPS projects:			
- Tactical Environment & Role-player Station (TERS)			
- Naval Advanced Amorphous Coating (NAAC) for High Wear Decks			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3173: <i>Technology Insertion Program for Savings (TIPS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<ul style="list-style-type: none"> - H-1 Combining Gearbox Chaffing Repair via Low Pressure Cold Spray - ZnBr Flow Battery Energy Storage System - Transportation Exploitation Tool (TET) <p><i>FY 2012 Plans:</i></p> <ul style="list-style-type: none"> - Continue or Complete efforts from FY 2011. - Initiate 4-6 new TIPS projects to improve naval warfighter capabilities. 			
Accomplishments/Planned Programs Subtotals	-	8.259	8.038

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Utilize existing authorities on a case-specific basis to exploit rapid technology transition opportunities.

E. Performance Metrics

The TIPS programs will select 4-7 new projects for execution per fiscal year.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3173: <i>Technology Insertion Program for Savings (TIPS)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Two-Sided Multi-Spectral Camo Netting System	Various	Various:MI/NC/MD/NM/VA	1.500	-	Oct 2010	-		-		-	0.000	1.500	
Condition Based Maintenance Service Bus	Various	Delphinus/General Dynamics:Eddystone/Philadelphia, PA	1.200	0.800	Oct 2010	-		-		-	0.000	2.000	
Intrinsically Safe Remote Tank Coating Assessment Tool	Various	EXCET/INUKTUN, IVC,NRL, Nainamo:BC/NJ/NRL	1.300	0.600	Oct 2010	-		-		-	0.000	1.900	
Improved Detections Leveraging IWS-5 APB Software	Various	Lockheed Martin/JHU/APL/SSC Pacific:CA/MD/VA	1.500	0.500	Oct 2010	-		-		-	0.000	2.000	
Light Weight Affordable Low Maintenance Watertight Door	C/CPFF	NSWC/ARL PSU:PA/PSU	1.400	0.592	Oct 2010	-		-		-	0.000	1.992	
Lithium Battery Casualty Mitigation System (LBMCS)	C/CPFF	Hughes Associates/Havlovick Engineering Services:Baltimore, MD/Falls, ID	1.475	0.500	Oct 2010	-		-		-	0.000	1.975	
Advanced Prognostic Steam Catapults	Various	NAVAVIR:Lakehurst, NJ	0.800	0.600	Oct 2010	-		-		-	0.000	1.400	
Tactical Environment & Role-player Station (TERS)	C/BPA	NAWCTSD:Orlando, FL	-	0.700	Dec 2010	0.900	Oct 2011	-		0.900	0.000	1.600	
Naval Advanced Amorphous Coating (NAAC) for High Wear Decks	Various	EXCET/NRL:NRL	-	0.500	Dec 2010	0.150	Oct 2011	-		0.150	0.000	0.650	
H-1 Combining Gearbox Chaffing Repair via Low Pressure Cold Spray	Various	Various:Various	-	0.800	Dec 2010	1.000	Oct 2011	-		1.000	0.000	1.800	
ZnBr Flow Battery Energy Storage System	Various	NAVFAC ESC:Port Hueneme	-	1.492	Dec 2010	0.480	Oct 2011	-		0.480	0.000	1.972	
Transportation Exploitation Tool (TET)	C/CPFF	Alion Science and Technology:VA	-	0.700	Dec 2010	1.300	Oct 2011	-		1.300	0.000	2.000	
Future Technology Insertion Opportunities	Various	Various:Various	-	-		3.858	Dec 2011	-		3.858	0.000	3.858	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3173: <i>Technology Insertion Program for Savings (TIPS)</i>
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FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
Proj 3173																												
Project 3173: FY10_Oversee Execution of Deals																												
Project 3173: FY12 Call for Proposals																												
Project 3173: FY12 Proposals Recieved																												
Project 3173: FY12 Initial Evaluation																												
Project 3173: FY12 Red Team Reviews																												
Project 3173: FY12 ERG WG conducts final reviews and ranking																												
Project 3173: FY12 ERG makes selection for upcoming FY																												
Project 3173: FY12 MOAs drafted, Staffed and approved																												
Project 3173: Begin Selected Projects																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3173: <i>Technology Insertion Program for Savings (TIPS)</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3173				
Project 3173: FY10_Oversee Execution of Deals	1	2010	4	2011
Project 3173: FY12 Call for Proposals	2	2011	2	2011
Project 3173: FY12 Proposals Recieved	3	2011	3	2011
Project 3173: FY12 Initial Evaluation	3	2011	3	2011
Project 3173: FY12 Red Team Reviews	3	2011	3	2011
Project 3173: FY12 ERG WG conducts final reviews and ranking	3	2011	3	2011
Project 3173: FY12 ERG makes selection for upcoming FY	4	2011	4	2011
Project 3173: FY12 MOAs drafted, Staffed and approved	4	2011	4	2011
Project 3173: Begin Selected Projects	1	2012	1	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3174: <i>Rapid Development and Deployment (RDD)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3174: <i>Rapid Development and Deployment (RDD)</i>	16.056	8.013	3.243	-	3.243	5.680	4.994	5.277	6.954	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Rapid Development and Deployment (RDD) provides an environment and process for rapid development and fielding of prototype solutions to meet urgent operational needs. The RDD process applies when existing DON processes cannot meet urgent operational needs. Overseas Contingency Operations (OCO) have generated rapidly evolving military needs that require responsive materiel solutions. RDD is a fast track process for application, by exception, to Navy and USMC capability needs and materiel solutions that meet the following criteria: (1) Need identified during active or incipient combat or contingency operation, or (2) Need derived from combat survivability of the warfighter or impacts the success of the mission. RDD initiates projects to deliver prototype solutions that are not readily available off-the-shelf and that can be developed, integrated with other components and systems (as necessary), tested, and fielded within 270 days of need approval. RDD provides startup funds to initiate projects that meet the above criteria while other funding is made available within the year of execution. Rapid Development and Deployment (RDD) provides an environment and process for rapid development and fielding of prototype solutions to meet urgent operational needs.

FY 2010 to FY 2011 funding reduction is due to the completion of the OCO working completing and reduction of funding due to higher Navy priorities. FY 2011 to FY 2012 funding reduction is due to realignment of funds for higher priorities.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: RAPID DEVELOPMENT AND DEPLOYMENT (RDD)	16.056	8.013	3.243
Articles:	0	0	0
FY 2010 Accomplishments:			
- Delivered Loud Hailer Capability to Fleet.			
- Delivered Small Unmanned Frequency Receiver (SURFR) capability to Special Warfare Community.			
- Initiated USMC Fire Suppression project			
- Initiated new RDD projects as needed to support OCO urgent needs.			
FY 2011 Plans:			
- Continue all FY 2010 efforts less those noted as planned for completion.			
- Initiate approximately 3-4 new RDD projects in support of OCO.			
FY 2012 Plans:			
- Continue all FY 2011 efforts less those noted as planned for completion.			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3174: <i>Rapid Development and Deployment (RDD)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Initiate approximately 3-4 new RDD projects in support of OCO.			
Accomplishments/Planned Programs Subtotals	16.056	8.013	3.243

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

For RDD requirements that meet the selection criteria, the virtual Rapid Development and Deployment Office (RDDO) is used to initiate projects. The RDDO is a virtual organization operating across Naval Laboratories and Warfare Centers, with interfaces and/or contractual agreements with other Military Services, Industry, Academia and the National Laboratory community. The RDDO will bring together, on demand, multi-disciplinary teams to develop and deliver rapid, innovative solutions. The RDDO will maintain visibility of available and emerging technologies from all sources that may serve as enablers to the success of RDD initiatives. The RDDO will review Urgent Combat Needs, identify and evaluate alternative solutions and provide recommendations. The RDDO will include a rapid acquisition channel, consistent with all applicable procurement regulations, for access to industry products and services as needed. For approved projects, the RDDO will select appropriate technologies, and develop, integrate, test, and deliver fieldable prototypes with the essential logistics for use by the warfighter. End users will be involved throughout the process as part of the virtual team.

E. Performance Metrics

The RDD program goal is to respond to urgent operational needs within 30 days and provide for rapid development and fielding of prototype solutions within 270 - 360 days.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3174: <i>Rapid Development and Deployment (RDD)</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3174																												
Project 3174: TBD - Execute new FY 10 RDD Efforts	■																											
Project 3174: Deliver Ship Disable			■																									
Project 3174: TBD - Execute new FY 11 RDD Efforts							■																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203761N: <i>Rapid Technology Transition (RTT)</i>	PROJECT 3174: <i>Rapid Development and Deployment (RDD)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3174				
Project 3174: TBD - Execute new FY 10 RDD Efforts	1	2010	1	2010
Project 3174: Deliver Ship Disable	3	2010	3	2010
Project 3174: TBD - Execute new FY 11 RDD Efforts	1	2011	1	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	114.132	148.438	151.030	2.000	153.030	121.201	56.502	34.286	34.833	Continuing	Continuing
1662: <i>F/A-18 Improvement</i>	97.357	133.033	93.047	2.000	95.047	57.006	54.671	34.286	34.833	Continuing	Continuing
2065: <i>F/A-18 Radar Upgrade</i>	13.907	15.405	57.983	-	57.983	64.195	1.831	-	-	0.000	153.321
9999: <i>Congressional Adds</i>	2.868	-	-	-	-	-	-	-	-	0.000	2.868

A. Mission Description and Budget Item Justification

The F/A-18 is required to perform multiple missions. Capabilities of the F/A-18 weapon system and ancillary equipment can be upgraded to accommodate and incorporate new or enhanced weapons as well as advances in technology to respond effectively to emerging future threats. Continued F/A-18 E/F and EA-18G "Flight Plan" spiral capability development is critical to the baseline of the Super Hornet next generation mission system capability and maintaining tactical relevance in support of NAVPLAN 2030. Additionally, continued advanced development engineering for improvements in reliability and maintainability are required to ensure maximum benefit is achieved through reduced cost of ownership and to provide enhanced availability.

Congressional Add:

10C181 Fighter Jet Noise Reduction Under Carrier Deck Operational Environment. Fighter Jet Noise, especially on aircraft carrier flight decks, has led to permanent hearing loss of aircraft handling personnel. Development and testing of alternate configurations of Variable Exhaust Nozzle (VEN) seals incorporating corrugations is planned.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	121.093	148.438	115.392	-	115.392
Current President's Budget	114.132	148.438	151.030	2.000	153.030
Total Adjustments	-6.961	-	35.638	2.000	37.638
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-3.910	-			
• SBIR/STTR Transfer	-1.853	-			
• Program Adjustments	-	-	37.597	2.000	39.597
• Section 219 Reprogramming	-1.190	-	-	-	-
• Rate/Misc Adjustments	-	-	-1.959	-	-1.959
• Congressional General Reductions Adjustments	-0.008	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Fighter Jet Noise Reduction Under Carrier Deck Operational Environment*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	2.868	-
	2.868	-
	2.868	-

Change Summary Explanation

Technical:

1662: Not Applicable

2065: Not Applicable

Schedule:

1662: Automatic Ground Collision Avoidance System will be a new start development effort in FY 2012. The schedule changes to the Infrared Search and Track program are due to funding reductions in FY 2010. The updated schedule plans for Milestone B in 2nd Quarter 2011, Milestone C in 3rd Quarter 2014, and achievement of Fleet Initial Operational Capability in 4th Quarter 2016. The Distributed Targeting System is an ACAT III program that entered the acquisition

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0204136N: <i>F/A-18 Squadrons</i>

cycle at post MS B and is currently on schedule for Fleet Initial Operational Capability in 4th Quarter 2012. Schedule adjustments reflect this change to the program. Schedule updates to Multi-Sensor Integration Phase II program reflect incorporation of this capability into SCS H10E Software Build.

2065: Schedule adjustments to this program are a result of technical difficulties related to the Anti-Tamper configuration of APG-79 Radar System.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1662: <i>F/A-18 Improvement</i>	97.357	133.033	93.047	2.000	95.047	57.006	54.671	34.286	34.833	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

F/A-18 Improvements (1662): The F/A-18 is a multi-mission strike fighter aircraft that is used in Air-to-Air strike, surveillance, reconnaissance and tanking roles through selected use of external equipment (fuel tanks, tactical and reconnaissance pods, and various ordnance launching racks). Additional capabilities are required for interoperability in a network-centric tactical environment. In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics including Dual Mode Weapons, an Infra-red Search and Track (IRST), Integrated Defensive Electronic Counter Measures (IDECM) integrated with the Active Electronically Scanned Array (AESA) to provide Narrow Band High Gain Electronic Attack (NBHGEA), Distributed Targeting precision strike capability through a Distributed Targeting System (DTS), and Sensor Integration through Multi-Sensor Integration (MSI) Phase I capability. Continued advanced development engineering and analysis of hardware/software is required to successfully optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment, to include: enhanced software capabilities, potential new hardware development, enhanced existing hardware, and enhanced network centric capabilities. Additionally, continued effort is needed to perform technical evaluations, modeling and simulations, investigative flight testing, and enhanced software modifications based on reported fleet deficiencies. Funding has been added starting in FY 2012 for the Auto Ground Collision Avoidance System (AGCAS) which will integrate currently implemented manual methodologies to provide not only aural and visual cues/advisories but also automatic initiation of aircraft recovery and subsequent return of control to the pilot following recovery. Currently employed Controlled Flight into Terrain (CFIT) Avoidance System technologies within the Department of Defense Fighter/Attack (F/A) aircraft communities are advisory only (aural and visual cues/warnings to aircrew), thus requiring manually implemented corrective measures by the aircrew to preclude incident (greater lag time to initiation of recovery and not feasible in the event of pilot G-induced loss of consciousness). This funding line continues F/A-18E/F "Flight Plan" spiral capability development, which includes Sensor Integration - Multi-Ship Emitter Geo-Location capability and Sensor Integration - MSI Phase II capability. This budget also continues funding for F/A-18A-F Test Wing Maintenance support and funding development efforts needed for integration of air launched laser guided rockets on F/A-18 A+/C/D.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Sensor Integration - IDECM with AESA</p> <p align="right">Articles:</p> <p>Description: In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics including IDECM integrated with the AESA to provide High Gain Electronic Support Measures (HGESM). Advanced development engineering and analysis of hardware/software is required to optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment.</p>	6.398 0	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>		PROJECT 1662: <i>F/A-18 Improvement</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<i>FY 2010 Accomplishments:</i> Continue software development for IDECM integration with AESA to provide HGESM capability and to prove the concept of NBHGEA.					
<i>Title:</i> Distributed Targeting System	35.650	39.620	5.698	-	5.698
<i>Articles:</i>	0	0	0		0
<i>Description:</i> Funds are supporting development of a distributed targeting precision strike capability through a hardware and software solution. Hardware (H/W) - Distributed Targeting Processor (DTP), Mass Storage Unit (MSU), and Mission Planning Transit Case. Software (S/W) - DTP/MSU Operational Flight Program (OFP), Mission Computer OFP, and Mission Planning OFP.					
<i>FY 2010 Accomplishments:</i> Completed the Integrated Baseline Review, Technical Readiness Review, and the Critical Design Review - Assessment. Thirteen Engineering and Manufacturing Development (EMD) units have been developed and are currently in Qualification and Reliability testing at vendor facilities. Software Test and Integration at a Boeing facility has been initiated.					
<i>FY 2011 Plans:</i> Enter Developmental Testing Flight testing, conduct Milestone (MS) C review, award Engineering Change Proposal (ECP) for Low-Rate Initial Production I.					
<i>FY 2012 Base Plans:</i> Continue Integrated Test and Evaluation and begin Initial Operational Test and Evaluation. Complete Operational Test, conduct Physical Configuration Audit and Full Rate Production review.					
<i>Title:</i> Electro-Optical Infra-red - IRST Phase I	12.780	39.602	49.283	-	49.283
<i>Articles:</i>	0	0	0		0
<i>Description:</i> Technology development and engineering and manufacturing development of an IRST sensor for the F/A-18 E/F.					
<i>FY 2010 Accomplishments:</i> Conducted System Requirements Review II in 1st Quarter and closed all actions prior to conducting System Functional Review. Preliminary Design Review is scheduled for 4th Quarter.					
<i>FY 2011 Plans:</i>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Scheduled to achieve MS B in 2nd Quarter and enter Engineering and Development Phase.						
FY 2012 Base Plans: Continue Engineering and Development Phase and complete Critical Design Review and Design Readiness Review.						
Title: Sensor Integration - SSG/SEI, HGEA/HGESM/IDECM	Articles:	14.900 0	14.782 0	11.320 0	-	11.320 0
Description: In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics. This funding line includes F/A-18E/F "Flight Plan" spiral capability development, Single Ship Geolocation (SSG) and Specific Emitter Identification (SEI).						
FY 2010 Accomplishments: Continue software algorithm development to enhance target identification and location (SSG and SEI).						
FY 2011 Plans: Continue software algorithm development to enhance target identification and location (SSG and SEI).						
FY 2012 Base Plans: Continue software algorithm development to enhance target identification and location (SSG and SEI).						
Title: Sensor Integration - MSI Phase I	Articles:	-	4.622 0	-	-	-
Description: In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics including, Multi-Sensor Integration (MSI) Phase I capability. Advanced development engineering and analysis of hardware/software is required to optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment.						
FY 2011 Plans: Continue software algorithm development to correlate multiple ground and surface tracks from on-ship to off-ship sensor sources and to begin integration with the Common Tactical Picture and Blue Force Track information.						
Title: Sensor Integration - A/A, A/G and Maritime MSI Phase II	Articles:	9.020 0	15.566 0	11.927 0	-	11.927 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: Funding supports maintenance of aircraft at NAVAIR Test Wing used to support Program Office objectives.</p> <p>FY 2010 Accomplishments: Perform aircraft maintenance on Test Wing Aircraft.</p> <p>FY 2011 Plans: Perform aircraft maintenance on Test Wing Aircraft.</p> <p>FY 2012 Base Plans: Perform aircraft maintenance on Test Wing Aircraft.</p>					
<p>Title: Automatic Ground Collision Avoidance System</p> <p align="right">Articles:</p>	-	-	5.707 0	-	5.707 0
<p>Description: AGCAS will preserve force structure by reducing attrition of pilots and aircraft that result from CFIT. CFIT occurs at greater rates on fighter attack aircraft and is a leading cause of loss of life and loss of combat capability within the DoD aviation community. At full implementation, AGCAS is forecasted to result in a total DoD savings of approximately 78 pilots and \$6.7B in aircraft assets. AGCAS will integrate currently implemented manual methodologies to provide not only aural and visual cues/advisories, but also automatic initiation of aircraft recovery and subsequent return of control to the pilot following recovery.</p> <p>FY 2012 Base Plans: Conduct study and analysis and develop functional requirements.</p>					
<p>Title: Advanced Precision Kill Weapons System II</p> <p align="right">Articles:</p>	-	-	- 0	2.000 0	2.000 0
<p>Description: Development efforts needed for integration of air launched laser guided rockets on F/A-18 A+/C/D at stations 2, 3, 7, and 8.</p> <p>FY 2012 Base Plans: N/A</p> <p>FY 2012 OCO Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Perform and complete developmental testing needed to integrate air launched laser guided rockets on F/A-18 A +/C/D.					
Accomplishments/Planned Programs Subtotals	97.357	133.033	93.047	2.000	95.047

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	FY 2012 Cost To Complete	FY 2012 Total Cost
• APN/0145: <i>F/A-18E/F</i>	1,499.876	1,784.894	2,366.752	0.000	2,366.752	2,284.560	1,012.842	0.000	0.000	0.000	42,500.014
• APN/0145C: <i>F/A-18EF AP</i>	51.271	2.295	64.962	0.000	64.962	25.300	0.000	0.000	0.000	0.000	1,647.253
• APN/0143: <i>EA-18G</i>	1,606.833	1,028.801	1,079.364	0.000	1,079.364	1,007.386	6.442	8.199	0.000	0.000	8,765.816
• APN/0143C: <i>EA-18G AP</i>	20.496	55.081	28.119	0.000	28.119	0.000	0.000	0.000	0.000	0.000	275.089
• APN/05250: <i>F-18 SERIES MOD</i>	536.631	536.071	499.597	46.992	546.589	685.413	1,044.070	921.625	967.151	1,845.245	11,005.701
• RDTEN/3063: <i>EA-18G DEVELOPMENT</i>	53.939	22.042	17.100	0.000	17.100	13.136	15.619	16.374	16.507	10.454	1,869.397

D. Acquisition Strategy

The F/A-18 Improvements program consists of extensive spiral development efforts mapped out in the capability-based approach F/A-18 E/F "Flight Plan." These efforts are critical to the baseline of the Super Hornet next generation mission system capability and maintaining tactical relevance in support of NAVPLAN 2030. The major programs within the F/A-18 Improvements project are based on six Weapon System Capabilities: Distributed Targeting Air to Ground (A/G) and Maritime, Distributed Targeting Air to Air (A/A), Net Centric Operations/Battle Space Management, Sensor Integration, A/G and Maritime Attack, and A/A Attack. The major efforts included in this project are: Dual Mode Weapons integration; an IRST; IDECM integrated with the AESA to provide Narrow Band High Gain Electronic Attack; Distributed Targeting capability through a DTS; Sensor Integration through Multi-Ship Emitter Geo-Location capability and MSI Phase I and Phase II capability; continued advanced development and F/A-18E/F Flight Plan engineering and analysis; continued enhanced software capabilities development; and engineering support to perform technical evaluations, modeling and simulations, and investigative flight testing.

- IRST. The IRST Phase I program is a Navy program entering the Systems Design and Development phase at Milestone B in FY 2011. A Phase I system will be developed by the Navy that will meet requirements for a counter electronic attack capability. This capability will reach Initial Operational Capability (IOC) in FY 2016.
- DTS. Distributed Targeting development is provided on a sole source cost plus incentive fee contract for EMD activities. The program is a new start ACAT III FY 2009 effort, with a post MS B entry and an IOC in FY 2012. The program is leveraging previous ECP efforts and is designated for all domestic Super Hornets.
- Sensor Integration. Sensor Integration development is provided on a sole source cost plus fixed fee contract on an Research and Development Basic Ordering Agreement to Raytheon.
- Integration of AGCAS is envisioned to require only changes to Software Configuration Set. Studies and analyses are needed to identify the appropriate implementation method.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>

E. Performance Metrics

The DTS Program will achieve IOC in FY2012. IRST Program is scheduled to achieve MS B in 2nd Quarter of FY2011, MS C in 3rd Quarter of FY2014, and IOC in 4th Quarter of FY2016.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Development EW Sensor	Various	Various:Various	-	1.813	Jan 2011	1.500	Jan 2012	-		1.500	2.405	5.718	
Primary Development EW Sensor	Various	Boeing:St. Louis, MO	5.730	0.600	Apr 2011	0.750	Apr 2012	-		0.750	0.175	7.255	
Primary Development EW Sensor	WR	NAWCWD:China Lake, CA	0.230	1.755	Jan 2011	1.500	Dec 2011	-		1.500	0.313	3.798	
Primary Hardware Dev IRST1	C/CPFF	Boeing:St. Louis, MO	21.506	11.250	Nov 2010	-		-		-	0.000	32.756	32.756
Primary Hardware Dev DTS	C/FFP	Boeing:St. Louis, MO	27.144	9.002	May 2011	-		-		-	1.479	37.625	37.625
Sensor Integration APSC	WR	NAWCWD:China Lake, CA	1.785	0.486	Jan 2011	-		-		-	0.080	2.351	
Sensor Integration APSC	Various	Raytheon:Goleta, CA	4.141	2.200	Mar 2011	-		-		-	0.000	6.341	
Dev Sensor Integration (SSG/SEI)	WR	NAWCWD:China Lake, CA	0.523	1.574	Jan 2011	1.220	Dec 2011	-		1.220	2.886	6.203	
Dev Sensor Integration (SSG/SEI)	Various	Boeing:St. Louis, MO	2.960	2.050	Mar 2011	1.161	Mar 2012	-		1.161	0.264	6.435	
Dev Sensor Integration (SSG/SEI)	Various	Various:Various	-	2.868	Jan 2011	0.486	Dec 2011	-		0.486	3.035	6.389	
SW Dev IDECM - HGESM	Various	Boeing:St. Louis, MO	1.482	0.914	Mar 2011	0.551	Mar 2012	-		0.551	0.203	3.150	
SW Dev IDECM - HGESM	WR	NAWCWD:China Lake, CA	0.390	1.522	Jan 2011	1.260	Dec 2011	-		1.260	0.244	3.416	
SW Dev IDECM - HGESM	Various	Raytheon:Goleta, CA	-	2.542	Jan 2011	1.421	Jan 2012	-		1.421	3.161	7.124	
Development Sensor Integration (Multi Ship Geo)	WR	NAWCWD:China Lake, CA	-	2.779	Jan 2011	-		-		-	4.569	7.348	
Development Sensor Integration (Multi Ship Geo)	Various	Raytheon:Goleta, CA	-	1.310	Jan 2011	-		-		-	2.665	3.975	
Development Sensor Integration (Multi Ship Geo)	Various	Boeing:St. Louis, MO	-	1.315	Jan 2011	-		-		-	2.665	3.980	
AGCAS Systems Engineering	Various	Various:Various	-	-		-		-		-	5.000	5.000	
Primary Hardware Dev IRST2	C/CPIF	Boeing:St. Louis, MO	-	19.900	Mar 2011	37.604	Nov 2011	-		37.604	63.480	120.984	120.984
Primary Hardware Dev MSI Phase II	Various	Various:Various	-	-		1.000	Dec 2011	-		1.000	0.000	1.000	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year cost no longer funded in FYDP	Various	Various:Various	456.920	-		-		-		-	0.000	456.920	
Subtotal			522.811	63.880		48.453		-		48.453	92.624	727.768	

Remarks
 "Primary Hardware Development IRST" (C/CPFF) in FY11 was reduced from 31.150 to 11.250 with the remaining 19.900 put on "Primary Hardware Development IRST" C/CPIF. The reason for the change was to show the two different contracting actions now required for the IRST effort.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development IRST	WR	NAWCWD:China Lake, CA	-	-		2.860	Dec 2011	-		2.860	3.000	5.860	
Software Dev IDECM - HGESM	WR	NAWCWD:China Lake, CA	10.421	0.158	Dec 2010	0.148	Dec 2011	-		0.148	0.000	10.727	
Development Support IRST	WR	NAWCWD:China Lake, CA	4.727	0.995	Nov 2010	0.500	Dec 2011	-		0.500	1.000	7.222	
Development Support IRST	WR	NAWCAD:Pax River, MD	5.340	1.197	Nov 2010	1.960	Dec 2011	-		1.960	1.367	9.864	
Development Support IRST	WR	NAWCAD:Lakehurst, NJ	0.182	0.382	Feb 2011	0.800	Dec 2011	-		0.800	0.200	1.564	
Development Support IRST	WR	FRC Southeast:Jacksonville, FL	1.111	0.945	Nov 2010	1.350	Dec 2011	-		1.350	1.000	4.406	
Development Support IRST	WR	FRC Southwest:North Island, CA	0.082	0.075	Nov 2010	0.325	Dec 2011	-		0.325	0.075	0.557	
Software Dev (SCS) DTS	Various	Boeing:St. Louis, MO	21.066	7.937	May 2011	0.224	Feb 2012	-		0.224	30.770	59.997	59.997
Development Support - Sensor Integration (SSG/SEI)	WR	NAWCWD:China Lake, CA	1.500	0.138	Dec 2010	0.148	Dec 2011	-		0.148	0.000	1.786	
Development Support - Sensor Integration (MSI Ph II)	Various	NAWCWD:China Lake, CA	1.533	2.688	Jan 2011	-		-		-	3.470	7.691	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support - Sensor Integration (MSI Ph II)	Various	Boeing:St. Louis, MO	4.998	8.757	Jan 2011	-		-		-	10.410	24.165	24.165
Development Support - Sensor Integration (Multi Ship Geo)	WR	NAWCWD:China Lake, CA	6.745	0.826	Jan 2011	-		-		-	1.288	8.859	
Development Support EW Sensor MSI Phase I	WR	NAWCWD:China Lake, CA	0.058	0.424	Jan 2011	-		-		-	0.500	0.982	
AGCAS Development Support	Various	Various:Various	-	-		-		-		-	4.203	4.203	
AGCAS Software Development	C/CPFF	Boeing:St. Louis, MO	-	-		2.815	Nov 2011	-		2.815	23.000	25.815	
AGCAS Configuration Management	Various	Various:Various	-	-		-		-		-	1.000	1.000	
AGCAS Technical Data	C/CPFF	Boeing:St. Louis, MO	-	-		0.300	Nov 2011	-		0.300	0.000	0.300	
AGCAS Studies & Analysis	C/CPFF	Boeing:St. Louis, MO	-	-		1.100	Nov 2011	-		1.100	0.000	1.100	
Development Support - Sensor Integration MSI Phase II	WR	FRC Southwest:North Island, CA	-	-		0.060	Jan 2012	-		0.060	0.000	0.060	
Development Support - Sensor Integration MSI Phase II	WR	PMA205:Pax River, MD	-	-		0.638	Jan 2012	-		0.638	0.000	0.638	
Prior Year costs no longer funded in FYDP	Various	Various:Various	2,907.041	-		-		-		-	0.000	2,907.041	
Subtotal			2,964.804	24.522		13.228		-		13.228	81.283	3,083.837	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT&E IRST	WR	NAWCAD:Pax River, MD	2.923	0.675	Nov 2010	0.700	Dec 2011	-		0.700	0.600	4.898	
DT&E IRST	WR	NAWCWD:China Lake, CA	0.759	0.200	Nov 2010	2.500	Dec 2011	-		2.500	1.800	5.259	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ODT&E IRST	WR	OPTEVFOR:VX-9	0.013	0.005	Feb 2011	1.052	Dec 2011	-		1.052	1.700	2.770	
DT&E Dist Targeting DTS 1	WR	NAWCWD:China Lake, CA	5.956	10.584	Jan 2011	0.093	Dec 2011	-		0.093	1.808	18.441	
DT&E Dist Targeting DTS 2	WR	NAWCWD:China Lake, CA	0.150	6.903	Jan 2011	0.693	Dec 2011	-		0.693	0.045	7.791	
OT&E Dist Targeting DTS	WR	OPTEVFOR:Norfolk, VA	0.450	0.400	Jan 2011	0.398	Dec 2011	-		0.398	3.000	4.248	
OT&E Sensor Integration - SSG/SEI/MSI Ph I	WR	OPTEVFOR:Norfolk, VA	1.027	0.030	Apr 2011	-		-		-	0.032	1.089	
DT&E Sensor Integration - MSI Ph II-3	WR	NAWCAD:Pax River, MD	1.830	2.737	Jan 2011	-		-		-	3.670	8.237	
DT&E Sensor Integration - MSI Ph II-4	WR	FRC Southwest:North Island, CA	-	-		-		-		-	0.390	0.390	
Weapons Integration	WR	NAWCAD:Pax River, MD	-	-		-		2.000	Jun 2012	2.000	0.000	2.000	
DT&E Sensor Integration - MSI Phase II	WR	NAWCWD:China Lake, CA	-	-		6.648	Feb 2012	-		6.648	0.000	6.648	
DT&E Sensor Integration - MSI Phase II	WR	Various:Various	-	-		2.005	Jan 2012	-		2.005	0.000	2.005	
Prior Year costs no longer funded in FYDP	Various	Various:Various	79.642	-		-		-		-	0.000	79.642	
Subtotal			92.750	21.534		14.089		2.000		16.089	13.045	143.418	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt Support DTS	WR	NAVAIR:Pax River, MD	2.048	1.819	Jan 2011	0.522	Dec 2011	-		0.522	0.448	4.837	
Govt Eng Support DTS	WR	NAWCAD:Pax River, MD	4.315	1.451	Jan 2011	1.825	Dec 2011	-		1.825	0.050	7.641	
Program Mgmt Sup (MISC)	Various		0.733	1.342	Jan 2011	-		-		-	16.843	18.918	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		NAWCAD:Pax River, MD											
Program Mgmt Sup (PMMAC-MSS)	C/CPFF	NAWCAD:Pax River, MD	6.854	2.500	Nov 2010	-		-		-	8.000	17.354	17.354
Travel	Various	NAWCAD:Pax River, MD	2.550	1.000	Feb 2011	-		-		-	3.200	6.750	
Flight Plan Engineering	Various	NAWCAD:Pax River, MD	2.900	1.260	Jan 2011	1.175	Dec 2011	-		1.175	3.515	8.850	
Flight Plan Engineering	Various	NAWCWD:China Lake, CA	6.400	2.940	Jan 2011	1.850	Jan 2012	-		1.850	8.203	19.393	
Gov Eng Support MSI PH II	WR	NAWCAD:Pax River, MD	0.260	0.327	Jan 2011	1.667	Dec 2011	-		1.667	0.510	2.764	
Gov Eng Support IRST	WR	NAWCAD:Pax River, MD	-	0.750	Dec 2010	-		-		-	0.000	0.750	
Test Wing Maintenance Conversion	WR	NAWCAD:Pax River, MD	11.808	4.854	Jan 2011	4.318	Jan 2012	-		4.318	57.871	78.851	
Test Wing Maintenance Conversion	WR	NAWCWD:China Lake, CA	11.808	4.854	Jan 2011	4.317	Jan 2012	-		4.317	0.000	20.979	
AGCAS Contractor Engineering Support	Various	Various:Various	-	-		0.403	Nov 2011	-		0.403	1.493	1.896	
AGCAS Government Engineering Support	Various	Various:Various	-	-		0.700	Nov 2011	-		0.700	3.200	3.900	
AGCAS Program Management Support	Various	Various:Various	-	-		0.500	Dec 2011	-		0.500	3.200	3.700	
AGCAS Travel	Various	Various:Various	-	-		-		-		-	0.800	0.800	
Prior Year costs no longer funded in FYDP	Various	Various:Various	23.156	-		-		-		-	0.000	23.156	
Subtotal			72.832	23.097		17.277		-		17.277	107.333	220.539	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0204136N: *F/A-18 Squadrons*

PROJECT
 1662: *F/A-18 Improvement*

Distributed Targeting System (DTS)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones																																
Milestones						MS-C ▲										IOC ▲																
System Development																																
Hardware Development	DTP/MSU HW Development																															
Software Development	Mission Planning Interface (MPI) Case Dev																															
	Distributed Targeting Processor SW Dev																															
	Mission Computer SW Dev																															
	MPI Transit DAOP SW Dev																															
Reviews				DTP TRR/FRR ■																												
Test and Evaluation																																
	Qual Testing																															
	Reliability Development Testing (RDT)																															
Developmental Testing	Geo-reg Integration Testing																															
	DT Flight Testing																															
Operational Testing					OT Flight Testing																											
Production Milestone																																
Contract Awards	ECP Level III Maintenance																															
Deliveries					LRIP-1 ●	LRIP-2 ●				FRP ●																						
									LRIP-1 (Lot 1 - Qty 30)	LRIP-2 (Lot 2 - Qty 60)				FRP (Lot 3 - Qty 86) (Lot 4 - Qty 80) (Lot 5 - Qty 73)																		

2012PB - 0204136N - 1662

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

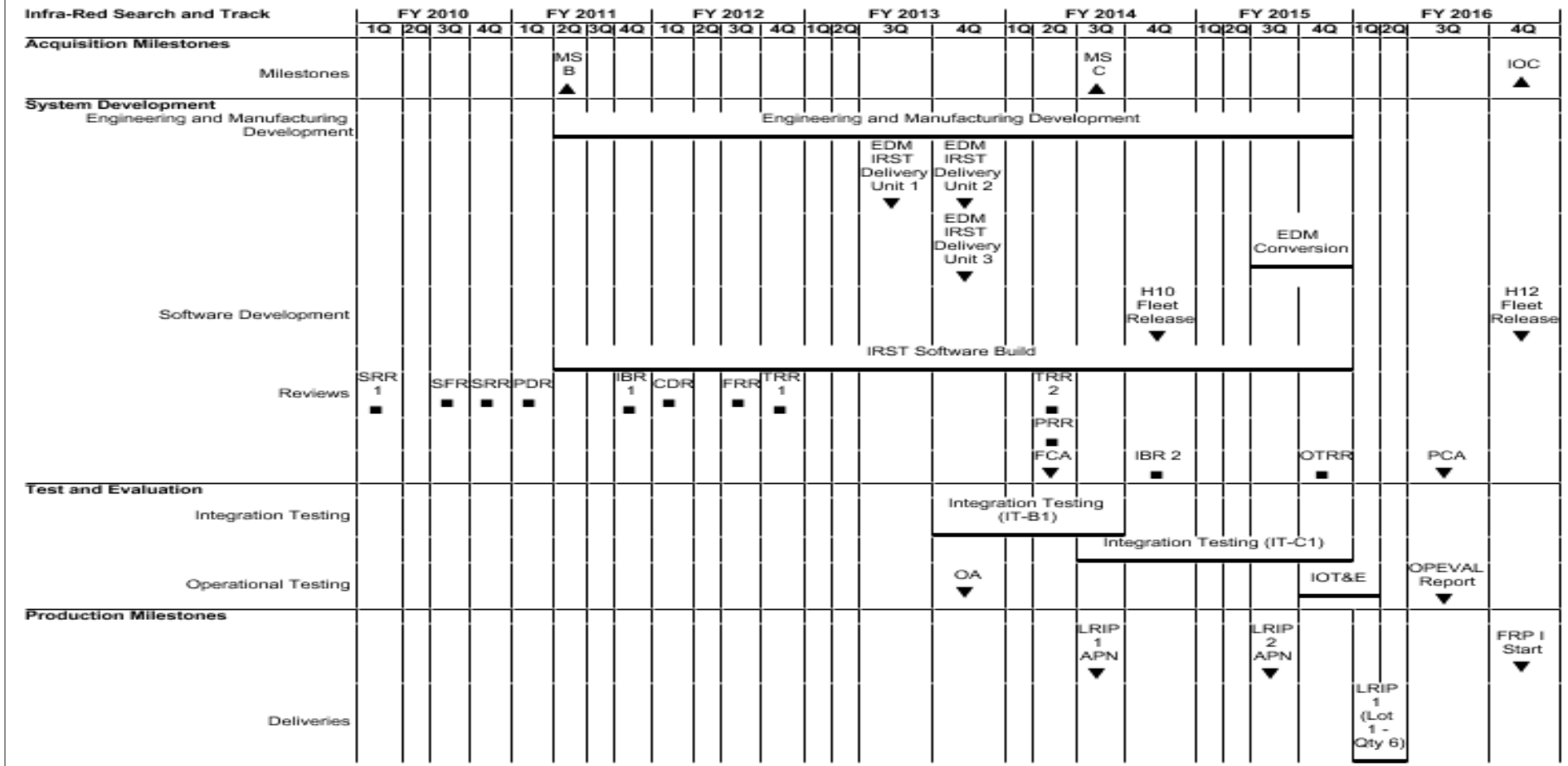
1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204136N: *F/A-18 Squadrons*

PROJECT

1662: *F/A-18 Improvement*



2012PB - 0204136N - 1662

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0204136N: *F/A-18 Squadrons*

PROJECT
 1662: *F/A-18 Improvement*

MSI Phase I	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
System Development																												
Software Development																												
Software Development MSI																												
Software Integration MSI																												
Reviews																												
OTRR																												
Test and Evaluation																												
Validation/Verification, IT&E MSI																												
OPEVAL																												
Production Milestones																												
Deliveries																												
Fleet Release MSI Ph I																												

2012PB - 0204136N - 1662

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204136N: *F/A-18 Squadrons*

PROJECT

1662: *F/A-18 Improvement*

Automatic Ground Collision Avoidance System	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquistion Milestones																												
System Development																												
Hardware Development																												
Software Development																												
Reviews																												
Test and Evaluation																												
Production Milestones																												
Deliveries																												

2012PB - 0204136N - 1662

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Distributed Targeting System (DTS)</i>				
Acquisition Milestones: Milestones: Milestone C	2	2011	2	2011
Acquisition Milestones: Milestones: Initial Operational Capability	4	2012	4	2012
System Development: Hardware Development: DTP/MSU HW Development	1	2010	4	2010
System Development: Hardware Development: Mission Planning Interface (MPI) Case Development	1	2010	3	2010
System Development: Software Development: Distributed Targeting Processor (DTP) SW Development	1	2010	4	2010
System Development: Software Development: Mission Computer SW Development	1	2010	4	2010
System Development: Software Development: Mission Planning Interface (MPI) Transit DAOP SW Development	1	2010	4	2010
System Development: Reviews: DTP Test Readiness Review/Fleet Readiness Review	4	2010	4	2010
Test and Evaluation: Qual Testing	1	2010	4	2010
Test and Evaluation: Reliability Development Testing (RDT)	1	2010	3	2010
Test and Evaluation: Geo-reg Integration Testing	3	2010	2	2011
Test and Evaluation: Developmental Testing: DT Flight Testing	4	2010	1	2012
Test and Evaluation: Operational Testing: OT Flight Testing	2	2012	4	2012
Production Milestone: Engineering Change Proposal (ECP) Level III Maintenance	3	2010	4	2011
Production Milestone: Contract Awards: Low Rate Initial Production (LRIP 1) RDTEN	3	2011	3	2011
Production Milestone: Contract Awards: LRIP 2 RDTEN	2	2012	2	2012
Production Milestone: Contract Awards: Full Rate Production (FRP)	4	2012	4	2012
Production Milestone: Deliveries: LRIP 1 (Lot 1 - Qty 30)	3	2012	1	2013
Production Milestone: Deliveries: LRIP 2 (Lot 2 - Qty 60)	2	2013	2	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestone: Deliveries: FRP (Lot 3 - Qty 86) (Lot 4 - Qty 80) (Lot 5 - Qty 73)	2	2014	4	2016
<i>Infra-Red Search and Track</i>				
Acquisition Milestones: Milestones: Milestone B	2	2011	2	2011
Acquisition Milestones: Milestones: Milestone C (MS C)	3	2014	3	2014
Acquisition Milestones: Milestones: Initial Operational Capability (IOC)	4	2016	4	2016
System Development: Engineering and Manufacturing Development: Engineering and Manufacturing Development	2	2011	4	2015
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - Lab/IT&E (Unit 1)	3	2013	3	2013
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - Lab/IT&E (Unit 2)	4	2013	4	2013
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - (Unit 3)	4	2013	4	2013
System Development: Engineering and Manufacturing Development: EDM Conversion	3	2015	4	2015
System Development: Software Development: H10 Fleet Release	4	2014	4	2014
System Development: Software Development: H12 Fleet Release	4	2016	4	2016
System Development: Software Development: IRST Software Build	2	2011	4	2015
System Development: Reviews: System Readiness Review (SRR) 1	1	2010	1	2010
System Development: Reviews: System Functional Review (SFR)	3	2010	3	2010
System Development: Reviews: System Readiness Review (SRR)	4	2010	4	2010
System Development: Reviews: Preliminary Design Review (PDR)	1	2011	1	2011
System Development: Reviews: Integrated Baseline Review (IBR) 1	4	2011	4	2011
System Development: Reviews: Critical Design Review (CDR)	1	2012	1	2012
System Development: Reviews: Fleet Readiness Review (FRR)	3	2012	3	2012
System Development: Reviews: Test Readiness Review (TRR) 1	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
System Development: Reviews: Test Readiness Review (TRR) 2	2	2014	2	2014
System Development: Reviews: Preproduction Readiness Review (PRR)	2	2014	2	2014
System Development: Reviews: Functional Configuration Audit (FCA)	2	2014	2	2014
System Development: Reviews: Integrated Baseline Review (IBR) 2	4	2014	4	2014
System Development: Reviews: Operational Testing Readiness Review (OTRR)	4	2015	4	2015
System Development: Reviews: Physical Configuration Audit (PCA)	3	2016	3	2016
Test and Evaluation: Integration Testing: Integration Testing (IT-B1)	4	2013	3	2014
Test and Evaluation: Integration Testing: Integration Testing (IT-C1)	3	2014	4	2015
Test and Evaluation: Operational Testing: Operational Assessment (OA)	4	2013	4	2013
Test and Evaluation: Operational Testing: Integrated Operational Test & Evaluation (IOT&E)	4	2015	1	2016
Test and Evaluation: Operational Testing: OPEVAL Report	3	2016	3	2016
Production Milestones: LRIP 1 APN	3	2014	3	2014
Production Milestones: LRIP 2 APN	3	2015	3	2015
Production Milestones: FRP I Start	4	2016	4	2016
Production Milestones: Deliveries: Low Rate Initial Production I (Lot 1 - Qty 6)	1	2016	2	2016
SSG/SEI, HGESM/IDECM				
System Development: Software Development: Software Development	1	2010	2	2011
System Development: Software Development: Software Integration	1	2010	2	2011
System Development: Reviews: Operational Testing Readiness Review (OTRR) 1	1	2012	1	2012
Test and Evaluation: Validation/Verification, IT&E	3	2011	4	2011
Test and Evaluation: Operational Evaluation (OPEVAL)	1	2012	3	2012
Production Milestones: Fleet Release	4	2012	4	2012
MSI Phase I				

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 1662: <i>F/A-18 Improvement</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
System Development: Software Development: Software Development MSI	1	2010	2	2011
System Development: Software Development: Software Integration MSI	1	2010	2	2011
System Development: Reviews: Operational Testing Readiness Review (OTRR) 1 MSI	1	2012	1	2012
Test and Evaluation: Validation/Verification, IT&E MSI	3	2011	4	2011
Test and Evaluation: Operational Evaluation (OPEVAL) MSI	1	2012	3	2012
Production Milestones: Fleet Release MSI Ph I	4	2012	4	2012
MSI Phase II				
System Development: Requirements Definition	1	2010	1	2011
System Development: Design & Development	1	2011	1	2012
Test and Evaluation: Integration Testing MSI	2	2012	2	2013
Test and Evaluation: Operational Testing H10	1	2014	3	2014
Production Milestones: Fleet Release MSI Ph II	4	2014	4	2014
Automatic Ground Collision Avoidance System				
System Development: Hardware Development: Statement of Work Development	1	2012	4	2012
System Development: Software Development: System Performance Specification	1	2012	1	2012
System Development: Software Development: H12 Software Development & Delivery	1	2012	3	2016
System Development: Software Development: H14 Software Development & Delivery	4	2013	4	2016
System Development: Software Development: Integrated Readiness Review	4	2011	4	2011
System Development: Reviews: System Software Review (SSR)	2	2012	2	2012
System Development: Reviews: Critical Design Review (CDR) (AGCAS)	1	2013	1	2013
System Development: Reviews: Test Readiness Review (TRR) (AGCAS)	4	2015	4	2015
Test and Evaluation: Developmental Testing (AGCAS)	1	2016	4	2016
Test and Evaluation: TEMP Development	2	2013	1	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 2065: <i>F/A-18 Radar Upgrade</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2065: <i>F/A-18 Radar Upgrade</i>	13.907	15.405	57.983	-	57.983	64.195	1.831	-	-	0.000	153.321
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

F/A-18 Radio Detection and Ranging (RADAR) Upgrade: The F/A-18 RADAR Upgrade, Active Electronically Scanned Array (AESA) development program, which began in FY 1999, is the last of three pre-planned upgrades to the F/A-18 Type/Model/Series RADAR. The AESA system corrects operational test deficiencies noted in the AN/APG-73. It provides for multi-target tracking, Synthetic Aperture RADAR (SAR) imagery, SAR Target Location Error (TLE), and improved spotlight map resolution. In addition, it provides for greater lethality than previous F/A-18 RADARs by allowing for full tactical support of existing and planned air-to-air (A/A) and air-to-ground (A/G) weapons and it significantly increases A/A and A/G detection and tracking ranges. The AESA system provides greater survivability through self-protection and standoff jamming capabilities, while its greater range allows for reduced detection by enemy radar. This budget continues spiral capability development of AESA by increased efforts to address Phase II Operational Requirements Document requirements such as Electronic Protection (EP) against multiple Radio Frequency emitters (Distributed Targeting - AESA Multi-Jammer EP), Electronic Attack Multiple Targeted Track and Engagement and Aided Target Recognition via minimal hardware/maximum software changes. Higher Order Language Software development and integration is also required for expanded A/A and A/G capabilities while in a tactical A/A and A/G threat Electronic Attack environment.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Distributed Targeting - AESA EP Engineering and Manufacturing Development	1.500	2.750	2.457	-	2.457
Articles:	0	0	0		0
Description: The AESA system provides greater survivability through self-protection and standoff jamming capabilities. This budget continues spiral capability development of AESA by increased efforts to address Phase II Operational Requirements Document requirements.					
FY 2010 Accomplishments: Continued Engineering Manufacturing Development efforts. Continue hardware developmental and refinement to the inherent EP efforts that will increase the number of channels within the Receiver to enable Multi-Channel future software Multi-Jammer Electronic Protection (EP) activities.					
FY 2011 Plans: Continue Engineering Manufacturing Development efforts. Continue hardware developmental and refinement to the inherent EP.					
FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>		PROJECT 2065: <i>F/A-18 Radar Upgrade</i>	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue Engineering Manufacturing Development efforts. Continue hardware developmental and refinement to the inherent EP.					
Title: Distributed Targeting - AESA EP SW Development, Developmental Testing, Operational Testing, & Integration Articles: Description: Funding being utilized to support software capabilities development and associated testing. FY 2010 Accomplishments: Continued Development Testing, systems integration efforts, and AESA Operational Test and Evaluation inclusive of some Follow-on Test and Evaluation for minimal hardware/software change efforts. Continued Multi-Jammer EP efforts which expands and improves upon current software capability for EP against multiple Radio Frequency emitters, Electronic Attack, and improved Fixed/Ground Mobile Target detection and tracking. FY 2011 Plans: Continue software development, Development Testing, systems integration efforts, and AESA Operational Test and Evaluation inclusive of some Follow-on Test and Evaluation for minimal hardware/software change efforts. Continue Multi-Jammer EP efforts. FY 2012 Base Plans: Continue software development, Development Testing, systems integration efforts, and AESA Operational Test and Evaluation inclusive of some Follow-on Test and Evaluation for minimal hardware/software change efforts. Continue Multi-Jammer EP efforts.	12.407 0	12.655 0	55.526 0	-	55.526 0
Accomplishments/Planned Programs Subtotals	13.907	15.405	57.983	-	57.983

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APN/0145: <i>F/A-18E/F</i>	1,499.876	1,784.894	2,366.752	0.000	2,366.752	2,284.560	1,012.842	0.000	0.000	0.000	42,500.014
• APN/0145C: <i>F/A-18E/F AP</i>	51.271	2.295	64.962	0.000	64.962	25.300	0.000	0.000	0.000	0.000	1,647.253
• APN/0143: <i>EA-18G</i>	1,606.833	1,028.801	1,079.364	0.000	1,079.364	1,007.386	6.442	8.199	0.000	0.000	8,765.816
• APN/1043C: <i>EA-18G AP</i>	20.496	55.081	28.119	0.000	28.119	0.000	0.000	0.000	0.000	0.000	275.089
	44.013	126.222	68.281	0.000	68.281	76.473	134.538	140.402	143.039	791.420	1,744.484

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 2065: <i>F/A-18 Radar Upgrade</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN/05250: <i>F-18 Series Mod</i> (OSIP 002-07)											

D. Acquisition Strategy

The AESA program continues developmental efforts following a successful Full Rate Production milestone decision, after completing a two-phase Acquisition approach during the FY1999 through FY2007 timeframe. This strategy continues utilization of reform initiatives such as: early partnering with industry; leveraging industry investment; optimizing use of Commercial Off-The Shelf software and Non-Developmental Item; using Cost as an Independent Variable; and Electronic Data Deliverables. Basic Ordering Agreement orders for Request for Proposal developments are in place for Boeing, the airframe prime manufacturer/integrator, and Raytheon, the RADAR manufacturer, for focused risk reduction and sustainment of prior developmental activities.

E. Performance Metrics

Execute the system engineering process for software delivery and support the design and development of: EP, A/A and A/G Capabilities.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 2065: <i>F/A-18 Radar Upgrade</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development1	SS/CPFF	Boeing:St. Louis, MO	453.849	-		-		-		-	0.000	453.849	453.849
GFE	SS/CPFF	Boeing:St. Louis, MO	3.517	-		-		-		-	0.000	3.517	3.517
Primary Hardware Development	WR	NSMA:Arlington, VA	3.910	1.000	Nov 2010	0.894	Feb 2012	-		0.894	0.649	6.453	
Primary Hardware Development2	SS/CPFF	Boeing:St. Louis, MO	-	1.750	Feb 2011	1.564	Dec 2011	-		1.564	1.426	4.740	
Systems Engineering	WR	NAWCWD:China Lake, CA	0.565	0.530	Nov 2010	0.474	Nov 2011	-		0.474	0.465	2.034	
Systems Engineering	WR	NAWCAD:Pax River, MD	0.435	0.611	Nov 2010	0.545	Nov 2011	-		0.545	0.527	2.118	
Subtotal			462.276	3.891		3.477		-		3.477	3.067	472.711	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NAWCWD:China Lake, CA	27.600	7.014	Nov 2010	5.018	Feb 2012	-		5.018	3.853	43.485	
Integrated Logistics Support	WR	Various:Various	1.511	-		0.267	Nov 2011	-		0.267	0.558	2.336	
Software Development 2	WR	NSMA:Arlington, VA	-	-		45.200	Jun 2012	-		45.200	55.000	100.200	
Subtotal			29.111	7.014		50.485		-		50.485	59.411	146.021	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	Various:Various	78.958	-		-		-		-	0.000	78.958	
Operational Test & Evaluation	WR	OPTEVFOR:Norfolk, VA	15.504	0.978	Mar 2011	0.874	Mar 2012	-		0.874	0.817	18.173	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 2065: <i>F/A-18 Radar Upgrade</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	NAWCWD:China Lake, CA	3.115	2.282	Nov 2010	1.748	Nov 2011	-		1.748	1.753	8.898	
Developmental Test & Evaluation	WR	NSMA:Arlington, VA	0.950	-		0.291	Feb 2012	-		0.291	0.000	1.241	
Developmental Test & Evaluation	MIPR	USAF Test Wing:Eglin AFB, FL	1.440	-		-		-		-	0.000	1.440	
Developmental Test & Evaluation	WR	NAWCAD:Pax River, MD	0.382	-		-		-		-	0.000	0.382	
Developmental Test & Evaluation	C/FFP	Raytheon:El Segundo, CA	5.792	-		-		-		-	0.000	5.792	5.792
Subtotal			106.141	3.260		2.913		-		2.913	2.570	114.884	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	NAVAIR:Pax River, MD	4.438	0.529	Nov 2010	0.467	Nov 2011	-		0.467	0.428	5.862	
Travel	Various	NAVAIR:Pax River, MD	1.068	0.100	Nov 2010	0.100	Nov 2011	-		0.100	0.079	1.347	
Contractor Engineering Support	Various	Various:Various	0.508	0.611	Nov 2010	0.541	Nov 2011	-		0.541	0.471	2.131	
Subtotal			6.014	1.240		1.108		-		1.108	0.978	9.340	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		603.542	15.405	57.983	-	57.983	66.026	742.956

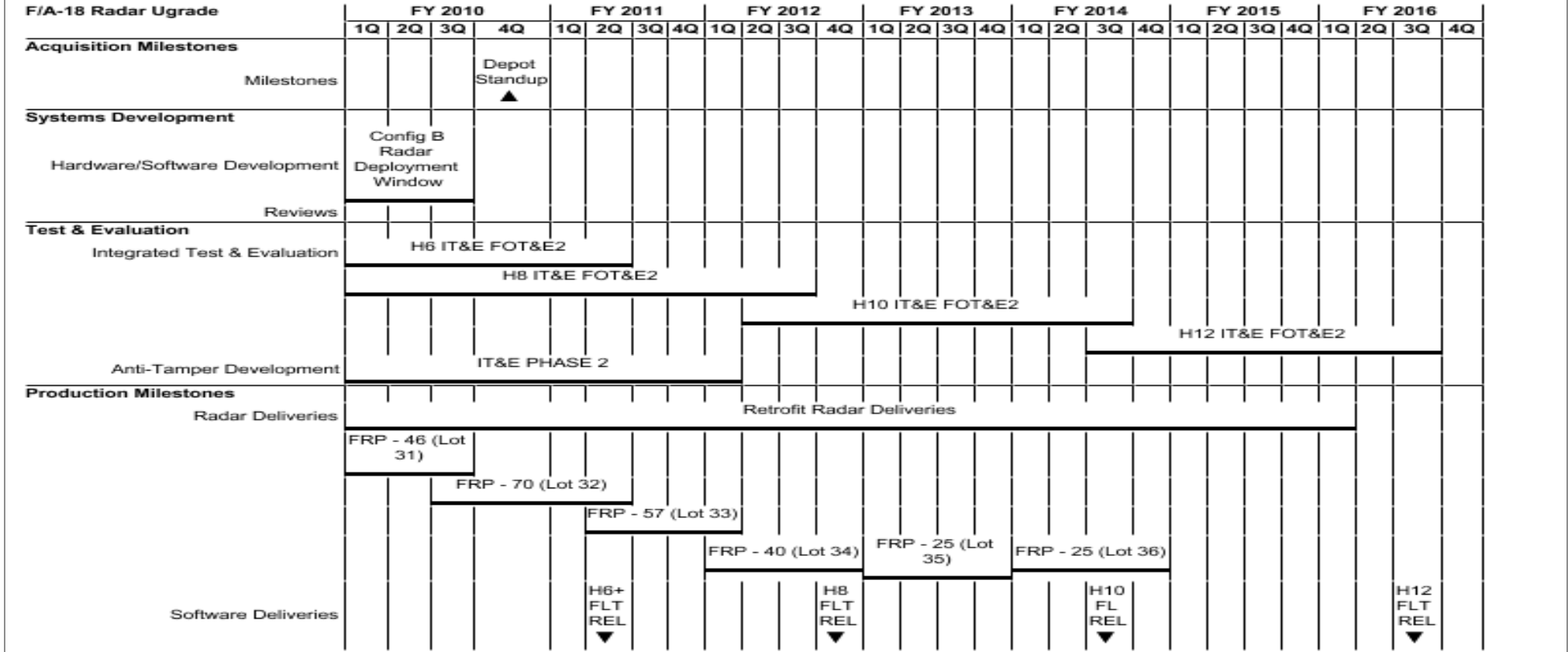
Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 2065: <i>F/A-18 Radar Upgrade</i>
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2012PB - 0204136N - 2065

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 2065: <i>F/A-18 Radar Upgrade</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>F/A-18 Radar Upgrade</i>				
Acquisition Milestones: Milestones: Depot Standup	4	2010	4	2010
Systems Development: Hardware/Software Development: Config B Radar Deployment Window	1	2010	3	2010
Test & Evaluation: Integrated Test & Evaluation: H6 IT&E FOT&E2	1	2010	2	2011
Test & Evaluation: Integrated Test & Evaluation: H8 IT&E FOT&E2	1	2010	3	2012
Test & Evaluation: Integrated Test & Evaluation: H10 IT&E FOT&E2	2	2012	3	2014
Test & Evaluation: Integrated Test & Evaluation: H12 IT&E FOT&E2	3	2014	3	2016
Test & Evaluation: Anti-Tamper Development: IT&E PHASE 2	1	2010	1	2012
Production Milestones: Radar Deliveries: Retrofit Radar Deliveries	1	2010	1	2016
Production Milestones: Radar Deliveries: Full Rate Production (FRP) Deliveries - 46 (Lot 31)	1	2010	3	2010
Production Milestones: Radar Deliveries: FRP Deliveries - 70 (Lot 32)	3	2010	2	2011
Production Milestones: Radar Deliveries: FRP Deliveries - 57 (Lot 33)	2	2011	1	2012
Production Milestones: Radar Deliveries: FRP Deliveries - 40 (Lot 34)	1	2012	4	2012
Production Milestones: Radar Deliveries: FRP Deliveries A - 25 (Lot 35)	1	2013	4	2013
Production Milestones: Radar Deliveries: FRP Deliveries B - 25 (Lot 36)	1	2014	4	2014
Production Milestones: Software Deliveries: H6+ FLEET RELEASE	2	2011	2	2011
Production Milestones: Software Deliveries: H8 FLEET RELEASE	4	2012	4	2012
Production Milestones: Software Deliveries: H10 FLEET RELEASE	3	2014	3	2014
Production Milestones: Software Deliveries: H12 FLEET RELEASE	3	2016	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204136N: <i>F/A-18 Squadrons</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	2.868	-	-	-	-	-	-	-	-	0.000	2.868
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Add.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Fighter Jet Noise Reduction Under Carrier Deck Operational Environment	2.868	-
FY 2010 Accomplishments: Initiate Jet Noise Reduction activities.		
Congressional Adds Subtotals	2.868	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not required for Congressional Adds.

E. Performance Metrics

Not required for Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	59.304	19.011	6.696	-	6.696	1.634	1.746	7.308	24.956	Continuing	Continuing
0463: <i>E2C Improvements</i>	59.304	19.011	6.696	-	6.696	1.634	1.746	7.308	24.956	Continuing	Continuing

A. Mission Description and Budget Item Justification

E-2 Improvements (0463) provides for incorporation of technologies for the evolution of E-2 Battle Management and Command and Control capabilities in support of naval warfare command and control requirements. It funds developments for the modification or replacement of Weapon Replaceable Assemblies of currently installed subsystems, as well as providing for experimentation with narrowband and wideband internet protocol (IP) concepts, to include technologies such as High Frequency Secure IP Router Network, VRC-99 digital IP radio as a surrogate to the Joint Tactical Radio System, machine-to-machine digital data communications, Advanced Digital Networking System, cooperative and non-cooperative identification, and open architecture hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities satisfying evolving operational requirements, e.g., Airborne Networking, Joint Sensor Netting and Track Management, Tactical Decision Aids, Advanced communications, and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense Capability.

A Core Open Architecture capability will modernize existing Mission Computer and Operational Flight Program architecture, preserve interfaces to future E-2 weapon systems modification, simplify maintenance and upgrades of memory and operating systems (hardware/software independence), add an improved networking backbone to quickly field future interoperable warfighting applications and utilize open and commercially adopted standards and protocols to the maximum extent possible.

An In Flight Refueling (IFR) capability will allow the E-2 to receive fuel from various organic and non-organic tanker aircraft. It provides Expanded Battle Space Surveillance and Targeting through significantly enhanced persistence and increased flexibility (range & endurance). IFR will better enable the E-2 to fully support current Carrier Strike Group /Joint 24/7 Theater Operations by providing more versatile stationing and/or forward basing options. Previous domestic E-2 concept demonstration effort successfully established the feasibility of tanking behind the F/A-18E/F and KC-130 aircraft.

The Automatic Identification System (AIS) is a broadcast transponder system operating in the Very High Frequency maritime band for exchange of ship parameters including Registry, Port of Origin, Location, Course, Speed and other vessel characteristics. The current prototype E-2C AIS installation is integrated into the E-2C weapon system without a means to transfer information off board to other platforms/systems.

Radar Improvement Program provides funding to develop, and field improvements to APS-145 radar to address reliability and obsolescence and keep them viable until aircraft retirement.

FY2012 starts the Link-16/Cooperative Engagement Capability Interoperability Program. This provides funding to address most severe data link related interoperability. This will significantly improve the quality of the tactical surveillance picture, reduce the possibility of leakers, mitigate Blue on Blue engagements, and mid-identification of tracks. Provides stable sensor fusion foundation to support sensor/weapon coordination requirements.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i>	PE 0204152N: <i>E-2 Squadrons</i>
BA 7: <i>Operational Systems Development</i>	

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	62.796	19.011	15.047	-	15.047
Current President's Budget	59.304	19.011	6.696	-	6.696
Total Adjustments	-3.492	-	-8.351	-	-8.351
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.700	-			
• SBIR/STTR Transfer	-1.492	-			
• Program Adjustments	-	-	-8.266	-	-8.266
• Section 219 Reprogramming	-0.299	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.085	-	-0.085
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Project Unit 0463 - Schedule changes to Core Open Architecture are due to contract administration delays and the addition of Test and Integrated Logistics Support. Schedule changes to In-Flight Refueling are due to moving FY12 funding to Program Element 0604234N Advanced Hawkeye. Schedule changes to High Frequency Internet Protocol are due to the extension of Systems Integration and Test, and addition of software deployment. Schedule change is also due to the addition of the Link-16/Cooperative Engagement Capability Interoperability Program.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0463: <i>E2C Improvements</i>	59.304	19.011	6.696	-	6.696	1.634	1.746	7.308	24.956	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

E-2 Improvements (0463) provides for incorporation of technologies for the evolution of E-2 Battle Management and Command and Control capabilities in support of naval warfare command and control requirements. It funds developments for the modification or replacement of Weapon Replaceable Assemblies of currently installed subsystems, as well as providing for experimentation with narrowband and wideband internet protocol (IP) concepts, to include technologies such as High Frequency Secure IP Router Network, VRC-99 digital IP radio as a surrogate to the Joint Tactical Radio System, machine-to-machine digital data communications, Advanced Digital Networking System, cooperative and non-cooperative identification, and open architecture hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities satisfying evolving operational requirements, e.g., Airborne Networking, Joint Sensor Netting and Track Management, Tactical Decision Aids, Advanced communications, and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense Capability.

A Core Open Architecture capability will modernize existing Mission Computer and Operational Flight Program architecture, preserve interfaces to future E-2 weapon systems modification, simplify maintenance and upgrades of memory and operating systems (hardware/software independence), add an improved networking backbone to quickly field future interoperable warfighting applications and utilize open and commercially adopted standards and protocols to the maximum extent possible.

An In Flight Refueling (IFR) capability will allow the E-2 to receive fuel from various organic and non-organic tanker aircraft. It provides Expanded Battle Space Surveillance and Targeting through significantly enhanced persistence and increased flexibility (range & endurance). IFR will better enable the E-2 to fully support current Carrier Strike Group /Joint 24/7 Theater Operations by providing more versatile stationing and/or forward basing options. Previous domestic E-2 concept demonstration effort successfully established the feasibility of tanking behind the F/A-18E/F and KC-130 aircraft.

The Automatic Identification System (AIS) is a broadcast transponder system operating in the Very High Frequency maritime band for exchange of ship parameters including Registry, Port of Origin, Location, Course, Speed and other vessel characteristics. The current prototype E-2C AIS installation is integrated into the E-2C weapon system without a means to transfer information off board to other platforms/systems.

Radar Improvement Program provides funding to develop, and field improvements to APS-145 radar to address reliability and obsolescence and keep them viable until aircraft retirement.

FY2012 starts the Link-16/Cooperative Engagement Capability Interoperability Program. This provides funding to address most severe data link related interoperability. This will significantly improve the quality of the tactical surveillance picture, reduce the possibility of leakers, mitigate Blue on Blue engagements, and mid-identification of tracks. Provides stable sensor fusion foundation to support sensor/weapon coordination requirements.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Airborne Battlefield Command and Control</p> <p align="right">Articles:</p> <p>Description: Funds development and demonstration of E-2 airborne Joint Sensor Netting and Track Management (including Network Centric Collaborative Targeting), Internet Protocol(IP) networking concepts (including Advanced Digital Networking Systems, and IP enabled communications systems), machine-to-machine interface, open architecture computing environment, network applications, tactical decision aids, combat identification technologies, on and off-board data fusion capabilities, and advanced mission computer and communications technologies airborne demonstrations.</p> <p>FY 2010 Accomplishments: Funded development efforts and a Joint Expeditionary Force Exercise and a Limited Objective Experiment.</p> <p>FY 2011 Plans: Funds the continuation of development efforts and a Empire Challenge exercise and a Limited Objective Experiment.</p> <p>FY 2012 Base Plans: Funding is for development efforts and a Joint Expeditionary Force Exercise and a Limited Objective Experiment.</p>	5.205 0	3.564 0	3.507 0	-	3.507 0
<p>Title: In Flight Refueling (IFR)</p> <p align="right">Articles:</p> <p>Description: Funds the system development and testing to support the incorporation of IFR capability into the E-2 aircraft. Emphasis during system development is on system redesign, air vehicle design, human systems integration and design, including interior/lighting modifications and seat replacement. Flight testing is required to verify system meets requirements and evaluate field of view, thermal and aerodynamic loads, kinematic performance, and handling qualities. FY12 funding moves to PE 0604234N, E-2D Advanced Hawkeye.</p> <p>FY 2010 Accomplishments: Funded system development efforts.</p> <p>FY 2011 Plans: Funds the continuation of system development efforts.</p>	8.581 0	1.270 0	-	-	-
<p>Title: Universal Automatic Identification System (UAIS)</p>	4.095	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p align="right">Articles:</p> <p>Description: Funds integrated UAIS into the E-2 mission computer and provided for a means to transfer Automatic Identification System data from the aircraft inflight to warships. The integration included non-recurring engineering, logistics and test and evaluation to integrate UAIS control features and output into the E-2 weapons system and to standardize and document the UAIS hardware already installed on E-2 aircraft. It integrated other enhancing identification technologies complimentary to UAIS into the E-2.</p> <p>FY 2010 Accomplishments: Funded developmental testing for the UAIS system.</p>	0				
<p>Title: E-2 Core Open Architecture (OA)</p> <p align="right">Articles:</p> <p>Description: Funding supports the development, integration and test of an OA distributed computing environment and Internet Protocol networking infrastructure.</p> <p>FY 2010 Accomplishments: Funded system development efforts and the beginning of the system integration and test.</p> <p>FY 2011 Plans: Funds the continuation of system integration and test and the beginning of Trainer Integration.</p>	27.267 0	5.885 0	-	-	-
<p>Title: E-2 High Frequency (HF) Internet Protocol (IP)</p> <p align="right">Articles:</p> <p>Description: Funds the development, integration and test of HF radio and Mission Computer hardware and software modifications and additions to provide an E-2 HF digital data communications path, allowing for E-2 connectivity with other HFIP users.</p> <p>FY 2010 Accomplishments: Funded continued System Integration and Test efforts and deployment.</p> <p>FY 2011 Plans: Funds the HFIP trainers.</p>	4.381 0	2.114 0	-	-	-
<p>Title: Radar Improvements Program</p> <p align="right">Articles:</p>	9.775 0	6.178 0	2.884 0	-	2.884 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: Funds development, integration, test, and fielding of new components within the E-2C radar to address obsolete Weapon Replaceable Assemblies that are expected to be unsupported in the near term. Such improvements will keep the APS-145 radar viable until 2026, the projected E-2C retirement date. This funding also supports necessary modifications within the APS-145 Radar Test Bench System.</p> <p>FY 2010 Accomplishments: Funded the design and development efforts.</p> <p>FY 2011 Plans: Funds the continuation of the design and development efforts and ground and flight testing.</p> <p>FY 2012 Base Plans: Funding is for the continuation of ground and flight testing and software deployment.</p>					
<p>Title: Link-16/Cooperative Engagement Capability (CEC) Interoperability</p> <p align="right">Articles:</p> <p>Description: New start program in FY12 for design, implementation, test and analysis of Link-16/CEC related interoperability issues.</p> <p>FY 2012 Base Plans: Funds the systems engineering development efforts.</p>	-	-	0.305 0	-	0.305 0
Accomplishments/Planned Programs Subtotals	59.304	19.011	6.696	-	6.696

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APN/0195: <i>E-2D AHE</i>	742.061	937.803	1,072.834	163.500	1,236.334	1,308.850	1,599.492	1,398.859	1,417.059	4,605.325	17,447.774
• APN/0605: <i>Initial Spares - E-2</i>	37.775	23.618	38.712	0.000	38.712	50.178	31.355	30.239	28.591	106.090	553.655
• APN/0544: <i>E-2 Series</i>	50.284	47.046	29.215	0.000	29.215	18.175	34.965	40.010	39.848	102.479	1,606.969

D. Acquisition Strategy

The Core OA Acquisition Strategy was signed by Milestone Decision Authority (MDA), Program Executive Officer Tactical Aircraft Programs (PEO (T)) on 11 September 2008. The Milestone B decision review is planned for third quarter FY11.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>

The IFR Acquisition Strategy was signed by the MDA, PEO(T) on 24 October 2008.

E. Performance Metrics

Successfully complete Core OA System Integration and Test and begin Trainer Integration. Successfully develop and deliver Trainers in support of the High Frequency Internet Protocol program. Successfully complete the Pre - System Development & Demonstration phase in support of the IFR program. Successfully complete developmental testing and deploy the UAI System. Successfully complete Design Development for the Radar Improvements program and begin ground and flight testing. Successfully complete Design Development for the Link-16/CEC Interoperability program.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	Northrop Grumman Corporation:Bethpage, NY	2.146	0.152	Dec 2010	-		-		-	0.000	2.298	2.298
Primary Hardware Development4	Various	Various:Various	16.531	2.020	Nov 2010	0.752	Nov 2011	-		0.752	0.000	19.303	
Primary Hardware Development	SS/FFP	Lockheed Martin:Owego, NY	3.641	1.551	Jan 2011	-		-		-	0.000	5.192	5.192
Ancillary Hardware Development	Various	Various:Various	-	0.300	Jan 2011	0.440	Jan 2012	-		0.440	0.000	0.740	
Aircraft Integration2	Various	Various:Various	-	0.300	Nov 2010	-		-		-	0.000	0.300	
Training Development	TBD	TBD:TBD	-	-		-		-		-	5.112	5.112	5.112
Prior Yr Costs No longer funded in FYDP	Various	Various:Various	8.320	-		-		-		-	0.000	8.320	
Subtotal			30.638	4.323		1.192		-		1.192	5.112	41.265	

Remarks

Primary Hardware Development4 and Aircraft Integration2 - various contractors and award dates throughout the fiscal year.
Totals may not add due to rounding.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various:Various	1.724	0.995	Dec 2010	0.346	Dec 2011	-		0.346	0.064	3.129	
Development Support	TBD	TBD:TBD	-	-		-		-		-	2.752	2.752	2.752
Software Development1	C/CPFF	Wyle Labs:Huntsville, AL	4.390	0.726	Dec 2010	-		-		-	0.000	5.116	5.116
Software Development2	Various	Various:Various	7.119	0.538	Nov 2010	-		-		-	0.000	7.657	
Software Development3	Various	Various:Various	25.248	1.814	Nov 2010	-		-		-	0.000	27.062	
Software Development4	TBD	TBD:TBD	-	-	Nov 2010	0.051	Nov 2011	-		0.051	26.753	26.804	26.804
	Various	Various:Various	8.062	1.865	Dec 2010	1.013	Dec 2011	-		1.013	0.000	10.940	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Technical Services													
Government Engineering Support2	Various	Various:Various	12.563	0.903	Nov 2010	0.564	Nov 2011	-		0.564	0.405	14.435	
Government Engineering Support3	WR	Naval Air Warfare Center Aircraft Division (NAWCAD:Pax River, MD)	10.491	1.725	Nov 2010	0.975	Nov 2011	-		0.975	3.471	16.662	
Integrated Logistics Support	Various	Various:Various	1.931	0.321	Dec 2010	0.093	Dec 2011	-		0.093	0.137	2.482	
Prior Year Costs No Longer Funded in FYDP	Various	Various:Various	12.381	-		-		-		-	0.000	12.381	
Subtotal			83.909	8.887		3.042		-		3.042	33.582	129.420	

Remarks
Software Development2 and Software Development 3 - various contractors and award dates throughout the fiscal year.
Totals may not add due to rounding.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (T&E)2	Various	Various:Various	10.914	1.047	Nov 2010	0.418	Nov 2011	-		0.418	0.388	12.767	
Developmental T & E3	WR	NAWCAD:Pax River, MD	7.258	2.137	Nov 2010	0.859	Nov 2011	-		0.859	0.395	10.649	
Developmental T&E Engineering Technical Services (ETS)4	Various	Various:Various	1.567	0.386	Dec 2010	0.313	Dec 2011	-		0.313	0.000	2.266	
Developmental T & E	TBD	TBD:TBD	-	-		-		-		-	3.624	3.624	3.624
Prior Year Costs No Longer Funded in FYDP	Various	Various:Various	1.351	-		-		-		-	0.000	1.351	
Subtotal			21.090	3.570		1.590		-		1.590	4.407	30.657	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			

Remarks
Totals may not add due to rounding.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
Government Engineering Support	WR	NAWCAD:Pax River, MD	4.229	0.869	Nov 2010	0.407	Nov 2011	-		0.407	0.042	5.547		
Program Management Support1	Various	Various:Various	6.054	0.204	Nov 2010	0.292	Nov 2011	-		0.292	0.033	6.583		
Program Management Support-MSS2	C/CPFF	Wyle Labs:Huntsville, AL	1.929	0.088	Dec 2010	0.060	Dec 2011	-		0.060	0.000	2.077	2.077	
Program Management Support-MSS3	Various	Various:Various	4.677	0.985	Dec 2010	0.058	Dec 2011	-		0.058	0.000	5.720		
Travel	Various	Various:Various	0.703	0.085	Oct 2010	0.055	Oct 2011	-		0.055	0.150	0.993		
Prior Year Costs No Longer Funded in FYDP	Various	Various:Various	0.042	-		-		-		-	0.000	0.042		
Subtotal			17.634	2.231		0.872		-		0.872	0.225	20.962		

Remarks
Program Management Support1- various contractors and award dates throughout the fiscal year.
Totals may not add due to rounding.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
		Cost	Award Date	Cost	Award Date	Cost	Award Date					
Project Cost Totals		153.271	19.011			6.696		-		6.696	43.326	222.304

Remarks
Totals may not add due to rounding.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
E2C Improvements (1)				
Systems Development: Hardware Development: Airborne Battlefield C2 - Development	1	2010	1	2014
Systems Development: Hardware Development: Airborne Battlefield C2 - Joint Expeditionary Force Exercise (JEFX) FY10	3	2010	3	2010
Systems Development: Hardware Development: Airborne Battlefield C2 - Limited Objective Experiment (LOE) FY10	4	2010	4	2010
Systems Development: Hardware Development: Airborne Battlefield C2 - Trident Warrior FY11	3	2011	3	2011
Systems Development: Hardware Development: Airborne Battlefield C2 - LOE FY11	4	2011	4	2011
Systems Development: Hardware Development: Airborne Battlefield C2 - JEFX FY12	3	2012	3	2012
Systems Development: Hardware Development: Airborne Battlefield C2 - LOE FY12	4	2012	4	2012
Systems Development: Hardware Development: Airborne Battlefield C2 - Empire Challenge FY13	3	2013	3	2013
Systems Development: Hardware Development: Airborne Battlefield C2 - LOE FY13	4	2013	4	2013
Systems Development: Hardware/Software Development: Core Open Arch - Design & Code	1	2010	3	2010
Systems Development: Hardware/Software Development: Core Open Arch - Develop & Integrate	4	2010	3	2011
Systems Development: Hardware/Software Development: Core Open Arch - Trainer Integration	3	2011	3	2012
Systems Development: Hardware/Software Development: Core Open Arch - ILS	4	2011	1	2012
Test & Evaluation: Technical Evaluation: Core Open Arch - Test Asset Delivery (Est.)	2	2011	2	2011
Test & Evaluation: Technical Evaluation: Core Open Arch - Test	3	2011	1	2012
Systems Development: Software Development: In Flight Refueling - Risk Reduction	1	2010	1	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Systems Development: Reviews: In Flight Refueling - System Readiness Review (SRR 1)	1	2011	1	2011
Systems Development: Hardware/Software Development: Universal Automatic Info System - System Development	1	2010	1	2010
Systems Development: Reviews: Universal Automatic Info System - Test Readiness Review	2	2010	2	2010
Test & Evaluation: Technical Evaluation: Universal Automatic Info System - Deploy	2	2011	2	2011
Test & Evaluation: Technical Evaluation: Universal Automatic Info System - Developmental Testing	2	2010	1	2011
Deliveries: UAIS Production Deliveries FY11: APN (15) Kits	3	2011	3	2011
Deliveries: UAIS Production Deliveries FY12: APN (15) Kits	3	2012	3	2012
Deliveries: UAIS Production Deliveries FY13: APN (15) Kits	3	2013	3	2013
Deliveries: UAIS Production Deliveries FY14: APN (15) Kits	3	2014	3	2014
Deliveries: UAIS Production Deliveries FY15: APN (13) Kits	3	2015	3	2015
E2C Improvements (2)				
Systems Development: Hardware Development: Radar Improvement Program - Development	2	2010	4	2011
Systems Development: Reviews: Radar Improvement Program System Requirements Review	4	2010	4	2010
Test & Evaluation: Technical Evaluation: Radar Improvement Program - Test Assets (Est.)	2	2011	2	2011
Test & Evaluation: Technical Evaluation: Radar Improvement Program - Ground & Flight Test	2	2011	1	2012
Test & Evaluation: Technical Evaluation: Radar Improvement Program - Deploy	2	2012	2	2012
Deliveries: Radar Improvements Production Deliveries: FY12 APN (23 KIIts)	2	2012	2	2012
Deliveries: Radar Improvements Production Deliveries: FY13 APN (10 KIIts)	2	2013	2	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204152N: <i>E-2 Squadrons</i>	PROJECT 0463: <i>E2C Improvements</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: Radar Improvements Production Deliveries: FY14 APN (12 KIts)	2	2014	2	2014
Deliveries: Radar Improvements Production Deliveries: FY15 APN (11 KIts)	2	2015	2	2015
Systems Development: Software Development: Link-16/CEC Interoperability - Systems Engineering	1	2012	4	2016
Systems Development: Software Development: Link-16/CEC Interoperability - Development	1	2014	3	2016
Test & Evaluation: Technical Evaluation: Link-16/CEC Interoperability - Functional Evaluation Test	3	2016	3	2016
Test & Evaluation: Technical Evaluation: Link-16/CEC Interoperability - Performance Evaluation Test	4	2016	4	2016
Deliveries: Link 16 CEC Production Deliveries: FY16 APN (10 Kits)	2	2016	2	2016
Systems Development: Hardware/Software Development: High Frequency Internet Proto - System Integration & Test	1	2010	1	2011
Systems Development: Hardware/Software Development: High Frequency Internet Proto - Deploy	3	2010	3	2010
Systems Development: Hardware/Software Development: High Frequency Internet Proto - Trainers	1	2011	3	2011
Systems Development: Hardware/Software Development: High Frequency Internet Proto - Deploy 2	2	2011	2	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	33.750	26.894	1.739	-	1.739	1.058	1.030	1.047	1.028	Continuing	Continuing
0725: <i>Communication Automation</i>	13.194	6.805	1.739	-	1.739	1.058	1.030	1.047	1.028	Continuing	Continuing
1083: <i>Shore To Ship Com System</i>	18.963	20.089	-	-	-	-	-	-	-	0.000	39.052
9999: <i>Congressional Adds</i>	1.593	-	-	-	-	-	-	-	-	0.000	1.593

A. Mission Description and Budget Item Justification

The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for fleet tactical users. It includes Automated Digital Network System (ADNS), Tactical Switching Ashore, High Frequency Internet Protocol/Sub Network Relay. In Fiscal Year (FY) 10 and 11, begin Common Radio Room communications for requirements analysis, system design and the Mobile Networking High Band Increments 1 and 2.

ADNS is the method by which tactical Navy units transfer Internet Protocol (IP) data to Navy and Department of Defense communities on the Global Information Grid (GIG). ADNS serves as a gateway to enable joint and coalition interoperability for these tactical assets and ensures GIG connectivity. ADNS allows unclassified, secret, top secret traffic, and various joint, allied, and coalition services to reconnect to the Defense Information Systems Network ashore via radio paths and pier connectivity.

Tactical Switching Ashore will support the migration of the shore sites and their terrestrial interconnections into a coherent, scalable, network capability.

The Shore to Ship Communications System develops communication system elements which provide positive command and control of deployed submarines. The Shore to Ship Communications System which provides continuous assessment of the command and control links between the National Command Authority and missile platforms is conducted to ensure compliance with Nuclear Technical Performance Criteria (NTPC). The Shore to Ship Communications System addresses joint system design issues for Emergency Action Message (EAM) distribution to all nuclear platforms and provides evaluation of joint interoperability of EAM delivery systems. Tools are developed to provide strategic command and control planning within the submarine shore infrastructure to support deployed ballistic missile submarines.

FY12 funds will be used for ADNS development, an increase in Common Radio Room development and Mobile Networking High Band Increment 2.

Maritime Aerial Layer Network (MALN) Increment 1 (previously Mobile Networking High Band (MNH)) is the Navy solution set to support the Joint Aerial Layer Network (JALN). This collaborative effort will provide an overarching solution to fleet communications and networking requirements. MALN provides an advanced wideband communications network which was initiated in response to Littoral Combat Ship (LCS) requirements to communicate with off-board systems via a NAVSEA SBIR program. Inc. 1 will provide a networking radio designed to operate in an open ocean environment and support multiple naval platforms. This radio will provide a common wireless networking capability aboard LCS with applicability to other hull types, as well as other networked applications.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>
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Maritime Aerial Layer Network (MALN) Increment 2 is an advanced wideband communications network which will transport intelligence data, non-traditional Intelligence, Surveillance, and Reconnaissance (ISR) communications, and backbone network traffic using IP-based connectivity to achieve GIG (Global Information Grid) interoperability. It will achieve substantial spectral efficiency (frequency reuse) via narrow-beam antennas. Inc. 2 provides theater-wide connectivity to units outside degraded Satellite Communication areas. Features next generation directional antenna technology to support multiple node connections.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	36.799	26.894	25.758	-	25.758
Current President's Budget	33.750	26.894	1.739	-	1.739
Total Adjustments	-3.049	-	-24.019	-	-24.019
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.046	-			
• SBIR/STTR Transfer	-0.845	-			
• Program Adjustments	-	-	-23.981	-	-23.981
• Section 219 Reprogramming	-0.128	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.038	-	-0.038
• Congressional General Reductions Adjustments	-0.030	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Shipboard Automated Radio Room System*

	FY 2010	FY 2011
Congressional Add Subtotals for Project: 9999	1.593	-
Congressional Add Totals for all Projects	1.593	-

Change Summary Explanation

Technical: Project Unit 1083 was realigned from Program Element 0204163N to 0101402N

Schedule: ADNS: Operational Testing (OT) for ADNS INC III Surface and Ashore was conducted in 2nd Qtr FY10. INC III Surface and Ashore Full Rate Production was approved 1st Qtr FY11. INC III Submarine test events will occur in FY11 and FY12. System integration within the Common Submarine Radio

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0204163N: <i>Fleet Tactical Development</i>

Room (CSRR) will be ongoing in FY11 and early FY12. Additional interface design development and integration will occur with emerging SATCOM and RF paths.

NC3 LTS: The Request for Proposal (RFP) release was delayed from 4QFY10 to 2QFY11. As a result of the RFP delay, contract award, system design and development, Preliminary Design Review (PDR), Milestone C, system test events and system fielding were delayed accordingly.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>				PROJECT 0725: <i>Communication Automation</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0725: <i>Communication Automation</i>	13.194	6.805	1.739	-	1.739	1.058	1.030	1.047	1.028	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users.

Automated Digital Network System (ADNS) provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting naval, coalition and joint enclaves worldwide. ADNS utilizes off the shelf equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment (INC) II provides capabilities of load balancing, radio frequency restoral, initial quality of service to include application prioritization, initial traffic management, and enhancements designed to maximize use of available bandwidth for surface, shore, and airborne platforms. ADNS INC III converges all Navy tactical voice, video, and data requirements into a converged IP data stream. ADNS INC III interoperates with higher bandwidth satellites, supporting up to 25 mega bytes per second (Mbps) of throughput on unit level ships and up to 50 Mbps on force level ships. Increment III architecture also incorporates an IPv4/IPv6 dual stack and a cipher text security architecture to align to joint and coalition networks, in addition to greater security utilizing the High Assurance Internet Protocol (IP) Encryptor devices. ADNS INC III serves as the Navy tactical interface for IP Networking with Joint Tactical Radio System, and Advanced Extremely High Frequency. ADNS will investigate emerging technologies to integrate with additional Department of Defense C4I Programs to improve interstrike group networking and extend the network to the tactical edge.

The Tactical Switching Ashore (TSw) program rebuilds 1970s based shore high frequency based infrastructure to current and future scalable technical standards in order to provide a commercially standardized, technically compliant, and robust network. TSw is the shore component for Consolidated Afloat Networks and Enterprise Services. TSw will migrate the shore sites and their terrestrial interconnections into a coherent, scalable, network-centric capability. While leveraging off recent shore upgrades for the major shore communication regions, TSw will incorporate a system integrator approach to develop, design, and implement a plan to remove bandwidth limitations, create failover communication paths, provide secure and available communications, provide dynamic bandwidth management, and reduce costly dependencies on legacy systems. This plan is designed to increase efficiencies, and reduce manpower and the overall footprint of the Navy's shore sites. In addition, TSw will provide an enterprise-wide network operations capability providing full network situational awareness, network visualization, network management and control, and automation capabilities. TSw will bring new technologies and capabilities that converge legacy, circuit-based, communications to a standard, integrated, and interoperable IP network. This enabling system, of which United States Navy enterprise network (FORCEnet) is a part, supports the four pillars of Sea Power 21 by providing the infrastructure required to support collaborative decision-making, faster decision cycles, and shared superior situational awareness required for overseas contingency operations and to mitigate network vulnerabilities. FY10 completed development for the implementation of all-IP interoperability which will allow for the removal of the remaining legacy and Navy network architectures. TSw developed the end to end quality of service to provide global situational awareness, survivability, and bandwidth expansion to ensure a robust, reliable, scalable, sustainable, and dynamic failover global network architecture. TSw will develop the integration plan to maximize the DISN core for transport, route diversification, and distributed joint services to allow access anywhere via distributed services. Beginning in FY11, TSw has no developmental requirements.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>
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Maritime Aerial Layer Network (MALN) Increment 1 is the Navy solution set to support the Joint Aerial Layer Network (JALN). This collaborative effort will provide an overarching solution to fleet communications and networking requirements. MALN provides an advanced wideband communications network which was initiated in response to Littoral Combat Ship (LCS) requirements to communicate with off-board systems via a NAVSEA SBIR program. Increment 1 will provide a networking radio designed to operate in an open ocean environment and support multiple naval platforms. This radio will provide a common wireless networking capability aboard Littoral Combat Ship (LCS) with applicability to other hull types, as well as other networked applications.

Maritime Aerial Layer Network (MALN) Increment 2 is an advanced wideband communications network which will transport intelligence data, non-traditional Intelligence, Surveillance, and Reconnaissance (ISR) communications, and backbone network traffic using Internet Protocol (IP)-based connectivity to achieve Global Information Grid (GIG) interoperability. It will reuse frequencies via narrow-beam antennas. Increment 2 provides theater-wide connectivity to units outside degraded satellite communication areas. Features next generation directional antenna technology to support multiple node connections.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Automated Digital Network System (ADNS)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Conducted INC III Developmental Testing (DT), conducted Operational Testing (OT) of ADNS INC III and Joint Interoperability Test Command (JITC) Certification of ADNS INC III. Continued the development of dynamic Quality of Service (QoS)/Ethernet modems. Continued the development of the system modification of ADNS INC III for HAIPE integration. Continued the development of acquisition documents, specifications, and capability requirements for INC III Subs. Continued the system development and demonstration phase for ADNS INC III for submarines. Performed acceptance test for ADNS INC III Subs, and began the Common Submarine Radio Room (CSRR) integration effort. Continued the development of and update to system and subsystem interface designs for integration with new SATCOM and RF paths, as they emerged. Continued the research and evaluation of emergent technology maturity for inclusion into future capabilities developed for ADNS systems. The 5 procured units are submarine production representative units received from the vendor which were utilized for the ongoing efforts listed in FY10 plans.</p> <p>FY 2011 Plans: Develop Traffic Engineering via Multiprotocol Label Switching/Virtual Private Networks (MPLS-VPNs) to support advance load distribution in ADNS INC III. ADNS INC III will enhance joint and coalition interoperability through new network routing architectures. Continue the CSRR integration effort for ADNS INC III submarine systems, and conduct the Operational Assessment for ADNS INC III submarine systems. Evaluate technology insertion opportunities to provide ADNS capabilities will enhance network mobility for aircraft by developing a mobile ad hoc network (MANET) architecture. ADNS INC II and III will develop reduced size, weight and power (SWAP) designs for submarines, aircraft, and small vessels. Continue the development of updated system and subsystem interface designs for integration with new SATCOM and Radio Frequency (RF) paths, as</p>	<p>6.143</p> <p>5</p>	<p>3.154</p> <p>0</p>	<p>1.739</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
they emerge. Continue the research and evaluation of emergent technology maturity for inclusion into ADNS systems based on defined capabilities requirements. FY 2012 Plans: Complete the ADNS INC III system integration into the CSRR system. Conduct the Developmental Testing (DT), Operational Testing (OT) and Joint Interoperability Test Command (JITC) Certification of ADNS INC III Submarines. Continue the evaluation of technology insertion capabilities to the ADNS system to enhance network mobility for aircraft by developing a mobile ad hoc network (MANET) architecture.				
Title: Tactical Switching (Ashore) FY 2010 Accomplishments: Completed development for the implementation of ALL-Internet Protocol (IP) interoperability which will allow for the removal of legacy and Navy unique network architectures. Additionally, TSw developed the end to end Quality of Service (QoS) to provide global situational awareness, survivability, and bandwidth expansion to ensure a robust, reliable, scalable, sustainable, and dynamic failover for a global network architecture.		Articles: 2.333 0	-	-
Title: Martime Aerial Layer Network Inc 1 FY 2010 Accomplishments: Initiated acquisition documentation and Analysis of Alternatives (AoA). FY 2011 Plans: Continue system development, testing, demonstration and technical assessment of various systems for consideration in Joint Aerial Layer Network (JALN) Analysis of Alternatives (AoA). Completion of AoA in support of JALN.		Articles: 1.533 0	0.937 0	-
Title: Martime Aerial Layer Network Inc 2 FY 2010 Accomplishments: Initiated acquisition documentation and Analysis of Alternatives (AoA). Conducted technology demonstration. FY 2011 Plans: Continue system development, testing, demonstration and technical assessment of various systems for consideration in Joint Aerial Layer Network (JALN) Analysis of Alternatives (AoA). Completion of AoA in support of JALN.		Articles: 2.406 0	2.714 0	-
Title: Battle Force Tactical Network (BFTN) (Formerly High Frequency Internet Protocol/SubNet Relay (SNR/HFIP))		0.779	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Articles:	0		
FY 2010 Accomplishments: Completed Test and Evaluation Master Plan (TEMP) and Operation Assessment (OA) event.			
Accomplishments/Planned Programs Subtotals	13.194	6.805	1.739

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/3050/1: <i>Ship Comm Auto-ADNS</i>	34.772	50.529	53.613	0.000	53.613	48.641	38.456	38.197	37.262	Continuing	Continuing
• OPN/3050/2: <i>Ship Comm Auto-Tactical Switching</i>	27.175	22.672	22.836	0.000	22.836	11.832	10.911	11.519	11.701	Continuing	Continuing
• OPN/3057: <i>Comm Items Under \$5M-BFTN</i>	17.300	8.677	9.296	0.000	9.296	5.261	0.000	0.000	0.000	0.000	40.534
• OPN/3415: <i>Info Sys Sec Prgm-ADNS SCIP IWF</i>	8.601	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.057

D. Acquisition Strategy

Automated Digital Network System (ADNS): Evolutionary acquisition approach with overlapping development and implementation phases for defined Increment I, II, and III baselines. Increment I, II, and III will use competitively awarded contracts to implement changes consistent with acquisition initiatives. ADNS leverages Commercial Off The Shelf (COTS) products while capitalizing on acquisition reform initiatives to achieve material savings in the logistics, installation, integration and training areas. Where feasible, differing types of advantageous contract vehicles will be used to provide flexibility, decreased contract administrative costs, and encourage acquisition streamlining through the use of COTS products.

Tactical Switching Ashore: Evolutionary acquisition approach with overlapping development and implementation increments. Use existing contract vehicles during Increment I implementation of procurement upgrades to existing shore legacy equipment at the major communication centers (Naval Computer & Telecommunications Area Master Station (NCTAMS) Pacific (PAC), NCTAMS Atlantic (LANT), NCTAMS Europe Central (EURCENT), Naval Computer & Telecommunications Station (NCTS) Bahrain, and NCTS San Diego) and to include 40+ shore communication facilities (Communication Stations (COMSTATIONS), Naval Operations Centers (NOCs), Mini-NOCs, and Standard Tactical Data Entry Point (STEP) sites). Increment I upgrades serve as an enabler to Increment II activities. Based upon the future shore communication architecture as defined by the Navy, Increment II transitions the Navy's two NCTAMS and three major Network Control Terminal (NCT) Shore infrastructure to a two regional network operations and security center (RNOSC) and one global network operations and security center (GNOSC) concept to achieve a Joint/Department of Defense (DoD) Net-Centric environment through FY16. Increment II will be organized into two steps. Each step will build upon the previous step and serve as risk mitigation for the succeeding step. This strategy provides flexibility in a rapidly evolving technology environment and allows earlier implementation of

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0204163N: <i>Fleet Tactical Development</i>	0725: <i>Communication Automation</i>

developmental technology as it becomes available. Tactical Switching will maximize the Defense Information Systems Network (DISN) Core for unified Navy transport, allowing for route diversification and distributed joint services allowing access anywhere via distributed services.

Maritime Aerial Layer Network (MALN) will utilize an incremental approach to address capability gap analysis/studies. Continue to provide technical and acquisition support in support of Joint Aerial Layer Network (JALN) Analysis of Alternatives (AoA). Technical support includes conducting experiments, performing technical assessments and evaluations for AoA consideration. Completion of AoA in support of JALN.

E. Performance Metrics

ADNS - Included in the ADNS program goals are the improvements to bandwidth throughput, to connectivity to multiple Radio Frequency (RF) paths, greater security, and system capability delivered within a smaller form factor. The ADNS program will, at a minimum, provide bandwidth throughput enhancements resulting in an increase from 2Mbps to 25 Mbps. ADNS will also provide the ability to transport data across multiple paths simultaneously vice the current limitations of single or secondary paths. ADNS will reduce the rack unit (U) requirement from 81U to 54U and investigate the ability to reduce this Unit allocation for smaller Navy platforms. ADNS will provide greater security posture by encrypting each enclave, and securing the core via cipher text.

Tactical Switching - Provide Evaluation, Research and Design for Joint IP Shore C4ISR Architectures. Leverages COTS technology to achieve Navy NetOps-Enterprise Network Management in support of FORCEnet. Efforts include Design of Infrastructure, Operational Testing, Network Control, Independent Verification & Validation Agent, Configuration Management, Analysis and Assessment support, Risk Management, Modeling and Simulation, Test Planning/Testing QA, System Engineering, and I/A Support. Metric: Numerous potential integration catastrophes have been mitigated.

MALN - Reduce the number of Network Communications capability gaps, in a SATCOM denied environment, to technology gaps.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	PO	SSC:PAC/LANT	1.025	-		-		-		-	0.000	1.025	
Primary Hardware Development	C/CPFF	Northrop Grumman:McLean, Virginia	7.793	-		-		-		-	0.000	7.793	
Primary Hardware Development	C/CPFF	General Dynamics:Maryland	17.909	-		-		-		-	0.000	17.909	
Primary Hardware Development	C/CPFF	SRA:San Diego	0.016	-		-		-		-	0.000	0.016	
Primary Hardware Development	C/FFP	Boeing:Washington State	1.347	-		-		-		-	0.000	1.347	
Primary Hardware/Software	C/CPFF	Air Force:Various	2.078	-		-		-		-	0.000	2.078	
Primary Hardware/Software	C/CPFF	RSS/Harris:Melbourne, FL	0.324	-		-		-		-	0.000	0.324	
Integration and Test	C/CPFF	RSS/Harris:Melbourne, FL	0.400	-		-		-		-	0.000	0.400	
Integration and Test	WR	SSC:PAC/LANT	1.157	-		-		-		-	0.000	1.157	
Integration and Test	C/CPFF	VAR:Various	0.079	-		-		-		-	0.000	0.079	
Systems Engineering-ADNS	WR	SSC:PAC/LANT	21.904	0.210	Nov 2010	0.144	Nov 2011	-		0.144	Continuing	Continuing	Continuing
Systems Engineering	Various	VAR:Various	6.096	-		-		-		-	0.000	6.096	
Systems Engineering	MIPR	CECOM (MITRE):New Jersey	0.585	-		-		-		-	0.000	0.585	
Systems Engineering-ADNS	WR	NUWC:Newport, RI	0.969	0.460	Dec 2010	0.315	Dec 2011	-		0.315	0.000	1.744	
Prime Mission Product	PO	SSC:PAC/LANT	4.353	-		-		-		-	0.000	4.353	
Integration and Test-ADNS	WR	NUWC:Newport	-	0.821	Nov 2010	0.341	Nov 2011	-		0.341	0.000	1.162	
Systems Engineering	C/CPFF	Boeing:Washington State	-	2.087	Jan 2011	-		-		-	0.000	2.087	
Integration and Test-ADNS	WR	SSC:PAC/LANT	-	0.464	Feb 2011	-		-		-	0.000	0.464	
Integration and Test-MALN INC II	WR	SSC:PAC/LANT	-	0.300	Feb 2011	-		-		-	0.000	0.300	
Systems Engineering-ADNS	C/CPFF	Solute:San Diego	-	0.253	Oct 2010	-		-		-	0.000	0.253	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			66.035	4.595		0.800		-		0.800			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Support	WR	SSC:PAC/LANT	0.160	-		-		-		-	0.000	0.160	
Software Development	Various	VAR:Various	7.250	-		-		-		-	0.000	7.250	
Integrated Logistics Support-ADNS	WR	SSC:PAC/LANT	0.060	0.078	Nov 2010	-		-		-	0.000	0.138	
Integrated Logistics Support	Various	VAR:Various	1.150	-		-		-		-	0.000	1.150	
Documentation	Various	VAR:Various	0.706	-		-		-		-	0.000	0.706	
Technical Data	Various	VAR:Various	0.500	-		-		-		-	0.000	0.500	
Studies and Analysis	WR	SSC:PAC/LANT	0.960	-		-		-		-	0.000	0.960	
Subtotal			10.786	0.078		-		-		-	0.000	10.864	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test & Evaluation-ADNS	WR	SSC:PAC/LANT	6.544	0.115	Nov 2010	-		-		-	0.000	6.659	
Developmental Test & Evaluation-ADNS	MIPR	JTIC:Fort Huachuca, AZ	0.244	0.130	Oct 2010	0.254	Oct 2011	-		0.254	0.000	0.628	
Operational Test & Evaluation-ADNS	WR	COMOPTEVOR:Norfolk, VA	1.143	0.249	Nov 2010	0.254	Nov 2011	-		0.254	0.000	1.646	
Operational Test & Evaluation	Various	VAR:Various	4.955	-		-		-		-	0.000	4.955	
Developmental Test & Evaluation-MALN INC I	WR	SSC:PAC/LANT	-	0.544	Jan 2011	-		-		-	0.000	0.544	
	WR	SSC:PAC/LANT	-	0.550	Jan 2011	-		-		-	0.000	0.550	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation-MALN INC II													
Subtotal			12.886	1.588		0.508		-		0.508	0.000	14.982	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	VAR:Various	0.546	-		-		-		-	0.000	0.546	
Government Engineering Support	WR	SSC:PAC/LANT	0.817	-		-		-		-	0.000	0.817	
Program Management Support	C/CPAF	VAR:Various	8.363	-		-		-		-	0.000	8.363	
Program Management Support	C/CPAF	BAH:McLean, Virginia	0.122	0.170	Jan 2011	-		-		-	0.000	0.292	
Acquisition Workforce	Various	VAR:Various	0.055	-		-		-		-	0.000	0.055	
Contractor Engineering Support	C/CPFF	X-FEDS:San Diego	-	0.130	Oct 2010	0.130	Oct 2011	-		0.130	0.000	0.260	
Program Management Support	C/CPFF	Solute:San Diego	-	0.244	Oct 2010	0.301	Nov 2011	-		0.301	0.000	0.545	
Subtotal			9.903	0.544		0.431		-		0.431	0.000	10.878	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		99.610	6.805		1.739		-	1.739			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>
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																				PROJECT NUMBER AND NAME 0725 COMMUNICATIONS AUTOMATION - ADNS								
Fiscal Year	2010				2011				2012				2013				2014				2015				2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones			IOC INC III ▲		FRPDR INC III ▲																							
System Development		PDR INC III Subs ▲	CDR INC III Subs ▲																									
	System Development																											
	Interface Design Development and Integration with Future SATCOM and Radio Frequency (RF) paths																											
Test & Evaluation Milestones																												
Development Test		DT INC III ▲																										
Operational Test			OT INC III ▲																									
Production																												
	Fielding & Sustainment - INC II/IIa/IIb/ Airborne																											
	INCR III - LRIP Fielding and Sustainment																											
	Fielding & Sustainment INC III Surface																											
	Fielding & Sustainment INC III Subs																											
Deliveries																												
			3 Sub First Articles and 2 BCAs INC III Subs ▲																									

EXHIBIT R4, Schedule Profile

Note 1: Fielding and sustainment block for INC II was expanded to include Airborne platforms. FOC delivery is expected in Q1FY13.
 Note 2: ADNS INC III Surface and Ashore Full Rate Production Design Review (FRPDR) has been updated from Q4FY11 to Q1FY11.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 0725: <i>Communication Automation</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0725				
ADNS: INCREMENT III_Interface Design Development with SATCOM and Radio Frequency (RF) paths	1	2010	4	2016
ADNS: INCREMENT III_Fielding and Sustainment Inc III Surface	1	2012	4	2016
ADNS: INCREMENT III_Subs Preliminary Design Review (PDR)	1	2010	1	2010
ADNS: INCREMENT III_Subs Critical Design Review (CDR)	2	2010	2	2010
ADNS: INCREMENT III_Subs Acceptance Test	3	2010	3	2010
ADNS: INCREMENT III_Subs Deliver 3 Sub First Articles and 2 BCAs	3	2010	3	2010
ADNS: INCREMENT III_Subs Test Asset Decision	3	2011	3	2011
ADNS: INCREMENT III_Subs Developmental Testing (DT)	3	2012	3	2012
ADNS: INCREMENT III_Subs Operational Testing (OT)	4	2012	4	2012
ADNS: INCREMENT III_Fielding Decision	1	2013	1	2013
ADNS: INCREMENT III_Subs Fielding and Sustainment	1	2013	4	2016
ADNS: INCREMENT II_ Full Operational Capability	1	2013	1	2013
ADNS: INCREMENT IIa_Fielding and Sustainment (Inc II/IIa/IIb) Airborn	1	2010	1	2013
ADNS: INCREMENT III_System Development	1	2010	3	2010
ADNS: INCREMENT III_Low Rate Initial Production (LRIP) Fielding & Sustainment	1	2010	4	2011
ADNS: INCREMENT III_Developmental Testing (DT)	1	2010	1	2010
ADNS: INCREMENT III_OperationalTesting (OT)	2	2010	2	2010
ADNS: INCREMENT III_Full Rate Production Decision Review (FRPDR)	1	2011	1	2011
ADNS: INCREMENT III_Initial Operational Capability	4	2010	4	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1083: <i>Shore To Ship Com System</i>	18.963	20.089	-	-	-	-	-	-	-	0.000	39.052
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Beginning in FY12, the efforts in this project are funded in PE 0101402N.

A. Mission Description and Budget Item Justification

This program develops communication system elements which provide positive Nuclear Command, Control and Communications (NC3) from originator to shooter. This portfolio of programs provides design and development for shore-to-ship transmit and receive communications systems.

The Low Band Universal Communications System (LBUCS) is the modernization program that will upgrade the Transmit and Receive subsystems of the Fixed Submarine Broadcast System (FSBS) which are approaching their operational end of life. LBUCS will ensure operational capability through the Very Low Frequency (VLF) architecture by providing system life extension and flexibility of submarine broadcast traffic to the submarine in stealth posture. The flexibility includes enhanced throughput and anti-jam capability, ensuring more operational products are delivered to a submarine without risking mast exposure. The flexibility further includes simplified shore architecture to maintain capability while maximizing use of shore nodes (Broadcast Keying Sites). LBUCS also provides an upgrade to the VLF receive system to ensure continued compliance with Nuclear Technical Performance Criteria.

The Nuclear Command, Control and Communications (NC3) Long-Term Solution (LTS) will replace the shore-based, nuclear command and control (NC2) message dissemination infrastructure of the NC3 Hybrid Solution while addressing capability gaps identified in the NC3 LTS Capability Based Analysis. The mission of the NC3 LTS is to provide a reliable, secure, timely and robust messaging capability between Senior Leadership (The President of the United States, Secretary of Defense, and Chairman of the Joint Chiefs of Staff), Combatant Commanders and United States nuclear force elements. Specifically, the NC3 LTS shall support the dissemination of Emergency Action Messages and other NC2 messages.

The Strategic Communications Assessment Program /Continued Evaluation Program provides constant assessment of the effectiveness of the end-to-end Nuclear Command and Control network and analysis of system performance in various mission locations.

Concept Development/System Planning provides Network Enabled Operation (NEO) that addresses Allied interoperability issues for submarine communications in an Internet Protocol (IP) environment. As new technologies are realized, coalition architectures are developed and tested to ensure continued interoperability. Concept Development/System Planning also provides for the modeling of unique Very Low Frequency/Low Frequency (VLF/LF) submarine communications which include large physical shore broadcast antennas and underwater depth penetration studies. The results of Concept Development/System Planning are reflected in future Broadcast Control Authority /Operational Control planning tools. Technologies to improve high voltage insulators, helix house bushings and antenna components used in the Fixed VLF transmit systems are evaluated and tested through the High Voltage Improvement Program. Development of Information Assurance solutions for the Broadcast Control Authority (BCA) and Submarine Operating Authority Wide Area Network are being investigated to mitigate vulnerability concerns.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>Title: Low Band Universal Communication System (LBUCS)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Contractor continued development effort of LBUCS Production Representative Article (PRA) transmit hardware and software. Commenced Capabilities Production Document (CPD) development for transmit terminal in support of Milestone C. Completed Preliminary Design Review for transmit terminal. Continued updating acquisition documentation for Milestone C. Commenced preparations of acquisition documentation for receive terminal.</p> <p>FY 2011 Plans: Complete Critical Design Review and Technology Readiness Review for transmit terminal. Continue development of acquisition documentation for Milestone C. Continue development of CPD and Information Support Plan (ISP) for transmit terminal. Continue PRA development.</p>		8.828 0	7.067 0	-
<p>Title: Nuclear Command, Control, Communications Long Term Solution (NC3 LTS)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Completed development of Request For Proposal/System Performance Specification. Continued development of Test and Evaluation Master Plan (TEMP). Continued preparation of Milestone B acquisition documentation. Completed Capability Development Document (CDD) Navy review.</p> <p>FY 2011 Plans: Release Request for Proposal/System Performance Specification to industry. Complete TEMP. Complete CDD. Complete MS B.</p>		4.642 0	7.708 0	-
<p>Title: Strategic Communications Assessment Program (SCAP)/Continuing Evaluation Program (CEP)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Continued strategic communications capabilities and deficiencies assessment for evaluation of Nuclear Strategic Communications and Emergency Action Message (EAM) delivery.</p> <p>FY 2011 Plans: Conduct mission analysis of E-6B Mercury aircraft transmission and Ship Submersible Ballistic Nuclear Submarine (SSBNs) EAM reception for a sample of SSBN patrols. Provide reports on performance, adherence to delivery time requirements and shortfalls. Develop automated data collection and analysis tools to reduce latency time between missions and results availability.</p>		3.584 0	3.600 0	-
<p>Title: Concept Development/Systems Planning</p> <p align="right">Articles:</p>		0.944 0	0.850 0	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p><i>FY 2010 Accomplishments:</i> Continued the integration of Joint/Allied Network Enabled Operation (NEO) with other FORCEnet applications.</p> <p><i>FY 2011 Plans:</i> Conduct US/UK developmental testing between US and UK Submarine Operating Authority (SUBOPAETH) to validate NEO interoperability concepts.</p>				
<p><i>Title:</i> High Voltage Improvement Program</p> <p align="right"><i>Articles:</i></p> <p><i>FY 2010 Accomplishments:</i> Completed examination of ultra quick cut off devices to prevent overload conditions. Continued examination of nanocrystalline ferrites to reduce the loss and size of helix enclosures.</p> <p><i>FY 2011 Plans:</i> Complete the study of new ferrites to reduce the loss and size of helix enclosures. Commence the examination of the new ferrites to dynamic tuning elements with the goal of lowering of shore antenna frequencies allowing for greater broadcast signal in seawater depth penetration.</p>		0.516 0	0.486 0	-
<p><i>Title:</i> Broadcast Control Authority</p> <p align="right"><i>Articles:</i></p> <p><i>FY 2010 Accomplishments:</i> Continued development of Submarine Operating Authority (SUBOPAETH) communications tools.</p> <p><i>FY 2011 Plans:</i> Continue development of water space management and messaging automation support tools, integrate into SUBOPAETH toolset, and deliver to the fleet.</p>		0.449 0	0.378 0	-
Accomplishments/Planned Programs Subtotals		18.963	20.089	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/3107: <i>Submarine Broadcast Support</i>	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Low Band Universal Communications System (LBUCS): LBUCS is the modernization program that will upgrade the Transmit and Receive subsystems of the Fixed Submarine Broadcast System which are approaching their operational end of life. A cost plus incentive fee contract was awarded for Transmit subsystem development in 4Q FY09 with three sequential fixed price options Contract Line Item Numbers for production and deployment. The development of LBUCS Receive will commence in FY13.

The Nuclear Command, Control and Communications Long Term Solution (NC3 LTS): NC3 LTS will provide accurate and reliable delivery of time-critical messages for the nuclear forces by developing a Dedicated IP Network utilizing Defense Information Systems Network circuits. Milestone B for the program is projected in 4QFY11 with Milestone C occurring in 4QFY14. Contract planning activities commenced in 4QFY09, leading to a Request for Proposal release in 2QFY11 and corresponding contract award in 2QFY12. Full Operational Capability is expected in 4QFY17.

E. Performance Metrics

LBUCS: Take delivery of Transmit Production Representative Article. Complete transmit acquisition documentation and Capabilities Production Document for Milestone C. Commence transmit system Developmental Testing/Operational Assessment.

NC3 LTS: Award contract for system design and development. Complete Preliminary Design Review.

Strategic Communications Assessment Program/Continuing Evaluation Program: Delivery of patrol reports and development plan for automated data collection and analysis toolset.

Concept Development: Delivery of Network Enabled Operations testing scenarios and shore architecture design to support shore to submarine testing scenarios.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	SSC PAC:San Diego, CA	18.861	-		-		-		-	0.000	18.861	
Ancillary Hardware Development	WR	SSC PAC:SSC PAC	2.316	-		-		-		-	0.000	2.316	
Systems Engineering	WR	SSC PAC:San Diego, CA	50.733	-		-		-		-	0.000	50.733	
Systems Engineering	WR	NUWC Newport:Newport, RI	13.471	-		-		-		-	0.000	13.471	
SCAP/CEP: Systems Engineering	C/CPFF	APL/JHU:Baltimore, MD	43.049	2.100	Dec 2010	-		-		-	0.000	45.149	
LBUCS: Systems Engineering	WR	SSC LANT:Charleston, SC	-	0.475	Oct 2010	-		-		-	0.000	0.475	
LBUCS: Primary Hardware Development	C/CPFF	SAIC:San Diego, CA	6.183	4.157	Nov 2010	-		-		-	0.000	10.340	
NC3LTS: Systems Engineering	MIPR	U.S. Army:Monmouth, NJ	7.622	1.620	Oct 2010	-		-		-	0.000	9.242	
NC3LTS: Ancillary Hardware Development	WR	SSC PAC:SSC PAC	-	0.589	Oct 2010	-		-		-	0.000	0.589	
Shore to Ship: Ancillary Hardware Development	WR	SSC PAC:San Diego, CA	-	0.147	Nov 2010	-		-		-	0.000	0.147	
Shore to Ship: Systems Engineering	WR	SSC PAC:San Diego, CA	-	0.222	Nov 2010	-		-		-	0.000	0.222	
Subtotal			142.235	9.310		-		-		-	0.000	151.545	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	SSC Pacific:San Diego, CA	4.853	-		-		-		-	0.000	4.853	
Software Development	WR	SSC Pacific:San Diego, CA	11.912	-		-		-		-	0.000	11.912	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition/Program Development	C/CPFF	CSA:San Diego, CA	1.506	-		-		-		-	0.000	1.506	
Technical Data	SS/CPFF	ANSOL:San Diego, CA	2.822	-		-		-		-	0.000	2.822	
Development Support	WR	SSC PAC:San Diego, CA	2.701	-		-		-		-	0.000	2.701	
LBUCS: Logistics Support	C/CPFF	TCI:Alfreda, GA	1.390	0.326	Oct 2010	-		-		-	0.000	1.716	
LBUCS: Information Assurance Support	C/CPFF	MERDAN:San Diego, CA	-	0.158	Oct 2010	-		-		-	0.000	0.158	
LBUCS: Information Assurance Support	WR	SSC PAC:San Diego, CA	-	0.229	Oct 2010	-		-		-	0.000	0.229	
LBUCS: Technical Data	C/CPFF	ANSOL:San Diego, CA	-	0.158	Oct 2010	-		-		-	0.000	0.158	
LBUCS: Acquisition/Program Development	C/CPFF	CSA:San Diego, CA	-	0.728	Oct 2010	-		-		-	0.000	0.728	
NC3LTS: Information Assurance Support	C/CPFF	MERDAN:San Diego, CA	-	0.375	Oct 2010	-		-		-	0.000	0.375	
NC3LTS: Technical Data	C/CPFF	ANSOL:San Diego, CA	-	0.884	Oct 2010	-		-		-	0.000	0.884	
NC3LTS: Acquisition/Program Development	C/CPFF	CSA:San Diego, CA	-	1.208	Oct 2010	-		-		-	0.000	1.208	
NC3LTS: Logistics Support	C/CPFF	TCI:Alfreda, GA	-	0.972	Oct 2010	-		-		-	0.000	0.972	
Shore to Ship: Software Development	WR	SSC PAC:San Diego, CA	-	0.229	Oct 2010	-		-		-	0.000	0.229	
Shore to Ship: Studies and Design	WR	SSC PAC:San Diego, CA	-	0.386	Oct 2010	-		-		-	0.000	0.386	
Shore to Ship: Acquisition/Program Development	WR	SSC PAC:San Diego, CA	-	0.207	Oct 2010	-		-		-	0.000	0.207	
Shore to Ship: Broadcast Control Authority	C/CPFF	Predicate Logic:San Diego, CA	-	0.524	Oct 2010	-		-		-	0.000	0.524	
Subtotal			25.184	6.384		-		-		-	0.000	31.568	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SCAP/CEP: Strategic OP Systems Performance Evaluation	C/CPFF	APL/JHU:Baltimore, MD	22.509	1.500	Dec 2010	-		-		-	0.000	24.009	
LBUCS: System Testing	WR	COTF:Norfolk, VA	8.855	0.177	Oct 2010	-		-		-	0.000	9.032	
LBUCS: System Testing	WR	SSC PAC:San Diego, CA	-	0.238	Oct 2010	-		-		-	0.000	0.238	
NC3LTS: System Testing	WR	COTF:Norfolk, VA	-	0.206	Oct 2010	-		-		-	0.000	0.206	
Subtotal			31.364	2.121		-		-		-	0.000	33.485	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Engineering Support	MIPR	U.S. Army:Monmouth, NJ	1.777	-		-		-		-	0.000	1.777	
LBUCS: Program Management Support	WR	SSC PAC:San Diego, CA	4.886	0.404	Oct 2010	-		-		-	0.000	5.290	
LBUCS:Travel	WR	SSC PAC:San Diego, CA	0.250	0.016	Oct 2010	-		-		-	0.000	0.266	
NC3 LTS: Government Engineering Support	WR	SSC PAC:San Diego, CA	2.277	1.805	Oct 2010	-		-		-	0.000	4.082	
NC3: Travel	WR	SSC PAC:San Diego, CA	-	0.049	Oct 2010	-		-		-	0.000	0.049	
Subtotal			9.190	2.274		-		-		-	0.000	11.464	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		207.973	20.089	-	-	0.000	228.062	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>
PROJECT 1083: <i>Shore To Ship Com System</i>	

EXHIBIT R4, Schedule Profile <small>Low Band Universal Communication System (LBUCS)</small>																														DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7					PROGRAM ELEMENT NUMBER AND NAME 0204163N FLEET TACTICAL DEVELOPMENT																PROJECT NUMBER AND NAME 1083 SHORE TO SHIP COM SYSTEM-LBUCS											
Fiscal Year	2010				2011				2012				2013				2014				2015				2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones LBUCS Transmit											▲																					
LBUCS Receive																																
Requirements Definition LBUCS Transmit			▲									▲																				
Contractual Milestones/Timeline LBUCS Transmit		▲			▲							▲																				
LBUCS Receive																																
Test & Evaluation											▲				▲	▲																
Equipment Procurement LBUCS Transmit																																
LBUCS Receive																																

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0204163N: Fleet Tactical Development

PROJECT

1083: Shore To Ship Com System

Fiscal Year	2010				2011				2012				2013				2014				2015				2016											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Acquisition Milestones Nuclear Command, Central Communications System Long Term Solution								▲ MB-B				▲ PDR				▲ CDR								▲ MB-C								▲ FRP DR				
Requirements Definition				▲						▲						▲																				
Contractual Milestones/Timelines		▲ PPSM				▲ RFP				▲ CA										▲																
Test & Evaluation:																				▲ DT-S1				▲ IT-S1												
Equipment																								▲ LRIP												▲ FRP

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1083				
LBUCS: Milestone-C (MS-C)	3	2012	3	2012
LBUCS: Full Rate Production Milestone (FRP) - Transmit	3	2013	3	2013
LBUCS: Initial Operational Capability (IOC) - Transmit	3	2013	3	2013
LBUCS: Production Representative Article Program Review (PRA PR) - Receive	1	2013	1	2013
LBUCS: Fielding Program Review (FPR) - Receive	2	2015	2	2015
LBUCS: Capability Production Document (CPD)	3	2010	1	2012
LBUCS: Production Design Review (PDR) - Transmit	3	2010	3	2010
LBUCS: Critical Design Review (CDR) - Transmit	1	2011	1	2011
LBUCS: Technology Readiness Review (TRR) - Transmit	1	2012	1	2012
LBUCS: Production Representative Article (PRA) - Transmit	1	2010	2	2012
LBUCS: Production Representative Article (PRA) - Receive	1	2013	4	2014
LBUCS: Production Design Review (PDR) - Receive	3	2013	3	2013
LBUCS: Critical Design Review (CDR) - Receive	1	2014	1	2014
LBUCS: Developmental Test/Operational Assesment (DT/OA) - Transmit	2	2012	2	2012
LBUCS: Developmental Test/Technical Evaluation (DT/TE) - Transmit	1	2013	1	2013
LBUCS: Operational Test (OT) - Transmit	2	2013	2	2013
LBUCS: Developmental Test (DT) - Receive	1	2015	1	2015
LBUCS: Low Rate Initial Production (LRIP) - Transmit	1	2013	1	2013
LBUCS: Full Rate Production (FRP) - Transmit	4	2013	4	2015
LBUCS: Full Rate Production (FRP) - Receive	3	2015	4	2016
NC3 LTS: Milestone-B (MS-B)	4	2011	4	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 1083: <i>Shore To Ship Com System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NC3 LTS: Production Design Review (PDR)	4	2012	4	2012
NC3 LTS: Critical Design Review (CDR)	2	2013	2	2013
NC3 LTS: Milestone-C (MS-C)	4	2014	4	2014
NC3 LTS: Full Rate Production Design Review (FRP DR)	3	2016	3	2016
NC3 LTS: Capabilities Design Document (CDD)	1	2010	1	2011
NC3 LTS: Capability Production Document (CPD)	3	2012	4	2013
NC3 LTS: Procurement Planning and Strategy Meeting (PPSM)	3	2010	3	2010
NC3 LTS: Request For Proposal (RFP)	2	2011	2	2011
NC3 LTS: Contract Award (CA)	2	2012	2	2012
NC3 LTS: Production Representative Article (PRA)	2	2012	2	2014
NC3 LTS: Test & Evaluation Master Plan (TEMP)	1	2010	3	2011
NC3 LTS: Developmental Test Pre Milestone-C (DT)	2	2014	3	2014
NC3 LTS: Integrated Testing/Operational Testing (IT/OT)	3	2014	4	2014
NC3 LTS: Developmental Test Post Milestone-C (DT)	3	2015	4	2015
NC3 LTS: Integrated Test (IT)	4	2015	1	2016
NC3 LTS: Operational Test (OT)	1	2016	2	2016
NC3 LTS: Low Rate Initial Production (LRIP)	1	2015	2	2015
NC3 LTS: Full Rate Production (FRP)	3	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204163N: <i>Fleet Tactical Development</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	1.593	-	-	-	-	-	-	-	-	0.000	1.593
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Shipboard Automated Radio Room System researches reduced manning and training requirements to operate a radio room by using an existing, recently developed, automated integrated communications software. This program will validate that a single operator, in minutes, can replace what took several operators hours to complete, while significantly improving reliability.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Shipboard Automated Radio Room System	1.593	-
FY 2010 Accomplishments: Research the Automation, Monitoring, and Control (AM&C) functionality to be used to address the needs for a Shipboard Automated Radio Room System (currently identified for implementation as part of the Common Radio Room [CRR] initiative). Award contracts to industry with expertise in radio room automation technologies to collect data to be used in the AM&C functional requirements, design, and development. Derive AM&C system functional requirements necessary to achieve the goal of empowering a single operator to perform the activities of multiple operators in less time and with greater accuracy.		
Congressional Adds Subtotals	1.593	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204228N: <i>Surface Support</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	-	3.377	-	3.377	4.173	2.974	2.773	2.376	Continuing	Continuing
3311: <i>Navigation Systems</i>	-	-	3.377	-	3.377	4.173	2.974	2.773	2.376	Continuing	Continuing

Note

This program is a new start in FY 2012.

A. Mission Description and Budget Item Justification

The Surface Support RDT&E funding will be used for the research, design, development, integration testing, and documentation of a new AN/WSN-7 Inertial Measuring Unit (IMU) to support the Ballistic Missile Defense (BMD) mission. The program will implement systems engineering processes to identify specific BMD performance requirements, investigate major navigation system error sources, define new IMU functions, research new INS technologies, algorithms, and techniques to improve system performance, conduct analyses of alternatives, create preliminary and final design concepts, develop new hardware components and associated software, and conduct land based and shipboard testing.

The AN/WSN-7(V) RLGN is a legacy, 1980's design that was first installed in 1998 and is now obsolete. The design is reaching its limit with respect to providing the high-accuracy navigation solution required to meet known and emerging mission requirements. Navigator of the Navy's Vision 2025 identifies emergent requirements with respect to improved navigation in a GPS denied environment, littoral warfare, mine countermeasures, and manned and unmanned vehicle operations that cannot be met with existing systems. The AN/WSN-7(V) Ring Laser Gyro Navigator (RLGN) system is a self-contained inertial navigator designed for U.S. Navy surface ships. The RLGN employs an Inertial Measuring Unit (IMU) with three single-axis ring laser gyros that allow the system to provide continuous and automatic data outputs of the ship's geographic position (latitude, longitude), horizontal and vertical linear velocity (V_e, V_n, V_v), attitude (heading, roll, and pitch) and attitude rates. The RLGN provides mission critical ship's position and attitude data to shipboard sensors (such as radars), combat systems, gun and missile systems. The RLGN uses data from the Global Positioning System (GPS) to periodically update (i.e., reset) its position and internal clock. The RLGN is the ship's primary position source in absence of GPS.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204228N: <i>Surface Support</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	3.377	-	3.377
Total Adjustments	-	-	3.377	-	3.377
• Congressional General Reductions					
• Congressional Directed Reductions					
• Congressional Rescissions	-	-			
• Congressional Adds					
• Congressional Directed Transfers					
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	3.379	-	3.379
• Rate/Misc Adjustments	-	-	-0.002	-	-0.002

Change Summary Explanation

Technical: New start in FY 2012.
Schedule: New start in FY 2012.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204228N: <i>Surface Support</i>	PROJECT 3311: <i>Navigation Systems</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3311: <i>Navigation Systems</i>	-	-	3.377	-	3.377	4.173	2.974	2.773	2.376	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

This program is a new start in FY 2012.

A. Mission Description and Budget Item Justification

The Surface Support RDT&E funding will be used for the research, design, development, integration testing, and documentation of a new AN/WSN-7 Inertial Measuring Unit (IMU) to support the Ballistic Missile Defense (BMD) mission. The program will implement systems engineering processes to identify specific BMD performance requirements, investigate major navigation system error sources, define new IMU functions, research new INS technologies, algorithms, and techniques to improve system performance, conduct analyses of alternatives, create preliminary and final design concepts, develop new hardware components and associated software, and conduct land based and shipboard testing.

The AN/WSN-7(V) RLGN is a legacy, 1980's design that was first installed in 1998 and is now obsolete. The design is reaching its limit with respect to providing the high-accuracy navigation solution required to meet known and emerging mission requirements. Navigator of the Navy's Vision 2025 identifies emergent requirements with respect to improved navigation in a GPS denied environment, littoral warfare, mine countermeasures, and manned and unmanned vehicle operations that cannot be met with existing systems. The AN/WSN-7(V) Ring Laser Gyro Navigator (RLGN) system is a self-contained inertial navigator designed for U.S. Navy surface ships. The RLGN employs an Inertial Measuring Unit (IMU) with three single-axis ring laser gyros that allow the system to provide continuous and automatic data outputs of the ship's geographic position (latitude, longitude), horizontal and vertical linear velocity (V_e, V_n, V_v), attitude (heading, roll, and pitch) and attitude rates. The RLGN provides mission critical ship's position and attitude data to shipboard sensors (such as radars), combat systems, gun and missile systems. The RLGN uses data from the Global Positioning System (GPS) to periodically update (i.e., reset) its position and internal clock. The RLGN is the ship's primary position source in absence of GPS.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Systems Engineering	-	-	3.377
Articles:			0
FY 2012 Plans: Assess current AN/WSN-7(V) design, performance, and support gaps. Based on Request For Information/Request For Proposal (RFI/RFP) responses, identify modernization solutions and evaluate technology readiness levels.			
Accomplishments/Planned Programs Subtotals	-	-	3.377

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204228N: <i>Surface Support</i>	PROJECT 3311: <i>Navigation Systems</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/0670: <i>Other Navigation</i>	38.580	23.167	22.982	0.000	22.982	24.206	29.390	28.886	30.357	0.000	197.568

D. Acquisition Strategy

Procurement of AN/WSN-7 modernization upgrades planned to begin in FY14.

E. Performance Metrics

FY12:

- Successfully complete AN/WSN-7(V) design, performance, and support gap analysis.
- Based on Request For Information/Request For Proposal (RFI/RFP) responses, identify modernization solutions.
- Evaluate technology readiness levels.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204228N: <i>Surface Support</i>	PROJECT 3311: <i>Navigation Systems</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	SPAWAR Atlantic:Little Creek, VA	-	-		0.827	Oct 2011	-		0.827	0.000	0.827	
Systems Engineering	C/CPFF	Penn State/ ARL:Warminster, PA	-	-		0.250	Oct 2011	-		0.250	0.000	0.250	
Systems Engineering	C/CPFF	Northrop Grumman Sys Corp:Charlottesville, VA	-	-		0.800	Oct 2011	-		0.800	0.000	0.800	
Systems Engineering/Design	WR	SPAWAR, Atlantic:Little Creek, VA	-	-		0.200	Oct 2011	-		0.200	0.000	0.200	
Systems Engineering/Design	C/CPFF	Penn State/ ARL:Warminster, PA	-	-		0.200	Oct 2011	-		0.200	0.000	0.200	
Systems Engineering/Design	C/CPFF	Northrop Grumman Sys Corp:Charlottesville, VA	-	-		1.000	Apr 2012	-		1.000	0.000	1.000	
Subtotal			-	-		3.277		-		3.277	0.000	3.277	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/CPFF	BAH/Tech Marine:Wasington, DC	-	-		0.100	Dec 2011	-		0.100	0.000	0.100	
Subtotal			-	-		0.100		-		0.100	0.000	0.100	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	-		3.377	-		3.377	0.000	3.377	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204228N: <i>Surface Support</i>	PROJECT 3311: <i>Navigation Systems</i>
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204228N: <i>Surface Support</i>	PROJECT 3311: <i>Navigation Systems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3311</i>				
Requirements Definition	1	2012	3	2012
Interface Requirements	2	2012	1	2013
Initial Architectural Design	3	2012	4	2012
Final Architectural Design	1	2013	2	2013
Modeling and Simulation	1	2013	3	2013
Coding and Test	2	2013	3	2014
Integration Testing	1	2014	1	2015
Land-Based Testing	1	2015	2	2015
Technical Evaluation	3	2015	3	2015
Operational Evaluation	4	2015	4	2015
Follow-on Development	1	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	16.705	10.587	8.819	-	8.819	8.616	4.744	4.921	5.068	Continuing	Continuing
0545: <i>TOMAHAWK</i>	12.802	10.587	8.819	-	8.819	8.616	4.744	4.921	5.068	Continuing	Continuing
9999: <i>Congressional Adds</i>	3.903	-	-	-	-	-	-	-	-	0.000	3.903

A. Mission Description and Budget Item Justification

The Tomahawk Weapons System (TWS) provides a Tomahawk cruise missile attack capability against targets on land (Tomahawk Land Attack Missile (TLAM)). This program ensures that the TWS exploits state-of-the-art technology to preserve the efficiency of this proven weapon system, and includes all missile development, mission planning system development, and submarine and surface ship weapons control system development.

The Tactical Tomahawk (TACTOM) All-Up-Round Block IV missile is a comprehensive spiral baseline upgrade to the TWS that provides the tactical commander a quick reaction response capability as well as improved flexibility, increased accuracy and higher lethality. A five-year multi-year (FY04-FY08) production contract was awarded in August 2004 for the production of up to 2200 Block IV Tomahawk missiles. The essential upgrades of the Block IV missile are: improved guidance, navigation, control and mission computer two-way satellite communications (SATCOM), and a lower production cost as compared to the Block III missile. Block IV provides a UHF SATCOM data link to enable the missile to receive in-flight mission modification messages, to transfer health and status messages and to broadcast Battle Damage Indication (BDI) messages. Block IV also includes a high anti-jam Global Positioning System (GPS) receiver, navigation improvements and associated antenna systems. The Tomahawk Program also includes development of Torpedo Tube Launch capability for submarines and the continuing advances identified as spiral development under the Tomahawk Baseline IV Operational Requirements Document, to include development of the Joint Chiefs of Staff-directed incorporation of a Selective Availability Anti-Spoofing Module (SAASM) capability and the Joint Multiple Effects Warhead System/Joint Capability Technology Demonstration.

Under the umbrella of the Theater Mission Planning Center (TMPC), the Tomahawk Command and Control System (TC2S) is the mission planning segment of the Tomahawk Weapon System that provides systems for the precision targeting, route planning, mission distribution, and strike management of Tomahawk cruise missile missions from sites located ashore and afloat. TMPC optimizes all aspects of the Tomahawk missile mission to successfully engage a target and has evolved into five scalable configurations: Cruise Missile Support Activities (CMSA) (2), Tomahawk Strike Mission Planning Cells (TSMPC) (3), Carriers (CVNs) (11), Firing Units (81), Command & Control Nodes (11), Labs (6), & Training Classrooms (6), for a total of 125 sites. A smaller TC2S version is being fielded on CVNs to support deployed Strike Group Commanders. Systems fielded at the CMSAs and TSMPCs provide mission planning and employment support information for conventional TLAM, including the distribution of mission data and command information essential to TLAM employment via the Mission Distribution System and associated communications infrastructure (CMSAs are the only organizations that can support Tomahawk Land Attack Missile/Nuclear (TLAM/N)). Development of Tactical Tomahawk capabilities in TMPC/TC2S includes software development, integration, test, and delivery, including support for training development, installation planning, and simulation/model development required by Commander, Operational Test and Evaluation Force. This project also includes development related to national and tactical imagery architectures, as well as software development to decrease mission-planning time and increase the quality and accuracy of each mission for Block III and IV TLAM.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>
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The Tactical Tomahawk FY10 Congressional funding supporting the Cost Reduction Initiative (CRI) provided for development and implementation of an affordability process to identify, investigate, plan, and execute viable CRIs for the Tomahawk F415 engine.

FY10 Congressional funding for Image-Based Navigation commenced a Phase II Small Business Innovative Research effort to mature the Image-Based Navigation capability into a Tomahawk Weapon System integrated component. This technology has the potential to enable the Block IV weapon to navigate in a GPS denied environment.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	17.077	10.587	9.333	-	9.333
Current President's Budget	16.705	10.587	8.819	-	8.819
Total Adjustments	-0.372	-	-0.514	-	-0.514
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.313	-			
• Program Adjustments	-	-	-0.386	-	-0.386
• Section 219 Reprogramming	-0.055	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.128	-	-0.128
• Congressional General Reductions Adjustments	-0.004	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Tomawk Cost Reduction Initiatives*

Congressional Add: *Low-Cost Image-Based Navigation and Precision Targ*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	3.266	-
	0.637	-
Congressional Add Subtotals for Project: 9999	3.903	-
Congressional Add Totals for all Projects	3.903	-

Change Summary Explanation

Technical: Not applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0204229N: <i>Tomahawk Mssn Planning Ctr</i>

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0545: <i>TOMAHAWK</i>	12.802	10.587	8.819	-	8.819	8.616	4.744	4.921	5.068	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Tomahawk Weapons System (TWS) provides a Tomahawk cruise missile attack capability against targets on land (Tomahawk Land Attack Missile (TLAM)). This program ensures that the TWS exploits state-of-the-art technology to preserve the efficiency of this proven weapon system, and includes all missile development, mission planning system development, and submarine and surface ship weapons control system development.

The Tactical Tomahawk (TACTOM) All-Up-Round (AUR) Block IV missile is a comprehensive spiral baseline upgrade to the TWS that provides the tactical commander a quick reaction response capability as well as improved flexibility, increased accuracy and higher lethality. A five-year multi-year (FY04-FY08) production contract was awarded in August 2004 for the production of up to 2200 Block IV Tomahawk missiles. The essential upgrades of the Block IV missile are: improved guidance, navigation, control and mission computer two-way satellite communications (SATCOM), and a lower production cost as compared to the Block III missile. Block IV provides a UHF SATCOM data link to enable the missile to receive in-flight mission modification messages, to transfer health and status messages and to broadcast Battle Damage Indication messages. Block IV also includes a high anti-jam Global Positioning System (GPS) receiver, navigation improvements and associated antenna systems. The Tomahawk Program also includes development of Torpedo Tube Launch capability for submarines and the continuing advances identified as spiral development under the Tomahawk Baseline IV Operational Requirements Document, to include development of the Joint Chiefs of Staff-directed incorporation of Selective Availability Anti-Spoofing Module (SAASM) capability and the Joint Multiple Effects Warhead System/Joint Capability Technology Demonstration (JMEWS/JCTD).

Under the umbrella of the Theater Mission Planning Center (TMPC), the Tomahawk Command and Control System is the mission planning segment of the Tomahawk Weapon System that provides systems for the precision targeting, route planning, mission distribution, and strike management of Tomahawk cruise missile missions from sites located ashore and afloat. TMPC optimizes all aspects of the Tomahawk missile mission to successfully engage a target and has evolved into five scalable configurations: Cruise Missile Support Activities (CMSA) (2), Tomahawk Strike Mission Planning Cells (TSMPC) (3), Carriers (CVNs) (11), Firing Units (81), Command & Control Nodes (11), Labs (6), & Training Classrooms (6), for a total of 125 sites. A smaller TC2S version is being fielded on CVNs to support deployed Strike Group Commanders. Systems fielded at the CMSAs and TSMPCs provide mission planning and employment support information for conventional TLAM, including the distribution of mission data and command information essential to TLAM employment via the Mission Distribution System and associated communications infrastructure (CMSAs are the only organizations that can support Tomahawk Land Attack Missile/Nuclear(TLAM/N). Development of Tactical Tomahawk capabilities in TMPC/TC2S includes software development, integration, test, and delivery, including support for training development, installation planning, and simulation/model development required by Commander, Operational Test and Evaluation Force. This project also includes development related to national and tactical imagery architectures, as well as software development to decrease mission-planning time and increase the quality and accuracy of each mission for Block III and IV TLAM.

The Tomahawk Weapons Control System provides launch capability for surface and submarine platforms. Development of the Tactical Tomahawk Weapons Control System (TTWCS) provides a common architecture to launch the Tactical Tomahawk Block IV and all variants in inventory. Development of upgrades to the Tactical

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>
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Tomahawk Weapons Control System is required to meet the DoD IT Standards Registry, to meet FORCEnet compliance and be Internet Protocol Version 6 (IPv6) ready in order to remain interoperable within the Joint Service Architecture and to retain weapons system viability and usability for our Sailors. These efforts provide battle-group tactical flexibility and responsiveness while maximizing TWS wartime capability.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>Title: Tactical Tomahawk All-Up-Round</p> <p align="right">Articles:</p> <p>Description: Achieve Selective Availability Anti-Spoofing Module (SAASM) Full Operational Capability (FOC), and completion of the cooperatively funded USN/UK JMEWS/JCTD multi-stage warhead technical demonstration.</p> <p>FY 2010 Accomplishments: FY10: Continued Phase II ORD requirement hardware and software trade studies. Incorporating SAASM capability into the GPS. Continue JMEWS/JCTD. Completed first demonstration test of JMEWS warhead technology.</p> <p>FY 2011 Plans: FY11: Continue JMEWS/JCTD. Continue Ordnance Alteration/Temporary Alteration efforts in support of the SEAWOLF program.</p> <p>FY 2012 Plans: FY12: Complete JMEWS/JCTD. Complete AUR platform integration of SAASM. Achieve SAASM program FOC.</p>	<p>8.578</p> <p>0</p>	<p>7.105</p> <p>0</p>	<p>5.320</p> <p>0</p>
<p>Title: Tactical Tomahawk Weapons Control System</p> <p align="right">Articles:</p> <p>Description: Continue TTWCS Viability activities and complete SAASM integration of TTWCS V5.4.0 in order to enter Follow on Test and Evaluation (FOT&E) for fleet release.</p> <p>FY 2010 Accomplishments: FY10: Continue TTWCS viability development activities to reduce risk in areas of overall TTWCS supportability, sustainability, Human Complexity Issues (HCI), and interoperability with external interfaces. Address key DoD/DoN mandates, including IPv6, FORCEnet, Open Architecture, and SAASM.</p> <p>FY 2011 Plans: FY11: Complete SAASM integration of TTWCS v5.4.0. Complete Developmental Test/Operational Test, Technical Readiness Review for TTWCS v5.4.0. Complete code porting of reuse code from UNIX to LINUX. Continue work to reduce HCI complexity. Perform development efforts in support of DDG-113, and DDG-1000.</p> <p>FY 2012 Plans:</p>	<p>1.643</p> <p>0</p>	<p>0.697</p> <p>0</p>	<p>0.990</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
FY12: Complete development of TTWCS viability and enter FOT&E. Prepare for Fleet Release of TTWCS v5.4.0. Continue development work on TTWCS v5.4.1 toward achievement of full TTWCS viability, and launch platform integration on platforms existing and in development.				
Title: Tactical Tomahawk Command and Control Systems (TC2S)		2.581	2.785	2.509
		0	0	0
Articles:				
Description: Development and incorporation of new capabilities in Tomahawk Command and Control systems necessary for the employment of Tactical Tomahawk. Imagery upgrades to Tomahawk Command and Control System. Continue Test & Evaluation support for Tomahawk Command and Control Systems.				
FY 2010 Accomplishments: FY10 - Completed evaluation and analysis of Common Geopositioning Services ability to operate with new sensor test data. Completed evaluation of imagery format changes, resulting from National Geospatial Agency (NGA) mandated updates and architectural changes to external interfaces. Continued TLAM navigation and accuracy and weapons delivery Circular Error Probable (CEP) studies and assessments necessary to ensure the TWS is properly employed; Completed TC2S Navigation Toolset Release Candidate One development efforts associated with the Vertical Update Point, Digital Elevation Matrix, Vertical Obstruction Data, Digital Scene Matching Area Correlator modifications, and product validation. Completed evaluation of DSMAC planning modifications that would maintain mission planning timeline capability in a GPS Denied Environment.				
FY 2011 Plans: FY11 - Continue TLAM navigation and accuracy and weapons delivery CEP studies and assessments necessary to ensure the TWS is properly employed; Continue evaluation of TC2S design process to ensure Tactical Tomahawk missile performance characteristics are adequately modeled in TC2S. Continue evaluation of imagery formats resulting from NGA mandated architectural changes.				
FY 2012 Plans: FY12 - Continue TLAM navigation and accuracy and weapons delivery CEP studies and assessments necessary to ensure the TWS is properly employed; Continue evaluation of TC2S design process to ensure Tactical Tomahawk missile performance characteristics are adequately modeled in TC2S. Continue evaluation of imagery formats resulting from NGA mandated architectural changes.				
Accomplishments/Planned Programs Subtotals		12.802	10.587	8.819

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012			FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• WPN/2101: <i>Tomahawk</i>	276.499	300.178	303.306	0.000	303.306	312.720	322.158	328.709	336.359	1,454.117	14,508.750
• OPN/5253: <i>Tomahawk Support Equip</i>	87.277	88.698	72.861	0.000	72.861	73.777	65.360	62.853	64.086	913.640	1,538.575
• OPN/9020: <i>Initial and Vendor Direct Spares</i>	1.123	0.853	0.517	0.000	0.517	0.385	0.418	0.392	0.405	0.000	8.099

D. Acquisition Strategy

In 1998, the Tomahawk Baseline Improvement Program (TBIP) transitioned to the Tactical Tomahawk (Block IV) Program. This program is outlined in the Class Justification and Approval (CJ&A No. AIR-22448) signed by the Under Secretary of the Navy on 29 May 1998. The acquisition strategy was to transition the TBIP to Tactical Tomahawk. The Tactical Tomahawk development program was a cost-sharing contract between the Government and the Contractor to add capability to the missile. A multi-year full-rate production contract was awarded in August 2004 for FY 2004-2008 production. The FY09 through FY11 BLK IV Missile procurement strategy utilizes a FY 2009 annualized Firm Fixed Price contract, along with two fixed price option years for FY 2010 and FY 2011. FY 2009 and FY 2010 have been exercised.

Torpedo Tube Launch missile procurement began in FY 2008 within the current missile production budget as required to meet Fleet load-out requirements. R&D technology demonstration capabilities (Multiple-Effects Warhead, Anti Surface Warfare) will be potentially introduced after successful qualification and testing. Complete SAASM integration efforts.

E. Performance Metrics

The Navy seeks to improve the Tomahawk cruise missile attack capability against land targets through research and development done predominantly through defense contractors and government field activities.

Examples in the area of the All-Up-Round include development of candidate warheads that will enhance weapon ability to cover all assigned target types, provide a quick reaction response capability for the weapon system, and improved guidance, navigation, control, mission computer two-way satellite communications, and a high anti-jam GPS receiver all in line with state of the art technology.

In the area of the Weapon Control System, research and development is performed to ensure viability and usability of the system into the future, providing necessary upgrades to meet the DoD Information Technology standards registry to comply with FORCENet requirements and be Internet Protocol Version 6 ready to remain interoperable within Joint Service Architecture, in order to provide battle-group tactical flexibility and responsiveness needed to enable full wartime capability.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Mssn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>
<p>In the area of the Command and Control System, continue research and development in order to provide scalable configurations to deploy where and as needed to provide necessary command and control, development necessary to function with national and tactical imagery architectures, decrease mission planning time, and increase the quality and accuracy of each mission for the Tomahawk weapons System.</p> <p>All of these research and development efforts contribute to the Navy providing the very best weapon system to the war fighter to accomplish the combat mission.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev - AUR	C/CPFF	Raytheon Co.:Tucson, AZ	220.376	1.809	Jun 2011	1.031	Jun 2012	-		1.031	7.764	230.980	230.980
Systems Engineering - AUR	Reqn	NAVSEA:WNY, DC	29.619	0.418	Mar 2011	0.275	Mar 2012	-		0.275	0.650	30.962	
Prior Year cost no longer funded in FYDP	Various	Various:Various	2,405.912	-		-		-		-	0.000	2,405.912	
Subtotal			2,655.907	2.227		1.306		-		1.306	8.414	2,667.854	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC:Dahlgren, VA	1.840	0.260	Feb 2011	0.110	Feb 2012	-		0.110	1.015	3.225	
Development Support - AUR	SS/CPFF	SAIC:San Diego, CA	3.632	0.645	Feb 2011	0.718	Feb 2012	-		0.718	3.325	8.320	8.344
Development Support - AUR	WR	Various:Various	1.516	0.260	Feb 2011	0.110	Feb 2012	-		0.110	0.575	2.461	
Development Support - AUR	WR	NAWC:China Lake, CA	66.860	3.713	Feb 2011	3.076	Feb 2012	-		3.076	1.240	74.889	
Soft Dev-Mission Plan Sys TC2S	Reqn	NAVSEA:WNY, DC	20.185	1.174	Feb 2011	1.113	Feb 2012	-		1.113	6.720	29.192	
Soft Dev-Mission Plan Sys TC2S	Reqn	Navy Sys Mgt Act:VA	10.731	1.398	Feb 2011	1.190	Feb 2012	-		1.190	6.223	19.542	
Soft Dev-Mission Plan Sys TC2S	WR	NAWC:Pax River, MD*	0.139	0.213	Feb 2011	0.206	Feb 2012	-		0.206	0.720	1.278	
Soft Dev-Dev Weapons Control Sys	C/CPFF	Lockheed:Valley Forge, VA	105.848	0.697	Feb 2011	0.990	Feb 2012	-		0.990	0.000	107.535	108.093
Prior Year cost no longer funded in FYDP	Various	Various:Various	122.404	-		-		-		-	0.000	122.404	
Subtotal			333.155	8.360		7.513		-		7.513	19.818	368.846	

Remarks
* Funding sent to NAWC, PAXRIV beginning in FY10.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>
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Tomahawk Mission Planning Center	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones																												
Systems Development																												
Software Development																												
Hardware Development																												
Reviews																												
Test and Evaluation																												
Technical Evaluation																												
Operational Evaluation																												
Production Milestones																												
Contract Awards																												
Deliveries																												

2012PB - 0204229N - 0545

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 0545: <i>TOMAHAWK</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Tomahawk Mission Planning Center				
Acquisition Milestones: Milestones: TTWCS V5.4.0 Full Operational Capability (FOC)	1	2012	1	2012
Acquisition Milestones: Milestones: Tactical Tomahawk Missile Integration FOC	2	2012	2	2012
Acquisition Milestones: Milestones: TC2S 4.3 FOC	3	2012	3	2012
Acquisition Milestones: Milestones: TC2S 5.0 FOC	2	2015	2	2015
Acquisition Milestones: Milestones: TTWCS V5.4.1 FOC	2	2015	2	2015
Systems Development: Software Development: Tactical Tomahawk (TT) SAASM Integration	1	2010	1	2012
Systems Development: Hardware Development: TT Preplanned Product Improvement (P3I)	1	2010	4	2016
Systems Development: Hardware Development: Tactical Tomahawk (TACTOM) Full Rate Production	1	2010	4	2016
Systems Development: Reviews: Tactical Tomahawk Weapon Control System (TTWCS) V5.4.0 Developmental Test/Operational Test (DT/OT) Technical Readiness Review (TRR)	3	2011	3	2011
Systems Development: Reviews: TTWCS V5.4.1 Sys TRR	1	2012	1	2012
Systems Development: Reviews: TTWCS V5.4.1 DT/OT TRR	2	2014	2	2014
Test and Evaluation: Tomahawk Comand and Control System (TC2S) 4.3 DT	1	2010	1	2012
Test and Evaluation: TC2S 5.0 DT/OT - III G	1	2010	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204229N: <i>Tomahawk Msn Planning Ctr</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	3.903	-	-	-	-	-	-	-	-	0.000	3.903
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Tactical Tomahawk FY10 Congressional funding supporting the Cost Reduction Initiative (CRI) provides for development and implementation of an affordability process to identify, investigate, plan and execute viable CRIs for the Tomahawk F415 engine.

FY10 Congressional funding for Image-Based Navigation and Precision Targeting provided for analysis to assess reliability and performance of Image Navigation Reference Products in the TC2S. Additional funding received in FY10 will be added to the Phase 2.5 contract to support additional tasking in Concept of Operation (CONOPS) development, hardware integration, and actual flight software development.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Tomawk Cost Reduction Initiatives	3.266	-
FY 2010 Accomplishments: FY10 - Continued efforts to plan and execute the remaining approved CRI's - Continued Evaluation of new CRIs while capitalizing on Reuse, Refurbishment, and Service Life Extension opportunities		
Congressional Add: Low-Cost Image-Based Navigation and Precision Targ	0.637	-
FY 2010 Accomplishments: FY10 - Continued effort with Phase 2.5 contract to support additional tasking in CONOPS development, hardware integration, and actual flight software development.		
Congressional Adds Subtotals	3.903	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not required for Congressional Adds.

E. Performance Metrics

Not required for Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0204311N: <i>Integrated Surveillance System</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	26.123	23.464	21.259	-	21.259	21.534	21.854	22.295	22.460	Continuing	Continuing
0766.: <i>IUSS Detect/Classif System</i>	24.530	23.464	21.259	-	21.259	21.534	21.854	22.295	22.460	Continuing	Continuing
9999: <i>Congressional Adds</i>	1.593	-	-	-	-	-	-	-	-	0.000	1.593

A. Mission Description and Budget Item Justification

This Program Element (PE) comprises two projects - 0766 and 9999. Project 0766 provides for Integrated Undersea Surveillance Systems (IUSS) Research and Development Projects under the Maritime Surveillance Systems (MSS) Program Office (PEO LMW PMS 485). IUSS provides the Navy with its primary means of submarine detection both nuclear and diesel. A portion of project 0766 (FSS) is classified, with details available at a higher classification level. Project 9999 consists of the Congressional Add: Autonomous Anti-Submarine Vertical Beam Array.

The IUSS Research and Development project (0766) funds SURTASS Passive and SURTASS Low Frequency Active (LFA) developments. SURTASS provides the mobile, tactical arm of the Integrated Undersea Surveillance System, providing long range detection and cueing for tactical weapons platforms against both diesel and nuclear powered submarines. SURTASS LFA provides an active adjunct capability for IUSS passive and tactical sensors to assist in countering the quieter diesel and nuclear threats of the 1990s and beyond. The LFA tasks are directed at detection of slow quiet threats in harsh littoral waters.

In order to continue with reductions in life cycle costs and continue with system-wide consolidation, a short-term goal is to develop a common IUSS processor based on NAVSEA's Acoustic Rapid COTS Insertion (ARCI) program. The IUSS Integrated Common Processor (ICP) will have the capability to process and display data from all fixed and mobile underwater systems. The IUSS ICP will be used for all new system installations and replace the legacy systems as they reach end of life and require upgrading. Additionally, SURTASS has consolidated on the TB-29A Twin-line array, a variant of the Submarine TB-29A Long line array. This reduced the number of array variants employed by SURTASS from 3 to 1, and enabled development and logistics cost savings by leveraging off the submarine TB-29A program.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	26.225	23.464	23.938	-	23.938
Current President's Budget	26.123	23.464	21.259	-	21.259
Total Adjustments	-0.102	-	-2.679	-	-2.679
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-2.614	-	-2.614
• Section 219 Reprogramming	-0.063	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.065	-	-0.065
• Congressional General Reductions Adjustments	-0.039	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: *Autonomous Anti-Sub Vertical Beam Array*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	1.593	-
	1.593	-
	1.593	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0766.: <i>IUSS Detect/Classif System</i>	24.530	23.464	21.259	-	21.259	21.534	21.854	22.295	22.460	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
The FSS portion of 0766 is classified with details available at a higher classification level.

A. Mission Description and Budget Item Justification

A. This project includes efforts for SURTASS. The SURTASS project comprises the mobile, tactical arm of the Integrated Undersea Surveillance System, providing long range detection and cueing for tactical weapons platforms against both diesel and nuclear powered submarines. SURTASS also provides the undersea surveillance necessary to support regional conflicts and sea-lane protection. SURTASS has experienced recent passive and active success against diesel submarines operating in shallow water. SURTASS is leveraging existing developments and reducing costs by using Non-Developmental Items and commercial hardware, supporting common Navy Undersea Warfare processing and towed array developments, and increasing operator efficiency through computer-aided detection and classification processing. SURTASS development efforts include: LFA improvements, common IUSS processing, twin-line array development and processing, improved detection and classification/passive automation to counter quieter threats, additional signal processing, integrated active and passive operations, improved Battle Group support, and improved information processing.

LFA provides an active adjunct capability for IUSS passive and tactical sensors to counter the quieter diesel and nuclear threats of the 1990s and beyond. The LFA tasks are directed at detection of slow, quiet threats in harsh littoral waters. Improvements include TL-29A/LFA integration enhancements, advanced waveforms for littoral/shallow water operations including Doppler sensitive waveforms, and processing algorithms to reduce clutter and reverberation false alarms in shallow water. The LFA task includes development and testing of a compact LFA transmit source array for SWATH-P ships, and upgrade of LFA processing capability into the IUSS Integrated Common Processing (ICP) architecture. The ICP is a derivative of the NAVSEA Submarine Acoustic Rapid COTS Insertion (ARCI) program, and is being augmented for IUSS requirements. Together, the LFA improvements, TL-29A, and the ICP support the SURTASS Active Improvement Program.

Functional improvements are delivered to the Fleet in software "builds", while hardware improvements are delivered through the Tech Insertion (TI) process. Software builds are based on the Advanced Processor Build (APB) process begun by the NAVSEA Submarine USW program. Each APB will introduce new capabilities into SURTASS systems including improved automation, normalizer techniques, adaptive beam forming, and display enhancements. SURTASS participates in the process by contributing algorithms for consideration, supplying peer group members for review of candidate algorithms, participating in test evolutions, and incorporating improved algorithms into operational systems. The TI process, modeled after the NAVSEA Submarine USW hardware improvement program, delivers processing technology improvements to platforms on roughly a 4-year cycle. Hardware upgrades for active and passive arrays and communications systems will also be provided during TI upgrades, but not on a regular planned development cycle as for the processing upgrades.

B. PEO LMW is involved with the development and maintenance of various IUSS systems. These systems include FDS, FDS-C, SDS and SURTASS. The near-term goal is development of ICP, which will result in a single IUSS processor baseline, with minor maintenance efforts continuing on fielded systems. The existing system

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>
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architecture, signal processing, contact management, and reporting requirements will be evaluated as well as the requirements for future systems. The development of the ICP will take advantage of automation advancement, array technology improvements, along with IUSS, submarine, and surface USW system commonality. Additionally, a long term goal is to activate all IUSS sensors as part of a coordinated Active Improvement Program. The FSS portion of 0766 is classified with details available at a higher classification level.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: ASW Study</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Conducted trade-offs and studies for Distribute/Netted System concept application for Shallow Water Surveillance System incorporating Matched Field Processing (MFP), Autonomous Burial Vehicles (ABV) and Reeling Pop-up Buoy (RPuB) communication. Conducted successful demonstration of ABV with burial of 20 meters of a dummy array; initiated evaluation of MFP on archived passive acoustic array data from 2004; developed RPuB test mock-up and conducted initial successful at sea endurance test.</p> <p>FY 2011 Plans: Continue trade-offs and studies for Distribute/Netted System concept. Evaluate Autonomous Burial Vehicle (ABV) burial improvement concepts from other sources for possible incorporation in Shallow Water Surveillance System solution. Conduct Matched Field Processing (MFP) model validation, and develop model-based statistics of MFP in various tactically significant areas for Anti-Submarine Warfare. Continue development of Reeling Pop-up Buoy (RPuB) by implementing anti-fouling device with extended at sea endurance test.</p>	<p>0.681</p> <p>0</p>	<p>0.659</p> <p>0</p>	<p>-</p>
<p>Title: Compact Low Frequency Active</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Continued DT for CLFA/TL-29A/IUSS Common Processor (ICP). Development of product improvements and corrections recommended or required from DT.</p> <p>FY 2011 Plans: Complete DT for CLFA/TL-29A/ICP. Continue development of product improvements and corrections associated with CLFA DT and LFA FOT&E. Conduct at-sea testing of product improvements. Conduct FOT&E for LFA/TL-29A/ICP.</p> <p>FY 2012 Plans: Conduct OT of CLFA/TL-29A/ICP. Continue development of product improvements and corrections associated with CLFA DT/OT and LFA FOT&E.</p>	<p>2.285</p> <p>0</p>	<p>1.890</p> <p>0</p>	<p>1.960</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Conduct at-sea testing of product improvements.				
Title: TB-29A/Twin-Line				
Articles:		1.948 0	1.889 0	1.848 0
FY 2010 Accomplishments: Continued development of connectionless array technologies and true fiber-optic arrays. Investigated Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continued development and test of additional fishing net mitigation approaches.				
FY 2011 Plans: Continue development of connectionless array technologies and true fiber-optic arrays. Continue efforts to explore Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continue development of fishing net mitigation approaches.				
FY 2012 Plans: Continue development of connectionless array technologies and true fiber-optic arrays. Continue efforts to explore Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continue development of fishing net mitigation approaches.				
Title: Integrated Common Processor (ICP)				
Articles:		13.661 0	13.446 0	12.136 0
FY 2010 Accomplishments: Began tech refresh development in coordination with the Submarine Acoustic Rapid COTS Insertion (ARCI) Program Advanced Processing Build (APB) tech refresh. Continued development of new automation algorithms and techniques for addressing multi-array, high beam count requirements. Continued development of Littoral LFA improvements.				
FY 2011 Plans: Continue development of new automation algorithms and techniques for addressing multi-array high beam count requirements. Continue development of Littoral LFA improvements. Continue tech refresh development in coordination with the Submarine Acoustic Rapid COTS Insertion (ARCI) Program Advanced Processing Build (APB) tech refresh. Address processing improvement recommendations and deficiencies associated with CLFA DT and LFA FOT&E.				
FY 2012 Plans: Continue development of new automation algorithms and techniques for addressing multi-array high beam count requirements. Continue development of Littoral LFA improvements.				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue tech refresh development in coordination with the Submarine Acoustic Rapid COTS Insertion (ARCI) Program Advanced Processing Build (APB) tech refresh. Continue to address processing improvement recommendations and deficiencies associated with CLFA DT/OT and LFA FOT&E.			
Title: Classified Effort	5.955	5.580	5.315
Articles:	0	0	0
Description: The FSS portion of 0766 is classified with details available at a higher classification level.			
FY 2010 Accomplishments: The FSS portion of 0766 is classified with details available at a higher classification level.			
FY 2011 Plans: The FSS portion of 0766 is classified with details available at a higher classification level.			
FY 2012 Plans: The FSS portion of 0766 is classified with details available at a higher classification level.			
Accomplishments/Planned Programs Subtotals	24.530	23.464	21.259

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/2237: <i>Surveillance Towed Array Sensor System</i>	24.034	8.468	29.247	0.000	29.247	2.774	1.910	2.414	2.456	0.000	140.803

D. Acquisition Strategy

FY 2010: T&E Milestones: CLFA/TL-29A/ICP DT.
 FY 2011: Engineering Milestones: ICP Tech Refresh.
 FY 2011: T&E Milestones: CLFA/TL-29A/ICP DT. LFA/TL-29A/ICP FOT&E.
 FY 2012: T&E Milestones: CLFA/TL-29A/ICP OT&E.
 The FSS portion of 0766 is classified with details available at a higher classification level.

E. Performance Metrics

Successfully achieve CLFA Initial Operational Capability. Successfully complete CLFA Operation Test Readiness Review. Successfully complete CLFA Developmental Test / Operational Test. Successful demonstration of required LFA/CLFA improvements capability. Successful transition of Submarine Advanced Processing Build (APB) functionality into IUSS products. Successful transition of net mitigation technologies into Towed Array baseline.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>

The FSS portion of 0766 is classified with details available at a higher classification level.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	C/CPFF	LOCKHEED MARTIN:VA	-	8.132	Nov 2010	7.215	Nov 2011	-		7.215	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	C/CPFF	APL/JHU:MD	-	0.525	Nov 2010	0.525	Nov 2011	-		0.525	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	Various	VARIOUS:Not Specified	62.813	0.755	Nov 2010	0.755	Nov 2011	-		0.755	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/CLFA/LFA	WR	NFESC:CA	-	0.398	Nov 2010	0.447	Nov 2011	-		0.447	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/CLFA/LFA	WR	SSC PAC:CA	-	0.227	Nov 2010	0.227	Nov 2011	-		0.227	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/CLFA/LFA	C/CPFF	APL/JHU:MD	-	0.375	Nov 2010	0.375	Nov 2011	-		0.375	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/CLFA/LFA	Various	VARIOUS:Not Specified	116.206	0.323	Nov 2010	0.323	Nov 2011	-		0.323	Continuing	Continuing	Continuing
N74 ASW STUDY	WR	SSC PAC:CA	-	0.449	Nov 2010	-	Nov 2011	-		-	Continuing	Continuing	Continuing
N74 ASW STUDY	Various	VARIOUS:Not Specified	7.335	0.210	Nov 2010	-	Nov 2011	-		-	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	C/CPFF	APL/JHU:VA	-	0.625	Nov 2010	0.625	Nov 2011	-		0.625	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	WR	ADAPTIVE METHODS:VA	-	0.222	Nov 2010	0.271	Nov 2011	-		0.271	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	VARIOUS:Not Specified	7.624	0.476	Nov 2010	0.365	Nov 2011	-		0.365	Continuing	Continuing	Continuing
FSS - Classified	Various	TBD:Not Specified	5.955	5.580	Nov 2010	5.315	Nov 2011	-		5.315	0.000	16.850	
Subtotal			199.933	18.297		16.443		-		16.443			

Remarks
The FSS portion of 0766 is classified with details available at a higher classification level.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	WR	SSC PAC:CA	-	1.707	Nov 2010	1.511	Nov 2011	-		1.511	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	Various	VARIOUS:Not Specified	3.270	0.310	Nov 2010	0.310	Nov 2011	-		0.310	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/LFA	WR	SSC PAC:CA	-	0.194	Nov 2010	0.204	Nov 2011	-		0.204	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/LFA	Various	VARIOUS:Not Specified	7.117	0.090	Nov 2010	0.090	Nov 2011	-		0.090	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	VARIOUS:Not Specified	-	0.283	Nov 2010	0.294	Nov 2011	-		0.294	Continuing	Continuing	Continuing
Subtotal			10.387	2.584		2.409		-		2.409			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	C/CPFF	LOCKHEED MARTIN:VA	-	0.953	Nov 2010	0.821	Nov 2011	-		0.821	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	Various	Not Specified:Not Specified	5.701	0.392	Nov 2010	0.392	Nov 2011	-		0.392	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/LFA	WR	OPTEVFOR:Not Specified	-	0.125	Nov 2010	0.125	Nov 2011	-		0.125	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/LFA	Various	Not Specified:Not Specified	20.538	0.064	Nov 2010	0.071	Nov 2011	-		0.071	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	C/CPFF	APL/JHU:MD	-	0.189	Nov 2010	0.196	Nov 2011	-		0.196	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	Not Specified:Not Specified	2.568	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			28.807	1.723		1.605		-		1.605			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	Various	VARIOUS:Not Specified	3.629	0.671	Nov 2010	0.606	Nov 2011	-		0.606	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/LFA	Various	VARIOUS:Not Specified	15.317	0.095	Nov 2010	0.098	Nov 2011	-		0.098	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	VARIOUS:Not Specified	-	0.094	Nov 2010	0.098	Nov 2011	-		0.098	Continuing	Continuing	Continuing
Subtotal			18.946	0.860		0.802		-		0.802			
Project Cost Totals			258.073	23.464		21.259		-		21.259			

Remarks
The R3 and the R4 / R4A reflect the UNCLASSIFIED portion of the PE.

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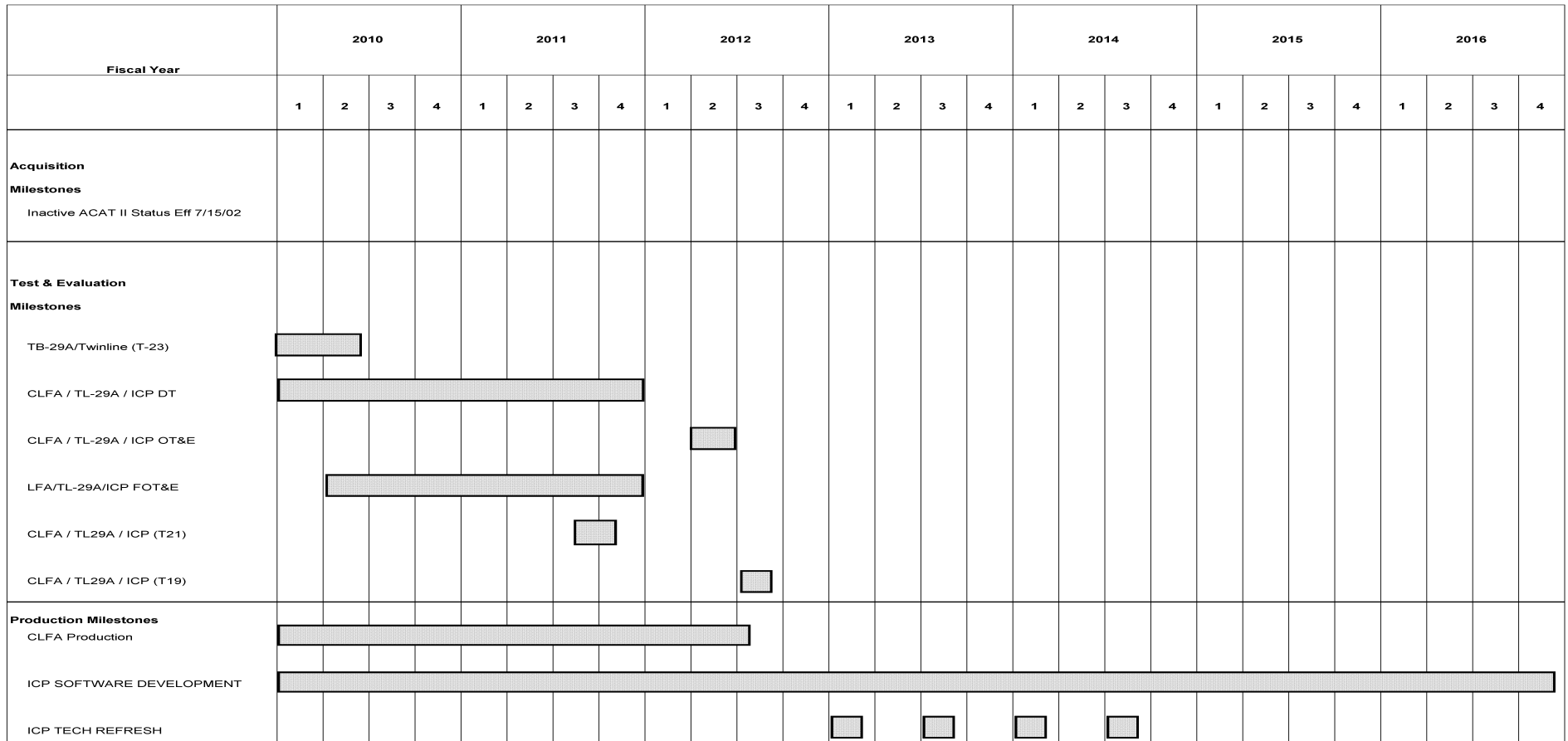
Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0204311N: *Integrated Surveillance System*

PROJECT
 0766.: *IUSS Detect/Classif System*



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 0766.: <i>IUSS Detect/Classif System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0766.L24				
TB-29A TL SYSTEM INSTALLATION / TEST (T-23)	1	2010	2	2010
CLFA / TL-29A/ ICP DT	1	2010	4	2011
CLFA / TL-29A/ ICP OT & E	2	2012	3	2012
LFA / TL-29A/ ICP FOT & E	2	2010	4	2011
CLFA / TL29A / ICP (T21)	3	2011	4	2011
CLFA / TL29A / ICP (T19)	3	2012	3	2012
CLFA Production	1	2010	3	2012
ICP Software Development	1	2010	4	2016
ICP Tech Refresh	1	2013	3	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204311N: <i>Integrated Surveillance System</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	1.593	-	-	-	-	-	-	-	-	0.000	1.593
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Add.

B. Accomplishments/Planned Programs (\$ in Millions)

Congressional Add: Autonomous Anti-Sub Vertical Beam Array	FY 2010	FY 2011
<i>FY 2010 Accomplishments:</i> Continued investigation into the incorporation of vertical beam arrays into existing fixed surveillance system hardware designs to provide a ready volumetric array capability for increased detection and system performance.	1.593	-
Congressional Adds Subtotals	1.593	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional add.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0204413N: <i>Amphibious Tactical Supt Units</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	1.142	4.357	5.214	-	5.214	5.571	4.798	4.571	3.435	Continuing	Continuing
2231: <i>LCU Replacement and DMFD</i>	1.142	4.357	5.214	-	5.214	5.571	4.798	4.571	3.435	Continuing	Continuing

A. Mission Description and Budget Item Justification

TECHNOLOGY TRANSITION: Provides for research efforts on Landing Craft Air Cushioned (LCAC) Future Naval Capabilities to transfer technologies to functional uses on current LCACs. Current technology initiatives include the following: sustainability/readiness/performance analysis; LCAC communications improvements; development and qualification of full authority digital engine controller for LCAC engines, new torque meter design for ETF40B engines and fuel efficiency trials.

Landing Craft, Utility Replacement (LCU(R)) Capabilities Based Assessment (CBA) will define mission, identify and evaluate capabilities, identify and assess potential solutions, and evaluate operational risk in order to provide recommendations for validation authority for high speed, high capacity assault craft replacement.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	2.314	4.357	4.802	-	4.802
Current President's Budget	1.142	4.357	5.214	-	5.214
Total Adjustments	-1.172	-	0.412	-	0.412
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.127	-			
• SBIR/STTR Transfer	-0.003	-			
• Program Adjustments	-	-	0.700	-	0.700
• Section 219 Reprogramming	-0.042	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.288	-	-0.288

Change Summary Explanation

Technical: Not applicable.
Schedule: Added funds to begin LCU(R) CBA.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>	PROJECT 2231: <i>LCU Replacement and DMFD</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2231: <i>LCU Replacement and DMFD</i>	1.142	4.357	5.214	-	5.214	5.571	4.798	4.571	3.435	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Current technology initiatives include the following: sustainability/readiness/performance analysis; LCAC communications improvements; development and qualification of full authority digital engine controller (FADEC) for LCAC engines, new torque meter design for ETF40B engines and fuel efficiency trials.

LCU (R): CBA for replacement program.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: LCU Replacement and DMFD	1.142	4.357	5.214
Articles:	0	0	0
FY 2010 Accomplishments: Began development of functional specification for PC tablet software and continued development of virtual tour software and maintenance tablets.			
FY 2011 Plans: Award contract for development of PC tablet software and accomplish successful testing. Begin redevelopment of full authority digital engine controller for LCAC engines. Deliver approved plan for redesign of ETF40B engine torque meters. Begin development of FADEC. Conduct LCAC fuel efficiency trials.			
FY 2012 Plans: Complete development and achieve qualification of full authority digital engine controller. Begin redesign of ETF40B engine torque meters. Initiate LCU(R) CBA process.			
Accomplishments/Planned Programs Subtotals	1.142	4.357	5.214

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN 0970: <i>Amphibious Tactical Support Units</i>	4.900	9.142	0.000	0.000	0.000	22.632	14.411	8.238	6.649	0.000	65.972
	2.436	6.333	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.769

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>	PROJECT 2231: <i>LCU Replacement and DMFD</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN 0981/1: <i>Items less than \$5M (Material)</i>											
• OPN 0981/2: <i>Items less than \$5M (Installation)</i>	11.826	13.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.828
• SCN 5139: <i>LCAC SLEP</i>	63.660	83.035	84.076	0.000	84.076	85.777	84.649	86.190	87.376	153.100	727.863

D. Acquisition Strategy

TECHNOLOGY TRANSFER - RDT&E efforts commenced in FY06. Multiple contracts and Field Activities are involved through FY16 to complete the various projects.

E. Performance Metrics

- FY10 - Development of functional specification for PC tablet software and continued development of virtual tour software and maintenance tablets.
- FY11 - Award contract for development of PC tablet software and accomplish successful testing. Begin development of FADEC. Deliver approved plan for redesign of ETF40B engine torque meters. Begin redevelopment of full authority digital engine controller. Conduct LCAC fuel efficiency trials.
- FY12 - Complete development and achieve qualification of full authority digital engine controller. Begin redesign of ETF40B engine torque meters.
- FY12 - Begin LCU(R) CBA process.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>	PROJECT 2231: <i>LCU Replacement and DMFD</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	WR	NSWC CD:Philadelphia, PA	2.911	1.659	Feb 2011	1.702	Jan 2012	-		1.702	4.327	10.599	
Systems Engineering	WR	NSWC CD:Philadelphia, PA	1.348	0.560	Feb 2011	1.000	Jan 2012	-		1.000	4.000	6.908	
Subtotal			4.259	2.219		2.702		-		2.702	8.327	17.507	

Remarks
Systems Engineering contains \$843K for LCU Replacement efforts

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC PCD:Panama City, FL	1.001	1.450	Jul 2011	1.645	May 2012	-		1.645	6.580	10.676	
Subtotal			1.001	1.450		1.645		-		1.645	6.580	10.676	

Remarks
Contract for PC Tablet estimated for award Jul 2011
Development Support contains \$157K for LCU Replacement Efforts

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental T & E	WR	Various:Various	0.287	-		-		-		-	0.000	0.287	
Operational T & E	WR	NSWC PCD:Panama City, FL	0.167	0.198	Mar 2011	0.216	Mar 2012	-		0.216	0.848	1.429	
Test Assets	WR	NSWC PCD:Panama City, FL	0.316	0.198	Mar 2011	0.221	Mar 2012	-		0.221	0.900	1.635	
Subtotal			0.770	0.396		0.437		-		0.437	1.748	3.351	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204413N: <i>Amphibious Tactical Supt Units</i>	PROJECT 2231: <i>LCU Replacement and DMFD</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2231				
LCAC Technology Initiatives	1	2010	4	2016
LCU (R) CBA	2	2012	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	35.912	50.750	42.244	-	42.244	31.239	21.961	22.461	22.883	Continuing	Continuing
0604: <i>Training Range & Instr Dev</i>	3.686	3.335	3.452	-	3.452	3.480	3.509	3.580	3.629	Continuing	Continuing
1427: <i>Surface Tactical Team Trainer (STTT)</i>	8.259	5.485	23.972	-	23.972	17.335	8.010	8.222	8.450	Continuing	Continuing
2124: <i>Air Warfare Training</i>	1.694	1.665	1.648	-	1.648	1.653	1.671	1.702	1.725	Continuing	Continuing
3087: <i>Curriculum & Trainer Development</i>	13.911	24.146	-	-	-	-	-	-	-	0.000	38.057
3093: <i>TACTS/LATR Replacement</i>	5.972	16.119	13.172	-	13.172	8.771	8.771	8.957	9.079	Continuing	Continuing
9999: <i>Congressional Adds</i>	2.390	-	-	-	-	-	-	-	-	0.000	2.390

A. Mission Description and Budget Item Justification

A. MISSION DESCRIPTION:

0604 - The Training Range and Instrumentation Development Systems (TRIDS) program provides development of range systems including Large Area Tracking Range (LATR), Test & Training Enabling Architecture (TENA) interoperability and Tactical Training Ranges (TTR) infrastructure improvements.

1427/3087/3087A - Surface Tactical Team Trainer (STTT) develops modifications during inactive sustainment of Battle Force Tactical Training (BFTT) system. This is required to maintain capabilities and interfaces to provide realist combat system coordinated team, unit and Fleet Synthetic Training (FST) collective Group/Force level training events. In addition, BFTT supports the embedded trainer "family of systems" approach for the development of a Total Ship Training Capability (TSTC). Specific improvements include improved integration with the Navy Continuous Training Environment (NCTE) and development of a High Level Architecture (HLA) capable, integrated shipboard network to meet increasing Commander Naval Surface Forces (CNSF) and United States Fleet Forces Command (USFFC) FST requirements. The need for transforming training is documented within the Office of Force Transformation Military Transformation Initiative, DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan.

2124 - The Air Warfare Training Development (AWTD) program provides component technology development and risk mitigation for aviation training systems, including mission rehearsal simulation technologies and the Aviation Training Technology Integration Facility (ATTIF). The ATTIF provides for incremental development, prototype evaluation, and final fleet Test and Evaluation prior to technology transition.

3093 - The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the Tactical Aircrew Combat Training System and LATR systems. TCTS will provide fleet deployable instrumentation for at sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i>	PE 0204571N: <i>Consolidated Trng Sys Dev</i>
BA 7: <i>Operational Systems Development</i>	

where live instrumented training can be conducted. Initial fielding of a Non Developmental Item (NDI) Pod system at NAS Key West and Beaufort is complete. The program incorporates evolutionary development (incremental) towards a high capacity/long range system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation and open architecture.

10C183 - Develop algorithms for deep water multistatic active sonar simulation, investigate and incorporate higher fidelity ocean model algorithms, facilitate flexibility in scenario generation and modify existing Ocean Model engineering tool to facilitate test and debug. Research new algorithms for real-time ocean modeling scheduling, parallel computing and new database architectures for high fidelity environmental modeling.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	41.511	50.750	46.510	-	46.510
Current President's Budget	35.912	50.750	42.244	-	42.244
Total Adjustments	-5.599	-	-4.266	-	-4.266
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-4.466	-			
• SBIR/STTR Transfer	-0.882	-			
• Program Adjustments	-	-	-3.108	-	-3.108
• Section 219 Reprogramming	-0.259	-	-	-	-
• Rate/Misc Adjustments	-	-	-1.158	-	-1.158
• Congressional General Reductions Adjustments	0.008	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *NAVAIR High Fidelity Oceanographic Library*

	FY 2010	FY 2011
	2.390	-
Congressional Add Subtotals for Project: 9999	2.390	-
Congressional Add Totals for all Projects	2.390	-

Change Summary Explanation

Schedule Changes: Block 6.4 through 6.9 on the President's Budget R-4 has been renamed LATR -5.4 Upgrade through LATR 5.9 Upgrade. No change was made to the actual schedule.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0604: <i>Training Range & Instr Dev</i>	3.686	3.335	3.452	-	3.452	3.480	3.509	3.580	3.629	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops specialized instrumentations for fleet readiness training while minimizing life cycle costs. Tasks include development of the following: LATR improvements, Test and Test & TENA interoperability and TTR infrastructure improvements to include: the Joint Display Subsystem (JDS), Low Activity Pre-Processor (LAPP), Radar Acquisition Display Subsystem (RADS), Electronic Warfare Server (EWS), Link 16 interface, TTR shipboard rotary platform technology improvements and Radiant Mercury (RM) Cross Domain Solution (CDS).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: LATR	1.938	2.100	2.145	-	2.145
Articles:	0	0	0		0
Description: Design, integrate and test modules to eliminate obsolete components in the LATR Pod. Design, integrate and test LATR software baseline upgrades. Design, integrate and test Participant Instrumentation Packages (PIP) modules to address obsolescence, high failure components and to improve operability and performance. Conduct and complete installation of the Ground System Rehosts. Conduct and complete security testing and assessment for LATR system certification and accreditation for Ground System Rehosts. Develop, test and integrate software and hardware modifications to system test sets. Develop LATR rotary wing re-size and LATR Datalink emulators. Develop, test and integrate LATR data translators. Conduct follow-on obsolescence studies to identify sub-projects required through FY16. Complete ground system and PIP refresh sub-projects, in conjunction with, semi-annual system block upgrades. Conduct LATR Operational Security (OPSEC) Posture Improvements Sub-Projects.					
FY 2010 Accomplishments: Developed and updated LATR ground software to 5.4.0. New capabilities included: Link-16 interface, display archive capability and major software enhancements requested by fleet users. Initiated LATR OPSEC posture improvements.					
FY 2011 Plans: Develop and test LATR ground software version 5.5.0. New capabilities will include: an upgraded operating system to meet Information Assurance (IA) and obsolescence issues, an EW interface and software					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
enhancements requested by fleet users. Continue LATR OPSEC posture improvements sub-project and initiate phase II Link-16 interface.					
FY 2012 Base Plans: Develop and test LATR ground software version 5.6.0. Continue LATR OPSEC posture improvements sub-project and complete phase II Link-16 interface. Continue LATR EW interface development.					
Title: TENA	0.900	0.700	0.800	-	0.800
Articles:	0	0	0		0
Description: Develop and test TTR Object Model (OM) for use with OSD TENA Software Development Agency (SDA) TENA Middleware versions 5.0-11.0. Develop TTR TENA Gateway for use with the TTR EW Server and JDS and TCTS instrumentation set. Develop TTR TENA Monitoring Tool for diagnostic use by TTR personnel and TTR System Support Activities (SSA). Develop and test TTR TENA product upgrades to be compatible with TENA SDA Middleware. Host TENA on the TTR EWS and JDS.					
FY 2010 Accomplishments: Completed development and test of TTR OM for use with OSD TENA SDA TENA Middleware versions 5.0. Completed development of TTR TENA Gateway for use with the TTR EW Server and JDS and TCTS instrumentation set. Completed development of TTR TENA Monitoring Tool for diagnostic use by TTR personnel and TTR SSA.					
FY 2011 Plans: Develop and test TTR TENA OM upgrade to be compatible with TENA SDA Middleware 6.0. Develop and test TTR TENA Gateway upgrade to be compatible with TENA SDA Middleware 6.0. Develop and test TTR TENA Monitoring Tool upgrade to be compatible with TENA SDA Middleware 6.0. Host TENA on the TTR EWS and JDS.					
FY 2012 Base Plans: Develop Graphical User Interface (GUI) for TTR TENA Monitoring Tool as requested by Fleet users. Develop and test TTR TENA 7.0 product upgrades to be compatible with evolving TENA SDA Middleware. Develop interfaces with evolving Joint TENA training events.					
Title: TTR Infrastructure	0.848	0.535	0.507	-	0.507
Articles:	0	0	0		0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: Develop and test upgrades to the JDS, LAPP, RADS, and EWS. Develop and test upgrades to the Link-16 Interface, JDS, LAPP, RADS, and EWS. Develop and test TTR shipboard and rotary platform tracking solution set.</p> <p>FY 2010 Accomplishments: Developed and tested 2010.1 & 2010.2 upgrades to the JDS, LAPP, RADS, and EWS.</p> <p>FY 2011 Plans: Develop and test 2011.1 & 2011.2 upgrades to the JDS, LAPP, RADS, and EWS. Initiate development and test of TTR shipboard and rotary platform tracking solution set.</p> <p>FY 2012 Base Plans: Develop and test 2012.1 & 2012.2 upgrades to the JDS, LAPP, RADS, and EWS. Complete Phase I of sub-project to develop and test TTR shipboard and rotary platform tracking solution set.</p>					
Accomplishments/Planned Programs Subtotals	3.686	3.335	3.452	-	3.452

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The TRID program is a non-ACAT program. The integrated program teams that develop new TRID capabilities include government and contractor engineering personnel.

E. Performance Metrics

Metric/Description:

NAWC-AD: # of LATR software product improvements and new capabilities. Successful application of system engineering processes. Design and development of improvements. Site acceptance of product improvements with no Priority 1 or 2 problem reports. Completion of 1 upgrade per year.

Tybrin Corp: # of TENA software product improvements and new capabilities. Successful design, development and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.

NAWC-WD: # of TTR upgrades per year. Successful application of system engineering processes. Design and development of improvements. Site acceptance of product improvements with no Priority 1 or 2 problem reports. Completion of 2 upgrade per year.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>
<p>Tybrin Corp: # of TTR software product improvements and new capabilities. Successful design, development, and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.</p> <p>L-3 Corp: # of TTR software product improvements and new capabilities. Successful design, development, and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD:PAX RIVER, MD	4.402	0.828	Nov 2010	0.583	Nov 2011	-		0.583	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWC-WD:CHINA LAKE, CA	3.488	0.907	Nov 2010	0.181	Nov 2011	-		0.181	0.000	4.576	
Systems Engineering	C/CPFF	TYBRIN CORP:RIDGECREST, CA	2.726	1.270	Nov 2010	1.961	Nov 2011	-		1.961	0.000	5.957	5.957
Systems Engineering	C/CPFF	L-3 CORP:RIDGECREST, CA	-	-		0.600	Nov 2011	-		0.600	0.000	0.600	0.600
Systems Engineering	WR	NSWC:CORONA, CA	-	0.110	Nov 2010	-		-		-	0.000	0.110	
Systems Engineering	WR	NAWC-TSD:ORLANDO, FL	-	0.220	Nov 2010	-		-		-	0.000	0.220	
Prior Year Prod Dev No Longer Funded in the Budget or Out Years (Systems Engineering)	Various	Various:Various	89.925	-		-		-		-	0.000	89.925	
Subtotal			100.541	3.335		3.325		-		3.325			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support No Longer Funded in the Budget or Out Years (Software Development)	Various	Various:Various	10.576	-		-		-		-	0.000	10.576	
Subtotal			10.576	-		-		-		-	0.000	10.576	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>
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	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Training Range & Instr Dev - Large Area Tracking Range																																
Acquisition Milestones																																
System Development	LATR - 5.4 UPGRADE				LATR - 5.5 UPGRADE				LATR - 5.6 UPGRADE				LATR - 5.7 UPGRADE				LATR - 5.8 UPGRADE				LATR - 5.9 UPGRADE				LATR - 6.0 UPGRADE							
	LATR - LINK-16 INTERFACE (PHASE I & II)																															
	LATR - OPSEC POSTURE IMPROVEMENTS																															
	LATR - EW INTERFACE																															
Test & Evaluation																																
Production Milestones																																
Deliveries				LATR - 5.4 ▼				LATR - 5.5 ▼				LATR - LINK-16 INTERFACE (PHASE I & II) ▼				LATR - 5.6 ▼				LATR - 5.7 ▼				LATR - 5.8 ▼				LATR - 5.9 ▼				LATR - 6.0 ▼
												LATR - OPSEC POSTURE IMPROVE ▼												LATR - EW INTERFACE ▼								

2012PB - 0204571N - 0604

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204571N: *Consolidated Trng Sys Dev*

PROJECT

0604: *Training Range & Instr Dev*

Training Range & Instr Dev - Test & Training Enabling Architecture	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
System Development																												
	TENA - 5.0				TENA - 6.0				TENA - 7.0				TENA - 8.0				TENA - 9.0				TENA - 10.0				TENA - 11.0			
Test & Evaluation																												
Production Milestones																												
Deliveries				TENA - 5.0 ▼				TENA - 6.0 ▼				TENA - 7.0 ▼				TENA - 8.0 ▼				TENA - 9.0 ▼				TENA - 10.0 ▼				TENA - 11.0 ▼

2012PB - 0204571N - 0604

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204571N: *Consolidated Trng Sys Dev*

PROJECT

0604: *Training Range & Instr Dev*

Training Range & Instr Dev - Tactical Training Ranges	FY 2010			FY 2011			FY 2012			FY 2013			FY 2014			FY 2015			FY 2016													
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q								
Acquisition Milestones																																
System Development																																
	TTR - 2010.1 + 2010.2 UPGRADE			TTR - 2011.1 + 2011.2 UPGRADE			TTR - 2011.1 + 2011.2 UPGRADE			TTR - 2013.1 + 2013.2 UPGRADE			TTR - 2014.1 + 2014.2 UPGRADE			TTR - 2015.1 + 2015.2 UPGRADE			TTR - 2016.1 + 2016.2 UPGRADE													
					TTR SHIPBOARD/ROTARY PLATFORM TRACKING SET																											
Test & Evaluation																																
Production Milestones																																
Deliveries				TTR - 2010.1 + 2010.2 ▼				TTR - 2011.1 + 2011.2 ▼				TTR - 2012.1 + 2012.2 ▼				TTR SHIP/ROTARY PLATFORM TRACKING SET ▼				TTR - 2013.1 + 2013.2 ▼				TTR - 2014.1 + 2014.2 ▼				TTR - 2015.1 + 2015.2 ▼				TTR - 2016.1 + 2016.2 ▼

2012PB - 0204571N - 0604

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Training Range & Instr Dev - Large Area Tracking Range</i>				
System Development: LATR - 5.4 UPGRADE	1	2010	4	2010
System Development: LATR - 5.5 UPGRADE	1	2011	4	2011
System Development: LATR - 5.6 UPGRADE	1	2012	4	2012
System Development: LATR - 5.7 UPGRADE	1	2013	4	2013
System Development: LATR - 5.8 UPGRADE	1	2014	4	2014
System Development: LATR - 5.9 UPGRADE	1	2015	4	2015
System Development: LATR - 6.0 UPGRADE	1	2016	4	2016
System Development: LATR - LINK-16 INTERFACE (PHASE I & II)	1	2010	2	2012
System Development: LATR - OPSEC POSTURE IMPROVEMENTS	1	2010	4	2012
System Development: LATR - EW INTERFACE	4	2010	1	2015
Production Milestones: Deliveries: LATR - 5.4 UPGRADE	4	2010	4	2010
Production Milestones: Deliveries: LATR - 5.5 UPGRADE	4	2011	4	2011
Production Milestones: Deliveries: LATR - 5.6 UPGRADE	4	2012	4	2012
Production Milestones: Deliveries: LATR - 5.7 UPGRADE	4	2013	4	2013
Production Milestones: Deliveries: LATR - 5.8 UPGRADE	4	2014	4	2014
Production Milestones: Deliveries: LATR - 5.9 UPGRADE	4	2015	4	2015
Production Milestones: Deliveries: LATR - 6.0 UPGRADE	4	2016	4	2016
Production Milestones: Deliveries: LATR - LINK-16 INTERFACE (PHASE I & II)	2	2012	2	2012
Production Milestones: Deliveries: LATR - OPSEC POSTURE IMPROVEMENTS	4	2012	4	2012
Production Milestones: Deliveries: LATR - EW INTERFACE	1	2015	1	2015
<i>Training Range & Instr Dev - Test & Training Enabling Architecture</i>				

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
System Development: TENA - 5.0	1	2010	4	2010
System Development: TENA - 6.0	1	2011	4	2011
System Development: TENA - 7.0	1	2012	4	2012
System Development: TENA - 8.0	1	2013	4	2013
System Development: TENA - 9.0	1	2014	4	2014
System Development: TENA - 10.0	1	2015	4	2015
System Development: TENA - 11.0	1	2016	4	2016
Production Milestones: Deliveries: TENA - 5.0	4	2010	4	2010
Production Milestones: Deliveries: TENA - 6.0	4	2011	4	2011
Production Milestones: Deliveries: TENA - 7.0	4	2012	4	2012
Production Milestones: Deliveries: TENA - 8.0	4	2013	4	2013
Production Milestones: Deliveries: TENA - 9.0	4	2014	4	2014
Production Milestones: Deliveries: TENA - 10.0	4	2015	4	2015
Production Milestones: Deliveries: TENA - 11.0	4	2016	4	2016
<i>Training Range & Instr Dev - Tactical Training Ranges</i>				
System Development: TTR - 2010.1 + 2010.2 UPGRADE	1	2010	4	2010
System Development: TTR - 2011.1 + 2011.2 UPGRADE	1	2011	4	2011
System Development: TTR - 2012.1 + 2012.2 UPGRADE	1	2012	4	2012
System Development: TTR - 2013.1 + 2013.2 UPGRADE	1	2013	4	2013
System Development: TTR - 2014.1 + 2014.2 UPGRADE	1	2014	4	2014
System Development: TTR - 2015.1 + 2015.2 UPGRADE	1	2015	4	2015
System Development: TTR - 2016.1 + 2016.2 UPGRADE	1	2016	4	2016
System Development: TTR SHIPBOARD/ROTARY PLATFORM TRACKING SET	1	2011	1	2013
Production Milestones: Deliveries: TTR - 2010.1 + 2010.2 UPGRADE	4	2010	4	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 0604: <i>Training Range & Instr Dev</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestones: Deliveries: TTR - 2011.1 + 2011.2 UPGRADE	4	2011	4	2011
Production Milestones: Deliveries: TTR - 2012.1 + 2012.2 UPGRADE	4	2012	4	2012
Production Milestones: Deliveries: TTR - 2013.1 + 2013.2 UPGRADE	4	2013	4	2013
Production Milestones: Deliveries: TTR - 2014.1 + 2014.2 UPGRADE	4	2014	4	2014
Production Milestones: Deliveries: TTR - 2015.1 + 2015.2 UPGRADE	4	2015	4	2015
Production Milestones: Deliveries: TTR - 2016.1 + 2016.2 UPGRADE	4	2016	4	2016
Production Milestones: Deliveries: TTR SHIPBOARD/ROTARY PLATFORM TRACKING SET	1	2011	1	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>				PROJECT 1427: <i>Surface Tactical Team Trainer (STTT)</i>				
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1427: <i>Surface Tactical Team Trainer (STTT)</i>	8.259	5.485	23.972	-	23.972	17.335	8.010	8.222	8.450	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

BFTT Program provides realistic joint warfare training across the spectrum of armed conflict, realistic unit level team training in all warfare areas (e.g. BMD missions to support IAMD capabilities). BFTT will link ships together via USFFC NCTE. BFTT is evolving to an open distributed architecture with maximum commonality across ship classes, integrating existing training systems and evolving to HLA protocols. BFTT provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organization, the Tactical Training Groups and C2F/C3F FSTs. BFTT provides a baseline capability/system that meets the Operational Requirements Document (ORD). Without an operating BFTT system, the ship will be unable to complete system level testing impacting overall combat system operational testing.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Surface Tactical Team Trainer (STTT)	8.259	5.485	23.972	-	23.972
Articles:	0	0	0	-	0
FY 2010 Accomplishments: Government Acceptance Testing (GAT), testing, certification, and safety assessment of BFTT Build 3.5; scope, design and begin development of build 3.5.1 to address database improvements, architecture and content improvements to support LSD 41/49 Class mid-life combat system upgrade; AEGIS ACB12, T46D installation on SSDS ships and continue development and integration of new software capabilities and system interfaces to address emergent requirements. Funding was also provided for a Joint Threat Emitter (JTE) Shipboard Compatibility effort.					
FY 2011 Plans: Fielding BFTT Build 3.5.1, begins development of Build 5.0 & starting requirements definition for Advanced Capability Build (ACB)14 Build 6.0					
FY 2012 Base Plans: Fielding BFTT Build 3.5.1, continue development of Build 5.0 & finish requirements definition for ACB14 Build 6.0					
Accomplishments/Planned Programs Subtotals	8.259	5.485	23.972	-	23.972

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 1427: <i>Surface Tactical Team Trainer (STTT)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPN 276200: <i>(Surface BFTT/ TSTC portion only)</i>	24.051	21.606	35.397	0.000	35.397	37.422	36.850	40.645	35.226	0.000	231.197

D. Acquisition Strategy

The BFTT acquisition strategy for system development utilizes the ACB development model, as mandated by OPNAV. Incremental acquisition and fielding, utilizing commercial off-the-shelf technology to the extent possible, is in accordance with OPNAV LTR Ser N86/9U179029 dtd 31 Jul 09.

E. Performance Metrics

NSWC Dam Neck: Number of BFTT modification product improvements and new capabilities. Successful design, development, testing and fielding of product improvements, and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports. Completion of one upgrade per ACB.

NSWC Dahlgren: Number of Test events completed. Training system interface problem resolutions documented. Safety Reviews in direct support of Element Certification.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 1427: <i>Surface Tactical Team Trainer (STTT)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	WR	NAVSEA 02/ CDSA:Dam Neck	11.926	-		0.600	Dec 2011	-		0.600	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC Dam Neck/ NSWC Dahlgren/ NAVSEA 02:Dam Neck/ NSWC Dahlgren	5.805	1.574	Dec 2010	3.254	Dec 2011	-		3.254	0.000	10.633	
Subtotal			17.731	1.574		3.854		-		3.854			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NSWC Dam Neck/ NAVSEA 02:WR/REQN	7.313	2.481	Feb 2011	15.238	Dec 2011	-		15.238	0.000	25.032	
Subtotal			7.313	2.481		15.238		-		15.238	0.000	25.032	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC PHD/NSWC Dam Neck/NAVSEA 02:WR/REQN	2.251	0.911	Dec 2010	3.458	Dec 2011	-		3.458	0.000	6.620	
Subtotal			2.251	0.911		3.458		-		3.458	0.000	6.620	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 1427: <i>Surface Tactical Team Trainer (STTT)</i>

PEO IWS Training Systems Directorate Planning

	FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
BFTT 3.5 <i>(ACB 11 & 12)</i> AEGIS	△0	△1	△4	△3	△5				△2																			
	GAT	TRR	ET&E	CERT	-----Installs-----																							
BFTT 3.5.1 <i>LSD, ACB 12, LHD</i>																												
BFTT 5.0 <i>CVN 78/ ACB14</i>																												
BFTT 6.0 <i>ACB16</i>																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 1427: <i>Surface Tactical Team Trainer (STTT)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1427				
BFTT 3.5 GAT	1	2010	1	2010
BFTT 3.5 TRR	2	2010	2	2010
BFTT 3.5 ET&T	3	2010	3	2010
BFTT 3.5 Certification	4	2010	4	2010
BFTT 3.5 Installs	2	2011	2	2012
BFTT 3.5.1 SRR	2	2010	2	2010
BFTT 3.5.1 PDR	2	2010	3	2010
BFTT 3.5.1 CDR	3	2010	3	2010
BFTT 3.5.1 TRR	2	2011	2	2011
BFTT 3.5.1 Certification	3	2012	3	2012
BFTT 5.0 CDR	2	2012	2	2012
BFTT 5.0 GAT	2	2013	2	2013
BFTT 5.0 TRR	1	2014	2	2014
BFTT 5.0 ET&E	1	2014	2	2014
BFTT 5.0 Certification	4	2014	1	2015
BFTT 6.0 SRR	1	2013	2	2013
BFTT 6.0 PDR	4	2013	1	2014
BFTT 6.0 CDR	2	2014	3	2014
BFTT 6.0 GAT	2	2015	3	2015
BFTT 6.0 TRR	4	2015	4	2015
BFTT 6.0 ET&E	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>				PROJECT 2124: <i>Air Warfare Training</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2124: <i>Air Warfare Training</i>	1.694	1.665	1.648	-	1.648	1.653	1.671	1.702	1.725	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project transitions new training system technologies for use in Naval Aviation training. Products from this effort are directly tied to the Navy Aviation Simulation Master Plan (NASMP), NASMP technology upgrades, MH-60R/S master plan, F/A-18C-F Requirements Procurement Plan (RPP), Multi-Mission Maritime Aircraft (MMA/P-8) program will support the development and design of future naval aviation training/mission rehearsal systems (fixed, deployed and unmanned). Tasks include: Advanced training systems specification development to provide for common, modular, HLA-compliant, high fidelity Distributed Mission Training (DMT) and mission rehearsal capabilities ashore and afloat. Technologies to be developed and integrated include: intelligent semi-automated forces technologies, automated performance measurement technology, advanced net-ready weapons simulation, Air to Air/Air to Ground (AA/A-G), weather server, common Mission Training Station (MTS) technologies, advanced visual-sensor technology, high resolution helmet mounted, and/or flat panel displays, 20-20 visual acuity image generation, Navy Portable Source Initiative (NPSI), common correlated data set technologies, common software/database reuse technologies, advanced environmental effects modeling, fused radar/infra-red/electro-optic and acoustic sensor simulations, physics-based infra-red simulations and final T&E within the Aviation Training Technology Integration Facility (ATTIF), NAWCAD, which is a man-in-the loop test bed for the integration of software, hardware and operational equipment. This ATTIF capability provides a window to fleet aviators for critical comment, evaluation and fine tuning of new, interoperable, and innovative technologies before final transition to the fleet. MTS, debrief/After Action Review (AAR) and intelligent training tools for the virtual environment are focused on human performance enhancements for fleet readiness and distributed mission training at all levels.

Metrics: These technology transitions will both lower Total Ownership Costs (TOC) of the training systems and life cycle costs, including: increasing visual system database re-use, reduced instructor manning profiles, software-based fidelity enhancements and increased fleet readiness by enhancing overall system fidelity to the projected operating environments. NASMP readiness improvements are conservatively forecasted at 12-35% following associated technology upgrades to stand-alone or networked simulators. Individual technology transition investments have routinely exceeded 300+% financial Return on Investment (ROI). Technology readiness levels (TRL), fleet readiness and financial metrics are used.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: HUMAN SYSTEMS INTEGRATION	0.471	0.780	0.742	-	0.742
Articles:	0	0	0		0
Description: Develop MTS and Intelligent Semi-Automated-Forces (SAF) technologies. MTS and Intelligent SAF designs lower NASMP/Platform simulator life-cycle costs. Integrate VOICE-Capable SAF component technologies, improve common instructor interface effectiveness and provide for multi-SAF exercise utilization. Analyze, develop, and integrate open architecture components for FA-18C-F, MH-60R/S, UAS, E-2C/D & USMC					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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mission areas, intelligent instructor operator components, TACAIR/MMA/Reduced Oxygen Breathing Device-Spatial Disorientation (ROBD-SD) common Graphical User Interface (GUI) initiatives, common threat system formats and Next Generation Threat System connectivity, Joint SAF compatability, performance measurement, and AAR/debrief, thereby maximizing ROI for mission training station-related technology investments.

FY 2010 Accomplishments:
 Provided modular MTS designs to lower NASMP/Platform simulator life-cycle costs. Completed the following: Integrated VOICE-Capable SAF archive technologies, improved common instructor interface effectiveness for P-8A and first phase of multi-SAF exercise utilization. Analyzed, developed and integrated open architecture component improvements for F/A-18C-F, MH-60R/S, UAS, E-2C & USMC mission areas, intelligent instructor operator components, TACAIR/MMA/ROBD-SD common GUI initiatives, common threat system formats and Next Generation Threat System connectivity, Joint SAF compatability, performance measurement, and AAR/debrief, thereby maximizing ROI for mission training station-related technology investments.

FY 2011 Plans:
 Continue to provide for modular MTS designs to lower NASMP/Platform simulator life-cycle costs for P-8A, UAS, MH-60R/S and E-2C. Integrate VOICE-Capable SAF component technologies, improve common instructor interface effectiveness and provide for mixed SAF exercise utilization. Analyze, develop, and integrate open architecture components for MH-60R/S, UAS, E-2C/D & USMC mission areas, intelligent instructor operator components, TACAIR/MMA/ROBD-SD common GUI initiatives, common threat system formats and Next Generation Threat System connectivity, Joint SAF compatability, performance measurement, and multiple Type/Model/Series (T/M/S) AAR/debrief, thereby maximizing ROI for distributed mission training station-related technology investments.

FY 2012 Base Plans:
 Provide for modular MTS designs to lower NASMP/Platform simulator upgrade life-cycle costs, integrate VOICE-Capable SAF component technologies, improve common instructor interface effectiveness and provide for multi-SAF exercise utilization. Continue to analyze, develop, and integrate open architecture components for FA-18C-F, MH-60R/S, UAS, E-2C/D & USMC mission areas, intelligent instructor operator components, TACAIR/MMA/ROBD-SD common GUI initiatives, common threat system formats and Next Generation Threat System connectivity, Joint SAF compatability, performance measurement, and AAR/debrief, thereby maximizing ROI for mission training station-related technology investments.

Title: SENSORS	0.479	0.325	0.350	-	0.350
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles:	0	0	0		0
<p>Description: Integrate common Infra-Red (IR) and Forward Looking IR sensor simulation and sensor environment fidelity upgrades with Government Off the Shelf Software (GOTS). Perform risk reduction, advanced displays T&E, integration and production of Inter-service Common Sensor Model (ICSM) for Navy DMT and legacy devices. Demonstrate GOTS capability for cost-effective database materialization, associated NPSI specifications and processes for implementation on DMT, deployed trainers, legacy, and new visual system upgrade programs. Develop texture storage, sensor-environmental effects, Sensor-Scene Environmental Radiometry Engine (SERE) NPSI material reference processes/standards, and automated technology applications for Real Time (RT) publishing, RT shadows, cultural lighting, RT combat and weather effects and very high-resolution visualization.</p> <p>FY 2010 Accomplishments: Integrated common IR and Forward Looking IR sensor simulation with GOTS. Performed risk reduction, advanced displays T&E, integration and production of ICSM for Navy DMT and legacy devices with 1st article implementation of ICSM on the ROBD-SD. Demonstrated GOTS capability for cost-effective database materialization, and develop NPSI specifications and processes for implementation on DMT, deployed trainers, legacy, and new visual system upgrade programs. Developed texture storage, sensor-environmental effects, SERE technology maturation, NPSI material reference processes/standards, and automated technology applications for RT publishing, RT shadows, cultural lighting, RT combat effects and very high-resolution visualization.</p> <p>FY 2011 Plans: Continue to integrate common IR and Forward Looking IR sensor simulation with GOTS implementations. Perform risk reduction, advanced displays T&E, integration and production of ICSM for Navy DMT and legacy devices. Demonstrate SERE GOTS capability for cost-effective database materialization, and develop associated NPSI specifications and processes for implementation on DMT, deployed trainers, legacy, and new visual system upgrade programs. Develop texture storage, weather and sensor-environmental effects, SERE Environment NPSI material reference processes/standards, and automated technology applications for RT publishing, RT shadows, cultural lighting, RT combat effects and very high-resolution visualization.</p> <p>FY 2012 Base Plans: Continue to integrate common IR and Forward Looking IR sensor simulation with GOTS implementations. Perform risk reduction, advanced displays T&E, integration and production of ICSM for Navy DMT and legacy</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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devices. Demonstrate SERE GOTS capability for cost-effective environmental effects database materialization, and develop associated NPSI specifications and processes for implementation on DMT, deployed trainers, legacy, and new visual system upgrade programs IAW NASMP priorities. Develop texture storage, weather and sensor-environmental effects, SERE Environment NPSI material reference processes/standards, and automated technology applications for RT publishing, RT shadows, cultural lighting, RT combat effects and very high-resolution sensor visualization

Title: SYSTEM ENGINEERING & INTEGRATION	0.408	0.460	0.327	-	0.327
Articles:	0	0	0		0

Description: Integrate and test open architecture Live Virtual Construct (LVC) components for Navy DMT and deployable readiness, rehearsal systems and training devices. Provide GOTS component TRL assessment for intelligent synthetic forces, tactical GUIs and performance measurement and tactical scenario-control technologies. Demonstrate low-cost LVC capable DMT & Distributed Mission readiness Trainer (DMRT) configuratons, and virtual range technologies, while maintaining or increasing fidelity. Analyze Government-off-the-shelf/Commercial-off-the-shelf (GOTS/COTS) alternatives for network centric warfare connectivity in the simulated battlespace, Network-centric Training Environment (NCTE) interoperability and human mission performance measurements while reducing training system life cycle cost. Ensure proper TRL levels for integrating software components, achieve readiness and create a financial ROI.

FY 2010 Accomplishments:
Integrated and test open architecture LVC components for Navy DMT, deployable readiness and rehearsal systems and training devices (P-8A and MH-60R initial phase). Provided GOTS component TRL assessment for intelligent synthetic forces, tactical GUIs, performance measurement and tactical scenario-control technologies. Demonstrated low-cost LVC capable DMT & DMRT configuratons, ROBD-SD and virtual range technologies while maintaining or increasing fidelity. Analyzed GOTS/COTS alternatives for network centric warfare connectivity in the simulated battlespace, interoperability, while reducing training system life cycle cost. Ensured proper TRL levels for integrating software components.

FY 2011 Plans:
Continue to integrate and test open architecture LVC components for Navy DMT, ROBD-SD and deployable readiness and rehearsal systems and training devices. Provide GOTS component TRL assessment for "mixed-SAF" intelligent synthetic forces, tactical GUIs, and tactical scenario-control technologies. Demonstrate low-cost LVC capable DMT & DMRT configuratons, and virtual range technologies, while maintaining or increasing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>fidelity. Analyze GOTS/COTS alternatives for network centric warfare connectivity in the simulated battlespace, NCTE interoperability, while reducing training system life cycle cost. Ensure proper TRL levels for integrating software components.</p> <p>FY 2012 Base Plans: Continue to integrate and test open architecture LVC components for Navy DMT and deployable readiness and rehearsal systems and training devices. Provide GOTS component TRL assessment for "mixed-SAF" intelligent synthetic forces, tactical GUIs, and tactical scenario-control technologies. Demonstrate low-cost LVC capable DMT & DMRT configuratons, and virtual range technologies, while maintaining or increasing fidelity. Analyze GOTS/COTS alternatives for network centric warfare connectivity in the simulated battlespace, NCTE interoperability, while reducing training system life cycle cost. Ensure proper TRL levels for integrating software components.</p>					
<p>Title: VISUALS</p> <p align="right">Articles:</p> <p>Description: AWTD visual engineering provide for risk mitigation and next generation visual system component test and evaluation for both stand-alone and small footprint deployable devices. Support the NASMP and Type/ Model/Series (T/M/S) programs and advanced visual system display configurations by assessing, development and incorporation of next generation technologies.</p> <p>FY 2010 Accomplishments: Supported the NASMP and T/M/S visual research programs to include the development of advanced visual system display configurations, low cost eye-went analysis and advanced Helmet-Mounted Display (HMD) using next generation technology for both stand-alone and small footprint deployable devices.</p> <p>FY 2011 Plans: Continue to support the NASMP planned upgrades and T/M/S visual research programs to include the development of advanced visual system display configurations using next generation technology for both stand-alone and small footprint deployable devices. Provide analysis of alternatives for small and medium display-projector configurations.</p> <p>FY 2012 Base Plans:</p>	0.336 0	0.100 0	0.229 0	-	0.229 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue to support the NASMP and T/M/S visual research programs to include the development of advanced visual system display configurations using next generation technology for both stand-alone and small footprint deployable devices.					
Accomplishments/Planned Programs Subtotals	1.694	1.665	1.648	-	1.648

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN/0705/1: <i>USMC Federation Simulators</i>	48.508	32.723	32.954	0.000	32.954	32.738	36.113	86.825	38.891	0.000	308.752
• APN/0705/2: <i>Fleet Aircrew Simulator Training (FAST)</i>	43.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.230
• APN/0705/3: <i>Naval Aviation Simulator Master Plan (NASMP)</i>	0.000	37.521	64.401	0.000	64.401	69.684	65.057	73.864	76.004	0.000	386.531

D. Acquisition Strategy

AWTD is a 6.7 RDT&E joint technology transition program tied to the NASMP upgrade and the various platform simulation master plans with the purpose of transitioning advanced training and mission rehearsal technologies. AWTD provides risk mitigation, test and evaluation, and prototype development for stand-alone, distributed, and deployed training systems for the warfighter utilizing an Integrated Product Team (IPT) approach and a combination of reimbursable and direct cite/cost-plus time and materials (T&M) contracts.

E. Performance Metrics

NAWC-TSD: # of transitions to Fleet Platforms. For each transition, successful TRL testing and device Ready for Training (RFT) to Fleet platforms. Seminal transition events are either RFT or tech-refresh ATO.

NAWC-AD: Complete TRL & compliance testing for NASMP and Information Assurance.

Alion Science and Technology, Inc: Initial Training Capability (ITC) passes Contractor/Government testing and evaluation.

RSC Inc: Successful Small Business Innovation Research evaluation of device testing.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering (Adv Sensor)	WR	NAWC-TSD:ORLANDO, FL	9.419	0.351	Nov 2010	0.269	Nov 2011	-		0.269	0.000	10.039	
Systems Engineering (ITST)	WR	NAWC-TSD:ORLANDO, FL	5.224	0.733	Feb 2011	-		-		-	0.000	5.957	
Systems Engineering (Visuals)	WR	NAWC-AD:PAX RIVER, MD	1.243	0.143	Feb 2011	-		-		-	0.000	1.386	
Systems Engineering (Synthetic)	WR	NPS:MONTEREY, CA	0.200	0.100	Nov 2010	-		-		-	0.000	0.300	
Systems Engineering	C/CPFF	ALION SCIENCE:NORFOLK, VA	-	-		0.456	Mar 2012	-		0.456	0.000	0.456	0.456
Systems Engineering	C/CPFF	APTIMA:CHINA LAKE, CA	-	-		0.100	Feb 2012	-		0.100	0.000	0.100	0.100
Systems Engineering	C/CPFF	RSC INC.:ORLANDO, FL	-	-		0.350	Mar 2012	-		0.350	Continuing	Continuing	Continuing
Systems Engineering	FFRDC	SANDIA, NATIONAL LAB:ALBUQUERQUE, NM	-	-		0.150	Feb 2012	-		0.150	0.000	0.150	
Subtotal			16.086	1.327		1.325		-		1.325			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Equipment Development	WR	NAWC-TSD:ORLANDO, FL	0.020	0.020	Dec 2010	-		-		-	0.000	0.040	
Prior Year Support No Longer Funded in the Budget or Out Years (Support Equipment Development)	Various	Various:Various	1.713	-		-		-		-	0.000	1.713	
Subtotal			1.733	0.020		-		-		-	0.000	1.753	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC AD:PAX RIVER, MD	5.768	0.100	Nov 2010	0.102	Nov 2011	-		0.102	0.000	5.970	
Subtotal			5.768	0.100		0.102		-		0.102	0.000	5.970	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	METI CORP:PAX RIVER, MD	0.288	0.203	Dec 2010	0.206	Dec 2011	-		0.206	0.000	0.697	0.696
Travel	PO	NAVAIR:PAX RIVER, MD	0.466	0.015	Dec 2010	0.015	Dec 2011	-		0.015	0.000	0.496	
Subtotal			0.754	0.218		0.221		-		0.221	0.000	1.193	

Remarks
PO used for travel orders.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	24.341	1.665		1.648		-		1.648			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204571N: *Consolidated Trng Sys Dev*

PROJECT

2124: *Air Warfare Training*

Air Warfare Training	FY 2010			FY 2011			FY 2012			FY 2013			FY 2014			FY 2015			FY 2016		
	1Q	2Q	3Q	1Q	2Q	3Q	1Q	2Q	3Q	1Q	2Q	3Q	1Q	2Q	3Q	1Q	2Q	3Q	1Q	2Q	3Q
Acquisition Milestones																					
Acquisition 6.7 RDT&E Milestones			Transfer to NASMP and CSP ▲			Trans to NCTE ▲			Trans to NASMP-CSP ▲			Trans to FFC-JNTC ▲			Trans to NCTE ▲			Trans to JNTC ▲			Trans to TACTRAGRU ▲
Systems Development	Risk Mitigation & Tech Component Trans to CSP, NASMP, Platforms, Dist. & Deployed Sys & LVC																				
Software Development	NASMP Upgrade Technologies																				
AWTD Support of Naval Aviation Simulation Master Plan (NASMP)	Integration and Intelligent workload reduction (12WRT) support tools																				
Weapons Server and Network Technologies																					
Instructor/Human Systems																					
Test & Evaluation																					
Technical Evaluation																					
TACAIR/MARITIME	Net ready Technologies ▼		LVC Roadmap ▼			Fallon Tests ▼			TACTAIR LVC - ITC Fallon & CLK ▼			Virtual Ranges ▼			CLK ▼			Key West ▼			TACTRAGRU PAC & LANT ▼
CDMTS & AARS									Spec/Demos												
Sensor			AARS NASMP ▼			CLK IBAR ▼			AARS NCTE-Joint ▼			NCTE ▼			Integ to JLVC ▼			Key West ▼			TACTRAGRU PAC & LANT ▼
AARS w/automated Performance Measure (PM)									Sensor stimulation (3)/Sensor Fusion												
Visual Systems			NXT-Gen HMDS ▼			JHMCS w/NVD ▼			F-35 HMDS ▼			JTFX Integ ▼			JLVC Test ▼			Key West ▼			TACTRAGRU PAC & LANT ▼
Deployed SIMS						P-8A ITC ▼			PM-JMTC ▼			PM GOTS Upgrade ▼									
			NXT-Gen Env Upgrade/SERE ▼						Adv IG/Laser ▼						20-20 Class Sys ▼						TACAIR DMRT ▼
									DMT/Sensor capable												
	DMRT Req Anal ▼		DMRT Specs ▼			ROBD-SD 1st Article ▼			Trans Maritime ▼			LVC Enhanced TACTAIR ▼			ROBD-SD Multi TMS ▼						DMRT TACTAIR net ▼
Production Milestones																					
Deliveries			LVC Init Demo ▼			MMA/NCTE ▼			JNTC-1 ▼			NCTE ▼			LVC ▼			JNTC-2 ▼			TACTRAGRU ▼
Weapons Server and Network Technologies																					
Instructor/Human Systems Integration and Intelligence			MMA ▼			NCTE ▼			JNTC ▼			P-8/NCTE ▼			LVC ▼			Joint/Coalition ▼			TACTRAGRU ▼
ATTIF Modular/Open Product Types - Integration, Test and Prototype			Visuals and Dynamic Models ▼			DMRT ▼			NET SIMS-1 ▼			NET SIMS-2 ▼			NET SIMS-3 ▼			Joint SIMS ▼			Coalition SIMS ▼

2012PB - 0204571N - 2124

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Air Warfare Training</i>				
Acquisition Milestones: Acquisition 6.7 RDT&E Milestones: Transfer to NASMP and CSP	4	2010	4	2010
Acquisition Milestones: Acquisition 6.7 RDT&E Milestones: Transfer to NCTE	4	2011	4	2011
Acquisition Milestones: Acquisition 6.7 RDT&E Milestones: Trans to NASMP-CSP	4	2012	4	2012
Acquisition Milestones: Acquisition 6.7 RDT&E Milestones: Trans to FFC-JNTC	4	2013	4	2013
Acquisition Milestones: Acquisition 6.7 RDT&E Milestones: Trans to NCTE	4	2014	4	2014
Acquisition Milestones: Acquisition 6.7 RDT&E Milestones: Trans to JNTC	4	2015	4	2015
Acquisition Milestones: Acquisition 6.7 RDT&E Milestones: Trans to TACTRAGRU	4	2016	4	2016
Systems Development: AWTD Support of Naval Aviation Simulation Master Plan (NASMP): AWTD Support of Naval Aviation Simulation Master Plan (NASMP)	1	2010	4	2016
Systems Development: Weapons Server and Network Technologies: NASMP Upgrade Technologies	1	2010	4	2016
Systems Development: Instructor/Human Systems: Integration and Intelligent workload reduction (12WRT) support tools	1	2010	4	2016
Test & Evaluation: TACAIR/MARITIME: Net ready Technologies	1	2010	1	2010
Test & Evaluation: TACAIR/MARITIME: LVC Roadmap	4	2010	4	2010
Test & Evaluation: TACAIR/MARITIME: Fallon Tests	4	2011	4	2011
Test & Evaluation: TACAIR/MARITIME: TACTAIR LVC - ITC Fallon & CLK	4	2012	4	2012
Test & Evaluation: TACAIR/MARITIME: Virtual Ranges	4	2013	4	2013
Test & Evaluation: TACAIR/MARITIME: CLK	4	2014	4	2014
Test & Evaluation: TACAIR/MARITIME: Key West	4	2015	4	2015
Test & Evaluation: TACAIR/MARITIME: TACTRAGRU PAC & LANT	4	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluation: CDMTS & AARS: Spec/Demos	1	2010	4	2016
Test & Evaluation: CDMTS & AARS: AARS NASMP	4	2010	4	2010
Test & Evaluation: CDMTS & AARS: CLK IBAR	4	2011	4	2011
Test & Evaluation: CDMTS & AARS: AARS NCTE-Joint	4	2012	4	2012
Test & Evaluation: CDMTS & AARS: NCTE	4	2013	4	2013
Test & Evaluation: CDMTS & AARS: Integ to JLVC	4	2014	4	2014
Test & Evaluation: CDMTS & AARS: Key West	4	2015	4	2015
Test & Evaluation: CDMTS & AARS: TACTRAGRU PAC & LANT	4	2016	4	2016
Test & Evaluation: Sensor: Sensor stimulation (3)/Sensor Fusion	1	2010	4	2016
Test & Evaluation: Sensor: NXT-Gen HMDS	4	2010	4	2010
Test & Evaluation: Sensor: JHMCS w/NVD	4	2011	4	2011
Test & Evaluation: Sensor: F-35 HMDS	4	2012	4	2012
Test & Evaluation: Sensor: JTFX Integ	4	2013	4	2013
Test & Evaluation: Sensor: JLVC Test	4	2014	4	2014
Test & Evaluation: Sensor: Key West	4	2015	4	2015
Test & Evaluation: Sensor: TACTRAGRU PAC & LANT	4	2016	4	2016
Test & Evaluation: AARS w/automated Performance Measure (PM): P-8A ITC	4	2011	4	2011
Test & Evaluation: AARS w/automated Performance Measure (PM): PM-JMTC	4	2012	4	2012
Test & Evaluation: AARS w/automated Performance Measure (PM): PM GOTS Upgrade	4	2013	4	2013
Test & Evaluation: Visual Systems: Common Sensor Models/Env, Adv sensor-capable NPSI, collaborative sensor/env depiction for MR & DMRT	1	2010	4	2016
Test & Evaluation: Visual Systems: NXT Gen Env Upgrade/SERE	4	2010	4	2010
Test & Evaluation: Visual Systems: Adv IG/Laser	4	2012	4	2012
Test & Evaluation: Visual Systems: 20-20 Class Sys	4	2014	4	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluation: Visual Systems: TACAIR DMRT	4	2016	4	2016
Test & Evaluation: Deployed SIMS: DMT/Sensor capable	1	2010	4	2016
Test & Evaluation: Deployed SIMS: DMRT Req Anal	1	2010	1	2010
Test & Evaluation: Deployed SIMS: DMRT Specs	4	2010	4	2010
Test & Evaluation: Deployed SIMS: ROBD-SD 1st Article	1	2011	1	2011
Test & Evaluation: Deployed SIMS: Trans Maritime	4	2012	4	2012
Test & Evaluation: Deployed SIMS: LVC Enhanced TACTAIR	4	2013	4	2013
Test & Evaluation: Deployed SIMS: ROBD-SD Mult TMS	4	2014	4	2014
Test & Evaluation: Deployed SIMS: DMRT TACTAIR net	4	2016	4	2016
Deliveries: Weapons Server and Network Technologies: LVC Init Demo	4	2010	4	2010
Deliveries: Weapons Server and Network Technologies: MMA/NCTE	4	2011	4	2011
Deliveries: Weapons Server and Network Technologies: JNTC-1	4	2012	4	2012
Deliveries: Weapons Server and Network Technologies: NCTE	4	2013	4	2013
Deliveries: Weapons Server and Network Technologies: LVC	4	2014	4	2014
Deliveries: Weapons Server and Network Technologies: JNTC-2	4	2015	4	2015
Deliveries: Weapons Server and Network Technologies: TACTRAGRU	4	2016	4	2016
Deliveries: Instructor/Human Systems Integration and Intelligence: MMA	4	2010	4	2010
Deliveries: Instructor/Human Systems Integration and Intelligence: NCTE	4	2011	4	2011
Deliveries: Instructor/Human Systems Integration and Intelligence: JNTC	4	2012	4	2012
Deliveries: Instructor/Human Systems Integration and Intelligence: P-8/NCTE	4	2013	4	2013
Deliveries: Instructor/Human Systems Integration and Intelligence: LVC	4	2014	4	2014
Deliveries: Instructor/Human Systems Integration and Intelligence: Joint/Coalition	4	2015	4	2015
Deliveries: Instructor/Human Systems Integration and Intelligence: TACTRAGRU	4	2016	4	2016
	4	2010	4	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 2124: <i>Air Warfare Training</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: ATTIF Modular/Open Product Types - Integration, Test and Prototype: Visuals and Dynamic Models				
Deliveries: ATTIF Modular/Open Product Types - Integration, Test and Prototype: DMRT	4	2011	4	2011
Deliveries: ATTIF Modular/Open Product Types - Integration, Test and Prototype: NET SIMS-1	4	2012	4	2012
Deliveries: ATTIF Modular/Open Product Types - Integration, Test and Prototype: NET SIMS-2	4	2013	4	2013
Deliveries: ATTIF Modular/Open Product Types - Integration, Test and Prototype: NET SIMS-3	4	2014	4	2014
Deliveries: ATTIF Modular/Open Product Types - Integration, Test and Prototype: Joint SIMS	4	2015	4	2015
Deliveries: ATTIF Modular/Open Product Types - Integration, Test and Prototype: Coalition SIMS	4	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>				PROJECT 3087: <i>Curriculum & Trainer Development</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3087: <i>Curriculum & Trainer Development</i>	13.911	24.146	-	-	-	-	-	-	-	0.000	38.057
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

TSTC supports DoD Training Transformation and the updated Surface Warfare Training Manual COMNAVSURFOR INST 3502.01D (1 July 07) requirements which call for continuous learning and realistic mission training environments with measurable warfighter performance linked to readiness across the training continuum from in-port CONUS to in-theater mission rehearsal. TSTC Spiral 1 ship and shore based capabilities are critical to accomplishing Fleet Training Board of Directors strategy and objectives for warfighting performance improvements in the areas of ASW, BMD, and Surface Warfare and Information Warfare improvements. The TSTC Combat System Trainer (CST) enhancements to ship and shore trainers shall employ a spiral development process to allow continuous incremental implementation of core training system functionality and critical warfighting training capabilities in multiple mission areas as prioritized by the Fleet. TSTC will improve upon the current embedded trainer and interface interoperability limitations and model databases by developing the requisite architecture and associated computer programs to facilitate the transition to HLA and common modeling, scenario generation and control and assessment. Migration to TSTC is required to ensure continued, persistent FST interoperability via the NTCE. TSTC will integrate existing and emergent onboard training and assessment system capabilities to simulate realistic, train like you fight, combat-like conditions across combat systems, engineering, damage control and navigation systems. It shall provide a continuous shipboard organic learning environment through On-Demand, Just In Time, scenario-driven, Objective Based Training, and mission rehearsal capabilities initially available in port, and ultimately underway and in-theater.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Curriculum & Trainer Development	13.911	24.146	-	-	-
Articles:	0	0			
Description: Funds development of ship and shore TSTC core capabilities. TSTC shall be implemented as a System of Systems (SoS) capability. In the near term, TSTC development is focused on Combat Systems improvements and Navigation and Engineering trainer integration. In the long term, TSTC may expand to include Damage Control, Logistics, Aviation, Visit, Board, Search, and Seizure, Medical, Sentry/Lookout, Intelligence, and Security Force training. Development of TSTC Spiral 1 includes development of the completely redesigned, re-architected, and enhanced CST with the following characteristics: decoupled models and entity database; FST HLA compatibility; FST filtering improved training system usability; readiness based assessment objective based planning; and high band width encryption. TSTC shall integrate internal environments and interoperate with external environments via the NCTE. The TSTC common integrating element will be the Training Management System (TMS) capability. Establishing the architecture of the TMS is also					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3087: <i>Curriculum & Trainer Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>part of TSTC Spiral 1 development. The need for transforming training is documented within the Office of Force Transformation Military Transformation Initiative, DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan, and Commander United States Fleet Forces Command Fleet Readiness Training Plan. TSTC efforts include scenario development, knowledge management, common environment system/software engineering, technical system design, software design, safety assessment, program management, software development, system integration, test and evaluation and logistics support. Prototypes of the various TSTC hardware and software subsystems will be designed and documented in design specifications.</p> <p><i>FY 2010 Accomplishments:</i> Planned Accomplishments: Commence overall TSTC design. For all identified requirements for TSTC Baseline 1, development of TSTC will start the Design Phase for the TMS Services. The combat system stimulation elements of the CST component support the stimulation of a training environment for the AEGIS modernization and CVN 78 platforms. ASW, BMD, IW enhanced Warfighter capabilities and requirements identified shall start development. Integration of the Service Oriented Architecture elements of TMS shall start design phase to allow integration of planning and assessment tools into shipboard training systems. Requirements engineering for the SSDS CVNs.</p> <p><i>FY 2011 Plans:</i> Planned Accomplishments - Continue development, prototyping and element testing.</p>					
Accomplishments/Planned Programs Subtotals	13.911	24.146	-	-	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN 276200: <i>(Surface (N86) BFTT/TSTC portion only)</i>	24.051	21.606	35.397	0.000	35.397	37.422	36.850	40.645	35.226	0.000	231.197

D. Acquisition Strategy

The TSTC acquisition strategy for system development utilizes the spiral development model, as mandated by OSD and incremental acquisition and fielding, utilizing commercial off-the-shelf technology to the extent possible.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3087: <i>Curriculum & Trainer Development</i>

E. Performance Metrics

NSWC Dam Neck: # of BFTT/TSTC software and hardware product improvements and new capabilities. Successful design, development, and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.

NSWC Dahlgren: # of Test events and Training System interface problem resolutions documented. Successful application of system engineering processes. Safety Reviews in direct support of Element Certifications. Completion of 1 upgrade per year.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3087: <i>Curriculum & Trainer Development</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	CDSA Contracts: Virginia Beach, VA	2.200	0.600	Mar 2011	-		-		-	0.000	2.800	
Systems Engineering	WR	NSWC PHD/CDSA/ NUWC Newport/ NSWC Dahlgren/ NAVSEA:PHD, CA/ Virginia Beach,VA/ Newport, RI	4.570	1.754	Dec 2010	-		-		-	0.000	6.324	
Subtotal			6.770	2.354		-		-		-	0.000	9.124	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NSWC PHD/CDSA/ NUWC Newport/ NSWC: Dahlgren/ NAVSEA 02	11.381	16.676	Mar 2011	-		-		-	0.000	28.057	
Technical Documentation	WR	NSWC PHD/CDSA/ NUWC: Newport/NSWC Dahlgren/NAVSEA 02	0.548	-		-		-		-	0.000	0.548	
Subtotal			11.929	16.676		-		-		-	0.000	28.605	



Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC PHD/ CDSA:PHD,CA/Virginia Beach,VA	1.470	2.558	Dec 2010	-		-		-	0.000	4.028	
Subtotal			1.470	2.558		-		-		-	0.000	4.028	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3087: <i>Curriculum & Trainer Development</i>

PEO IWS Training Systems Directorate Planning

FY2010				FY2011				FY2012				FY2013				FY2014				FY2015				FY2016			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
TSTC 5.0 <i>CVN 78/ACB14</i>				  SRR PDR																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3087: <i>Curriculum & Trainer Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3087</i>				
TSTC SRR 5.0	1	2011	2	2011
TSTC PDR 5.0	3	2011	3	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3093: <i>TACTS/LATR Replacement</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3093: <i>TACTS/LATR Replacement</i>	5.972	16.119	13.172	-	13.172	8.771	8.771	8.957	9.079	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

TCTS will provide the Navy a replacement for major portions of the TACTS and LATR systems. TCTS will also provide fleet deployable training for at-sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Initial fielding of a NDI Pod system was at NAS Key West and Beaufort. The program incorporates an evolutionary development (incremental) towards a system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant weapons system stimulation, open architecture and a high capacity/long range secure data link. The Milestone Decision Authority (MDA) approved program rebaseline on May 23, 2005.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: TACTS/LATR REPLACEMENT	5.972	16.119	13.172	-	13.172
Articles:	0	0	0		0
<p>Description: TCTS: Qualify and complete the NDI Rangeless Pod system fielded at NAS Key West and Beaufort, including the complete Integrated Logistics products and training. Define Test and TENA compliant interface between TCTS and an Advance Display System (ADS). Develop F/A-18 (C/D/E/F) and AV-8B Internal Subsystem and began qualification testing. Initiate development of the Fixed Ground Subsystem and data link uplink control for fielding at larger navy training ranges. Develop and deliver Integrated Logistics products for the IS and for fielding the TCTS system for deployed and fixed Range applications. Initiate the development of a Rack-Mounted subsystem for use on rotary wing and transport aircraft. Continue development of the Advanced Data Link (ADL) waveform and the Joint Tactical Radio System (JTRS) advance data link. Address and fund development of the JTRS radio and synchronize the budget to schedule. Develop shipboard ground subsystem and related training range integration.</p> <p>FY 2010 Accomplishments: Completed SFF-K Critical Design Review with transition to development of JTRS SFF-K radio. Coordinate ADL development with National Security Agency (NSA) to support encryption certification.</p> <p>FY 2011 Plans: Plan delivery of JTRS SFF-K Engineering Development Model (EDM) to support integration of ADL with TCTS participant and ground subsystems. Conduct TCTS ADL integration Preliminary Design Review. Coordinate</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3093: <i>TACTS/LATR Replacement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
ADL development with NSA to support encryption certification. Release Request for Proposal for ADL integration contract with associated activities to support contract award.					
<i>FY 2012 Base Plans:</i> Begin ADL integration activities into TCTS and conduct integration Critical Design Review.					
Accomplishments/Planned Programs Subtotals	5.972	16.119	13.172	-	13.172

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/4204: <i>Weapons Range Support Equipment (WRSE)/TCTS</i>	5.338	5.200	5.156	0.000	5.156	5.276	5.427	5.474	5.587	0.000	37.458
• APN/0725: <i>Other Production Charges/Tactical Combat Training System (TCTS)</i>	23.787	7.579	10.124	4.100	14.224	12.244	14.010	14.239	15.638	0.000	101.721

D. Acquisition Strategy
TCTS will employ an evolutionary incremental acquisition strategy to procure base NDI Systems and provide for the development of the system to meet the full Operational Requirements Document requirements. TCTS is a cooperative program with the USAF P5 Combat Training System program. The USAF awarded a 10-year contract in June 2003.

E. Performance Metrics
General Dynamics: NSA approved JTRS SFF-K . Successful Engineering Development Model testing of JTRS SFF-K performance requirements with NSA and Joint Threat Emitter.

Cubic DAI: Integration of JTRS SFF-K with TCTS equipment. Full integration of JTRS SFF-K with TCTS equipment.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3093: <i>TACTS/LATR Replacement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Primary Hardware Development	SS/CPAF	GENERAL DYNAMICS:SCOTTSDALE, AZ	-	-		1.784	Mar 2012	-		1.784	Continuing	Continuing	Continuing
Award Fees	SS/CPAF	GENERAL DYNAMICS:SCOTTSDALE, AZ	1.090	-		0.243	Mar 2012	-		0.243	0.000	1.333	1.333
Primary Hardware Development	SS/CPAF	CUBIC DEFENSE APPL:SAN DIEGO, CA	9.811	-		-		-		-	0.000	9.811	9.811
Subtotal			10.901	-		2.027		-		2.027			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Software Development	SS/CPAF	CUBIC DEFENSE APPL:SAN DIEGO, CA	12.058	10.960	Nov 2010	7.396	Dec 2011	-		7.396	0.000	30.414	30.414
Award Fees	C/CPAF	CUBIC DEFENSE APPL:SAN DIEGO, CA	1.530	-		1.009	Dec 2011	-		1.009	0.000	2.539	2.539
Software Development	SS/CPAF	GENERAL DYNAMICS:SCOTTSDALE, AZ	3.800	1.748	Nov 2010	-		-		-	0.000	5.548	5.548
Software Development	SS/CPAF	ROCKWELL COLLINS:CEDAR RAPIDS, IA	4.562	-		-		-		-	0.000	4.562	4.562
Integrated Logistics Support	SS/CPAF	CUBIC DEFENSE APPL:SAN DIEGO, CA	-	1.907	Nov 2010	-		-		-	0.000	1.907	1.907
Prior Year Support No Longer Funded in the Budget or Out Years (Software Development)	Various	VARIOUS:VARIOUS	1.462	-		-		-		-	0.000	1.462	
Subtotal			23.412	14.615		8.405		-		8.405	0.000	46.432	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3093: <i>TACTS/LATR Replacement</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Operational Test & Evaluation	WR	OPER T&E:NORFOLK, VA	0.043	-		0.080	Nov 2011	-		0.080	0.000	0.123	
Developmental Test & Evaluation	WR	NAWC-AD:PAX RIVER, MD	-	0.300	Nov 2010	0.700	Nov 2011	-		0.700	0.000	1.000	
Prior Year T&E No Longer Funded in the Budget or Out Years (Developmental Test & Evaluation)	Various	VARIOUS:VARIOUS	3.382	-		-		-		-	0.000	3.382	
Subtotal			3.425	0.300		0.780		-		0.780	0.000	4.505	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Contractor Engineering Support	C/CPFF	TYBRIN:CHINA LAKE, CA	-	-		0.764	Nov 2011	-		0.764	0.000	0.764	0.764
Contractor Engineering Support	C/CPFF	SRI:INDIAN HEAD, MD	-	-		0.050	Nov 2011	-		0.050	0.000	0.050	0.050
Contractor Engineering Support	C/CPFF	CUBIC DEFENSE:SAN DIEGO, CA	-	-		0.200	Jan 2012	-		0.200	0.000	0.200	0.200
Government Engineering Support	WR	NSWC:INDIAN HEAD, MD	-	-		0.081	Nov 2011	-		0.081	0.000	0.081	
Government Engineering Support	WR	NAWC-WD:CHINA LAKE, CA	-	-		0.300	Nov 2011	-		0.300	0.000	0.300	
Travel	WR	VARIOUS:VARIOUS	0.016	0.002	Nov 2010	0.042	Nov 2011	-		0.042	0.000	0.060	
Government Engineering Support	WR	NAWC-AD:PAX RIVER, MD	-	1.052	Nov 2010	0.523	Nov 2011	-		0.523	0.000	1.575	
Contractor Engineering Support	WR	NAWC-WD:CHINA LAKE, CA	-	0.150	Nov 2010	-		-		-	0.000	0.150	
Prior Year Mgmt No Longer Funded in the Budget or Out	Various	VARIOUS:VARIOUS	7.008	-		-		-		-	0.000	7.008	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204571N: *Consolidated Trng Sys Dev*

PROJECT

3093: *TACTS/LATR Replacement*

TACTS/LATR Replacement	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones	Phase 5 MS B ▲								Phase 4 MS C ▲																			
Systems Development	Phase 1 NDI - Transportable (GS, AS)																											
	Phase 2 Internal Subsystem (IS)																											
	Phase 3 Rack Mounted Subsystem (RS)																											
									Phase 4 Advanced Datalink.																			
													Phase 5 Battle Group.															
Test & Evaluation																												
Production Milestones	Phase 1 - NDI - Transportable (GS, AS)																											
	Phase 2 - Internal Subsystem (IS)																											
	Phase 3 Rack-Mount Subsystem (RS)																											
									Phase 4 Advanced Datalink																			
									Phase 4 - LRIP ▼																			
													Phase 5 Battle Group															
NDI - Transportable (GS, AS) Deliveries																												

2012PB - 0204571N - 3093

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 3093: <i>TACTS/LATR Replacement</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
TACTS/LATR Replacement				
Acquisition Milestones: Phase 5 MS B	1	2010	1	2010
Acquisition Milestones: Phase 4 MS C	4	2012	4	2012
Systems Development: NDI - Transportable (GS, AS)	1	2010	4	2011
Systems Development: Phase 2 - Internal Subsystem (IS) & Rack Mounted Subsystem (RS)	1	2010	4	2011
Systems Development: Phase 4 Advanced Datalink.	1	2010	4	2016
Systems Development: Phase 5 Battle Group.	1	2011	4	2016
Production Milestones: Phase 1 - NDI - Transportable (GS, AS)	1	2010	1	2012
Production Milestones: Phase 2 - Internal Subsystem (IS) & Rack-Mount Subsystem (RS)	1	2010	1	2012
Production Milestones: Phase 4 Advanced Datalink	4	2010	4	2016
Production Milestones: Phase 4 - LRIP	4	2012	4	2012
Production Milestones: Phase 5 Battle Group	1	2012	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204571N: <i>Consolidated Trng Sys Dev</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	2.390	-	-	-	-	-	-	-	-	0.000	2.390
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Congressional Add

A. Mission Description and Budget Item Justification

NAVAIR High Fidelity Oceanographic Library: Develop algorithms for deep water multistatic active sonar simulation, investigate and incorporate higher fidelity ocean model algorithms, facilitate flexibility in scenario generation and modify existing Ocean Model engineering tool to facilitate test and debug. Research new algorithms for real-time ocean modeling scheduling, parallel computing and new database architectures for high fidelity environmental modeling.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: NAVAIR High Fidelity Oceanographic Library	2.390	-
FY 2010 Accomplishments: Developed algorithms for deep water multistatic active sonar simulation, investigated and incorporated higher fidelity ocean model algorithms, facilitated flexibility in scenario generation and modified existing Ocean Model engineering tools to facilitate test and debug. Researched new algorithms for real-time ocean modeling scheduling, parallel computing and new database architectures for high fidelity environmental modeling.		
Congressional Adds Subtotals	2.390	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not required for Congressional Adds.

E. Performance Metrics

Not required for Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE										
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0204574N: <i>Cryptologic Direct Support</i>										
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	1.602	1.519	1.447	-	1.447	1.757	1.798	1.835	1.869	Continuing	Continuing
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	1.602	1.519	1.447	-	1.447	1.757	1.798	1.835	1.869	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program develops state-of-the-art signal acquisition software in response to Combatant Command requirements for a quick-reaction surface, subsurface, and airborne cryptologic carry-on capability. There are approximately 100 cryptologic capable surface ships in the current Navy inventory. Each of these ships is a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, numerous subsurface and air platforms are potential users. This funding line will provide the resources to enable rapid transition of available Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) technologies that apply to Fleet requirements for carry-on system functionalities. These technologies typically require various levels of integration to leverage on-board systems that provide system and mission management, product reporting, and data analysis. COTS/GOTS system documentation and training materials usually require adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Before deployment for operational use, systems must be systematically tested to ensure suitable and reliable operation, tested for network vulnerabilities if connected to shipboard Local Area Networks, and tested relative to interoperability requirements. Certification testing is conducted to meet Office of Naval Intelligence security requirements and network testing is conducted in accordance with Information Technology (IT)-21 requirements to allow connection to Navy networks. This Research, Development, Test & Evaluation will also provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of all other carry-on subsystems to meet emergent requirements.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	1.602	1.519	1.567	-	1.567
Current President's Budget	1.602	1.519	1.447	-	1.447
Total Adjustments	-	-	-0.120	-	-0.120
• Congressional General Reductions					
• Congressional Directed Reductions					
• Congressional Rescissions	-	-			
• Congressional Adds					
• Congressional Directed Transfers					
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-0.109	-	-0.109
• Rate/Misc Adjustments	-	-	-0.011	-	-0.011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204574N: *Cryptologic Direct Support*

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0204574N: <i>Cryptologic Direct Support</i>				PROJECT 3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>	1.602	1.519	1.447	-	1.447	1.757	1.798	1.835	1.869	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program program develops state-of-the-art signal acquisition software in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability. There are approximately 100 cryptologic capable surface ships in the current Navy inventory. Each of these ships is a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, there are numerous subsurface and air platforms that are also potential users. This funding line will provide the resources to enable rapid transition of available Commercial Off-The-Shelf (COTS) and Government Off -The-Shelf (GOTS) technologies that apply to Fleet requirements for carry-on system functionalities. These technologies typically require various levels of integration to leverage on-board systems that provide system and mission management, product reporting, and data analysis. COTS/GOTS system documentation and training materials usually require adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Before deployment for operational use, systems must be systematically tested to ensure suitable and reliable operation, tested for network vulnerabilities if connected to shipboard Local Area Networks, and tested relative to interoperability requirements. Certification testing is conducted to meet Office of Naval Intelligence security requirements and network testing is conducted in accordance with Information Technology (IT)-21 requirements to allow connection to Navy networks. This Research, Development, Test & Evaluation will also provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of all other carry-on subsystems to meet emergent requirements.

FY12 funds will continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the Signals of Interest (SOI) and target threat list. Funds will continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Additional funds will aid in the development of new SOI algorithms in support of cryptologic systems.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Advanced Cryptological Sys Eng (CCOP)	1.602	1.519	1.447
Articles:	0	0	0
FY 2010 Accomplishments: Integrated, tested, and documented identified COTS and GOTS technologies and subsystems that met emergent and on-going Fleet requirements as specified in the FY10 SOI and target threat list. Continued to develop upgrades to existing systems and subsystems according to Fleet requirements. Developed new SOI algorithms in support of cryptologic systems.			
FY 2011 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204574N: <i>Cryptologic Direct Support</i>	PROJECT 3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the FY11 SOI and target threat list. Continue to develop upgrades to existing systems and subsystems according to Fleet requirements.			
<i>FY 2012 Plans:</i> Continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the FY12 SOI and target threat list. Continue to develop upgrades to existing systems and subsystems according to Fleet requirements.			
Accomplishments/Planned Programs Subtotals	1.602	1.519	1.447

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN / 3501: <i>Cryptologic Communications Equipment</i>	11.581	12.834	10.173	0.000	10.173	10.625	10.813	11.052	11.249	Continuing	Continuing

D. Acquisition Strategy

Acquisition, management, and contracting strategies are to support engineering and manufacturing development by providing funds to Space and Naval Warfare (SPAWAR) Systems Centers Atlantic and Pacific, and miscellaneous contractors with management oversight by SPAWAR.

E. Performance Metrics

Cryptologic Carry On Program (CCOP) program will deliver state-of-the-art signal acquisition software for CCOP systems in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability. There are approximately 250 CCOP systems in inventory.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204574N: <i>Cryptologic Direct Support</i>	PROJECT 3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Various	Various:Various	1.915	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Classified Contract:Classified Contract	-	0.197	Dec 2010	0.210	Dec 2011	-		0.210	Continuing	Continuing	Continuing
Subtotal			1.915	0.197		0.210		-		0.210			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Various:Various	6.109	-		-		-		-	Continuing	Continuing	Continuing
Software Development	C/CPFF	Classified Contract:Classified Contract	-	0.552	Dec 2010	0.560	Dec 2011	-		0.560	Continuing	Continuing	Continuing
Software Development	WR	SSC PAC:San Diego, CA	-	0.310	Dec 2010	0.310	Dec 2011	-		0.310	Continuing	Continuing	Continuing
Software Development	WR	SSC LANT:Charleston, SC	-	0.165	Dec 2010	0.170	Dec 2011	-		0.170	Continuing	Continuing	Continuing
Subtotal			6.109	1.027		1.040		-		1.040			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various:Various	0.333	-		-		-		-	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NPGS:Monterey, CA	-	0.054	Dec 2010	0.050	Dec 2011	-		0.050	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	OPTEVFOR:Norfolk, VA	-	0.012	Dec 2010	0.012	Dec 2011	-		0.012	Continuing	Continuing	Continuing
Subtotal			0.333	0.066		0.062		-		0.062			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0204574N: *Cryptologic Direct Support*

PROJECT

3091: *Advanced Cryptological Sys Eng (CCOP)*

Fiscal Year	2010				2011				2012				2013				2014				2015				2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prototype Phase	■				▢				▢				▢				▢				▢				▢			
System Development	▲ SDR				△ SDR				△ SDR				△ SDR				△ SDR				△ SDR				△ SDR			
Software Delivery	▲				△				△				△				△				△				△			
T&E Milestones	OA				OA				OA				OA				OA				OA				OA			
Operational Assessment	▲				△				△				△				△				△				△			

Notes:

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204574N: <i>Cryptologic Direct Support</i>	PROJECT 3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3091				
Prototype Phase	1	2010	4	2016
System Design Review (SDR) - 2010	2	2010	2	2010
System Design Review (SDR) - 2011	2	2011	2	2011
System Design Review (SDR) - 2012	2	2012	2	2012
System Design Review (SDR) - 2013	2	2013	2	2013
System Design Review (SDR) - 2014	2	2014	2	2014
System Design Review (SDR) - 2015	2	2015	2	2015
System Design Review (SDR) - 2016	2	2016	2	2016
Software Delivery - 2010	3	2010	4	2010
Software Delivery - 2011	3	2011	4	2011
Software Delivery - 2012	3	2012	4	2012
Software Delivery - 2013	3	2013	4	2013
Software Delivery - 2014	3	2014	4	2014
Software Delivery - 2015	3	2015	4	2015
Software Delivery - 2016	3	2016	4	2016
Operational Assessment (OA) - 2010	3	2010	3	2010
Operational Assessment (OA) - 2011	3	2011	3	2011
Operational Assessment (OA) - 2012	3	2012	3	2012
Operational Assessment (OA) - 2013	3	2013	3	2013
Operational Assessment (OA) - 2014	3	2014	3	2014
Operational Assessment (OA) - 2015	3	2015	3	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204574N: <i>Cryptologic Direct Support</i>	PROJECT 3091: <i>Advanced Cryptological Sys Eng (CCOP)</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Operational Assessment (OA) - 2016	3	2016	3	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0204575N: <i>Elect Warfare Readiness Supt</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	34.267	39.398	18.142	-	18.142	19.985	19.894	16.476	15.920	Continuing	Continuing
2263: <i>Information Warfare System</i>	34.267	39.398	18.142	-	18.142	19.985	19.894	16.476	15.920	Continuing	Continuing

A. Mission Description and Budget Item Justification

Research, assess, and develop information warfare capabilities.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	37.368	39.398	51.800	-	51.800
Current President's Budget	34.267	39.398	18.142	-	18.142
Total Adjustments	-3.101	-	-33.658	-	-33.658
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.032	-			
• SBIR/STTR Transfer	-0.968	-			
• Program Adjustments	-	-	-33.527	-	-33.527
• Section 219 Reprogramming	-0.100	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.131	-	-0.131
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Change Summary Explanation

The reduction in FY 2012 from PB 2011 reflects the transfer of efforts and funds for Graywing and Medusa to PE 0304785N as well as a reduction in DOD Service Support Contractors. The realignment of funds reflects a change in focus to large/longer term acquisition efforts to fast paced agile acquisition efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2263: <i>Information Warfare System</i>	34.267	39.398	18.142	-	18.142	19.985	19.894	16.476	15.920	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Information Operations (IO) Mission Management: Develops command and control mechanism for remote use of Electronic Attack (EA) assets to include frequency, antenna alignment and weapon firing data transfer. Develops a modeling and simulation laboratory for the program office to use in the development, intended effect, and risk reduction of new EA capabilities.

IO Counter Measure (CM) Capability Research and Development. Develops software to account for antenna modeling, weather calculations, radio frequency modeling, signals mapping and terrain modeling for warfighter use in configuring optimal EA from afloat.

Maritime Cryptologic Systems for the 21st Century (MCS-21) Systems Development and Support: Develops and fields spiral EA capabilities against Fleet Forces Command prioritized signals and target sets. EA capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface IO platforms (Classic Troll, Banshee and SSEE-Inc E/ F.) Also included is the Navy's investment in Integrated Communications and Data System (ICADS) proof of concept system.

Research, Analysis and Research and Development Technical Support: Conducts vulnerability analysis and reverse engineering on emerging threats and targets and provides specialized technical, engineering and management support to the program management office. (Specific details held at a higher classification level.)

Computer Network Operations (CNO): Funds development and testing of adversary target networks for modeling, simulation, and tailoring of CNO capabilities. Develops specific CNO capabilities to be used against adversary networks. Supports Electronic Target Folder database which provides a means of sharing and storing common CNO data. Studies unique adversary CNO vulnerabilities for exploitation. (Specific development details held at a higher classification level.)

Increasing emphasis on Ballistic Missile Defense/High Value Units and Red Flash will provide additional and/or enhanced IO capabilities to enable operations plans and support major combat operations scenarios. This effort leverages and continues the development of CNO capabilities and also provides for the delivery of two MCS21 mobile/ground components. (Specific development and capability details are held at a higher classification level.)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Information Warfare System/IO Mission Management	3.797	3.869	1.297
Articles:	0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>Description: IO Mission Management: Develops command and control mechanism for remote use of EA assets to include frequency, antenna alignment and weapon firing data transfer. Develops a modeling and simulation laboratory for the program office to use in the development, intended effect, and risk reduction of new EA capabilities.</p> <p>FY 2010 Accomplishments: Continued the following programs task requirements: Radio Frequency (RF) Propagation Modeling Mission Planning Optimization & Tasking Services (MPOTS) Contractor Engineering Support</p> <p>FY 2011 Plans: Continue the following programs task requirements: RF Propagation Modeling MPOTS Contractor Engineering Support</p> <p>FY 2012 Plans: Continue the following programs task requirements: RF Propagation Modeling MPOTS</p>				
<p>Title: Electronic Warfare/Information Operation Counter Measure Capability Research & Development</p> <p align="right">Articles:</p>		5.441 0	7.650 0	3.481 0
<p>Description: Information Operations (IO) Counter Measure (CM) Capability Research & Development. Develops and test IO Countermeasure capabilities across various platforms. Develops specific waveforms to attack adversary systems. Develops and uses modeling and simulation techniques to prototype and test emergent waveforms.</p> <p>FY 2010 Accomplishments: Continued: Modeling & Simulation Lab (Applied/projected level of effort) Information Warfare (IW)/IO Electronic Attack (EA) capability development (Details held at higher classification level) Waveform Weapon Development</p> <p>FY 2011 Plans: Continue:</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Modeling & Simulation Lab (Applied/projected level of effort) IW/IO EA capability development (Details held at higher classification level) Waveform Weapon Development FY 2012 Plans: Continue: Information Warfare (IW)/Information Operations (IO) Electronic Attack (EA) capability development (Details held at higher classification level) Waveform Weapon Development				
Title: Electronic Warfare Readiness Support/MCS-21 Systems Development & Support Description: Maritime Cryptologic Systems for the 21st Century (MCS-21) Systems Development & Support: Develops and fields spiral EA capabilities against Fleet Forces Command prioritized signals and target sets. EA capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface IO platforms (Classic Troll, Banshee and Ships Signal Exploitation Equipment Increment E and Increment F(SSEE-Inc E/F.) Also included is the Navy's investment in Integrated Communications and Data System (ICADS) proof of concept system. FY 2010 Accomplishments: Continued: EA Systems Development (Details held at higher classification level) EA antenna development - Spiral capability upgrade of Photonics antenna IW/IO EA capability development & integration (Details held at higher classification level) Contractor Systems Engineering & operations (OPS) Development Support Testing FY 2011 Plans: Continue: EA Systems Development (Details held at higher classification level) EA antenna development - Spiral capability upgrade of Photonics antenna IW/IO EA capability development & integration (Details held at higher classification level) Contractor Systems Engineering & OPS Development Support Testing FY 2012 Plans:		10.507 0 Articles:	15.219 0	4.708 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Continue: EA Systems Development (Details held at higher classification level) EA antenna development - Spiral capability upgrade of Photonics antenna IW/IO EA capability development & integration. Reduced development efforts due to budget reductions. (Details held at higher classification level) Contractor Systems Engineering & OPS Development Support.				
Title: Electronic Warfare/ Research, Analysis & R&D Technical Support		6.658	6.829	3.892
		0	0	0
Articles:				
Description: Research, Analysis and Research and Development (R&D) Technical Support. Conducts vulnerability analysis and reverse engineering on emerging threats and targets and provides specialized technical, engineering and management support to the program management office. (Specific details held at a higher classification level.)				
FY 2010 Accomplishments: Continued: Technical and intelligence related studies and contractor engineering, technical and management support Navy Information Operations (IO) Architecture process development Research and Analysis (Details held at higher classification level)				
FY 2011 Plans: Continue: Technical and intelligence related studies and contractor engineering, technical and management support Research and Analysis (Details held at higher classification level)				
FY 2012 Plans: Continue: Technical and intelligence related studies and contractor engineering, technical and management support Research and Analysis (Details held at higher classification level)				
Title: Electronic Warfare/ Computer Network Operations (CNO)		7.864	5.831	4.764
		0	0	0
Articles:				
Description: Computer Network Operations (CNO): Funds development and testing of adversary target networks for modeling, simulation, and tailoring of CNO capabilities. Develops specific CNO capabilities to be used against adversary networks. Supports				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Electronic Target Folder database which provides a means of sharing and storing common CNO data. Studies unique adversary CNO vulnerabilities for exploitation. (Specific development details held at a higher classification level.)			
<i>FY 2010 Accomplishments:</i> Continued: CNO R&D Integrated Testing Facility Computer Network Attack Capabilities Development (Details held at higher classification level) Demonstration of Advanced Computer Network Operations Concept (Details held at higher classification level)			
<i>FY 2011 Plans:</i> Continue: CNO R&D Integrated Testing Facility Computer Network Attack Capabilities Development (Details held at higher classification level) Demonstration of Advanced Computer Network Operations Concept (Details held at higher classification level)			
<i>FY 2012 Plans:</i> Continue: CNO Research and Development Integrated Testing Facility Computer Network Attack Capabilities Development (Details held at higher classification level) Demonstration of Advanced Computer Network Operations Concept (Details held at higher classification level)			
Accomplishments/Planned Programs Subtotals	34.267	39.398	18.142

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTEN/0604270N/1742: <i>Electronic Warfare Technical Development</i>	4.106	4.799	1.784	0.000	1.784	1.702	1.649	1.552	1.542	0.000	17.134

D. Acquisition Strategy

These programs are designated non-ACAT and operate under streamlined acquisition. This designation supports a streamlined acquisition process using the Advanced Concept Technology Demonstration (ACTD) documentation of the Defense Acquisition Guidance.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>

E. Performance Metrics

The Navy Offensive Cyber and Information Warfare Program (NOCIWP) discovers adversary vulnerabilities, develops capabilities to exploit these vulnerabilities, and transitions these capabilities for operational use. Investments are made in high risk/high payoff non kinetic opportunities and result in technologies and capabilities that provide unique, innovative, life-saving, and potentially cost saving applications into Department of Navy and Department of Defense classified acquisition and intelligence programs. Measures include quality and impact of new ideas and approaches, the success of the technology application in satisfying COCOM and Fleet requirements, and successful cost effective transition of the capability into operational systems. The goal of these investments is to provide to Commanders non kinetic options to influence adversaries and prevent escalation of crises. Due to the nature and classification of these efforts qualitative measures are used. It is the intent through the development of modeling and simulation scenarios and capabilities to develop quantitative metrics. The success of this depends heavily on the insight obtained via various intelligence community efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Classified:Various	17.528	3.200	Oct 2010	0.700	Oct 2011	-		0.700	Continuing	Continuing	Continuing
Ancillary Hardware Development	Various	Classified:Various	11.250	1.125	Oct 2010	-		-		-	0.000	12.375	
Systems Engineering	SS/CPFF	Applied Research Laboratory:University Park, PA	0.700	0.370	Nov 2010	0.395	Nov 2011	-		0.395	Continuing	Continuing	Continuing
Systems Engineering	SS/CPFF	ARGON:Fairfax, VA	3.420	0.445	Nov 2010	0.225	Nov 2011	-		0.225	Continuing	Continuing	Continuing
Systems Engineering	WR	NRL:Washington, DC	2.610	0.785	Nov 2010	0.425	Oct 2011	-		0.425	Continuing	Continuing	Continuing
Subtotal			35.508	5.925		1.745		-		1.745			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	SS/CPFF	ARGON:Fairfax, VA	9.828	1.600	Oct 2010	0.853	Oct 2011	-		0.853	Continuing	Continuing	Continuing
Software Development	SS/CPFF	L3 Communications:New York, NY	62.777	1.905	Dec 2010	1.271	Dec 2011	-		1.271	Continuing	Continuing	Continuing
Development Support	WR	NRL:Washington, DC	0.510	0.550	Nov 2010	0.550	Nov 2011	-		0.550	0.000	1.610	
Development Support	Various	Classified:Classified	4.444	5.448	Nov 2010	1.400	Nov 2011	-		1.400	0.000	11.292	
Software Development	SS/CPFF	ARL:University Park, PA	2.000	1.100	Nov 2010	0.325	Nov 2011	-		0.325	0.000	3.425	
Software Development	SS/CPFF	ARGON:Fairfax, VA	7.089	7.869	Nov 2010	2.100	Nov 2011	-		2.100	0.000	17.058	
Software Development	WR	NRL:Washington, DC	1.270	0.675	Oct 2010	0.350	Oct 2011	-		0.350	0.000	2.295	
Software Development	Various	Classified:Classified	13.434	7.831	Oct 2010	3.748	Oct 2011	-		3.748	0.000	25.013	
Research, Studies and Vulnerability	WR	NRL:Washington, DC	10.236	2.978	Oct 2010	2.443	Oct 2011	-		2.443	0.000	15.657	
Subtotal			111.588	29.956		13.040		-		13.040			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>
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Proj 2263 Page 1	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
IO Mission Management																												
MCS21 Planning, Optimization, and Tasking Services (MPCOTS)																												
IMPACTS																												
IO CM Capability Research & Development																												
Modeling and Simulation Lab																												
Waveform Development																												
Computer Network Operations																												
A/CNA	▲																											
CNO Capabilities Development	Study 1	Study 2																										
Test and Evaluation Milestones																												
DT Airborne IO Capabilities/MCS21 IO Capabilities																												
Production Milestones																												
N/A																												

2012PB - 0204575N - 2263

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2263				
IO Mission Management: MCS21 Planning, Optimization, and Tasking Services (MPOTS): MCS21 Planning, Optimization, and Tasking Services (MPOTS)	1	2011	1	2011
IO Mission Management: IMPACTS: IMPACTS (Spiral Enhancement) #2	3	2011	3	2011
IO Mission Management: IMPACTS: IMPACTS (Spiral Enhancement) #3	3	2012	3	2012
IO Mission Management: IMPACTS: IMPACTS (Spiral Enhancement) #4	3	2013	3	2013
IO Mission Management: IMPACTS: IMPACTS (Spiral Enhancement) #5	3	2014	3	2014
IO Mission Management: IMPACTS: IMPACTS (Spiral Enhancement) #6	3	2015	3	2015
IO Mission Management: IMPACTS: IMPACTS (Spiral Enhancement) #7	3	2016	3	2016
IO CM Capability Research & Development: Modeling and Simulation Lab: Modeling and Simulation Lab	1	2011	1	2011
IO CM Capability Research & Development: Waveform Development: FIOC Delivery #1	1	2011	1	2011
IO CM Capability Research & Development: Waveform Development: FIOC Delivery #2	3	2012	3	2012
IO CM Capability Research & Development: Waveform Development: FIOC Delivery #3	2	2014	2	2014
IO CM Capability Research & Development: Waveform Development: FIOC Delivery #4	3	2015	3	2015
Computer Network Operations: A/CNA: A/CNA	1	2010	1	2010
Computer Network Operations: CNO Capabilities Development: CNO Capabilities Development Studies/Demonstration	1	2010	1	2010
Computer Network Operations: CNO Capabilities Development: CNO Spiral Enhancements #1	2	2010	2	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0204575N: <i>Elect Warfare Readiness Supt</i>	PROJECT 2263: <i>Information Warfare System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Computer Network Operations: CNO Capabilities Development: CNO Spiral Enhancements #2	2	2011	2	2011
Computer Network Operations: CNO Capabilities Development: CNO Spiral Enhancements #3	4	2012	4	2012
Computer Network Operations: CNO Capabilities Development: CNO Spiral Enhancements #4	4	2013	4	2013
Computer Network Operations: CNO Capabilities Development: CNO Spiral Enhancements #5	2	2015	2	2015
Test and Evaluation Milestones: DT Airborne IO Capabilities/MCS21 IO Capabilities: MCS21 IO Capabilities (Test) #2	4	2011	4	2011
Test and Evaluation Milestones: DT Airborne IO Capabilities/MCS21 IO Capabilities: MCS21 IO Capabilities (Test) #3	1	2012	1	2012
Test and Evaluation Milestones: DT Airborne IO Capabilities/MCS21 IO Capabilities: MCS21 IO Capabilities (Test) #4	3	2013	3	2013
Test and Evaluation Milestones: DT Airborne IO Capabilities/MCS21 IO Capabilities: MCS21 IO Capabilities (Test) #5	4	2014	4	2014
Test and Evaluation Milestones: DT Airborne IO Capabilities/MCS21 IO Capabilities: MCS21 IO Capabilities (Test) #6	1	2015	1	2015
Test and Evaluation Milestones: DT Airborne IO Capabilities/MCS21 IO Capabilities: CNO Spiral Enhancements #6	3	2016	3	2016
Test and Evaluation Milestones: DT Airborne IO Capabilities/MCS21 IO Capabilities: A/CNA Study/Demonstration	2	2011	2	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0205601N: <i>Harm Improvement</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	35.030	14.207	11.147	-	11.147	8.433	9.054	7.287	7.399	Continuing	Continuing
1780: <i>HARM Improvement</i>	1.860	1.555	1.412	-	1.412	1.416	1.446	1.495	1.517	Continuing	Continuing
2185: <i>AARGM</i>	14.490	7.793	6.684	-	6.684	7.017	7.608	5.792	5.882	Continuing	Continuing
3056: <i>Advanced Precision Kill Weapons System</i>	8.797	-	3.051	-	3.051	-	-	-	-	0.000	11.848
3212: <i>MEDUSA JCTD</i>	9.883	4.859	-	-	-	-	-	-	-	0.000	14.742

A. Mission Description and Budget Item Justification

Research, Development, Test and Evaluation funding for the Joint Service Pre-Planned Product Improvement program which will include near and far term performance improvements, cost reduction, and studies that establish future development requirements. Specific initial efforts include lower cost seeker component development and seeker aided fuzing to enhance warhead performance in low angle impacts and against certain ship targets. This excludes civilian and military manpower and their related costs and military construction costs which will be included in appropriate management and support elements.

B. Program Change Summary (\$ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	29.920	14.207	8.869	-	8.869
Current President's Budget	35.030	14.207	11.147	-	11.147
Total Adjustments	5.110	-	2.278	-	2.278
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	5.552	-			
• SBIR/STTR Transfer	-0.015	-			
• Program Adjustments	-	-	2.590	-	2.590
• Section 219 Reprogramming	-0.427	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.312	-	-0.312

Change Summary Explanation

Technical: Not applicable.

Schedule:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0205601N: <i>Harm Improvement</i>

Advanced Anti-Radiation Guided Missile - Entered Operational Test C in 3Q FY 2010. In 4Q FY 2010, AARGM was decertified as a result of intermittent hardware and software failures. Failures have been corrected via updated software and the system is currently in Integrated Test and Evaluation (IT&E). Operational Test C is scheduled to resume 3Q FY 2011. Delay will impact Initial Operational Capability (IOC) and Full Rate Production (FRP) dates. IOC slipped from 1Q FY 2011 to 3Q FY 2011, LRIP 2 deliveries moved from 2Q FY 2011 to 3Q FY 2011. FRP decision slipped from 2Q FY 2011 to 2Q FY 2012. FRP Lot 1 contract award slipped from 2Q FY 2011 to 3Q FY 2012. FRP Lot 2 contract award slipped from 1Q FY 2012 to 3Q FY 2013 and Full Operational Capability has slipped from 2Q FY 2013 to 4Q FY 2013 as result of FRP decision being delayed.

Advanced Precision Kill Weapons Systems - Milestone C slid from 2Q FY 2010 to 3Q FY 2010 due to unanticipated Wing Slot Seal issues which caused a delay in the completion of Developmental Testing (DT) and Operational Assessment (OA) testing. As a result in DT and OA testing delays, Low Rate Initial Production deliveries have slid from 2Q FY 2010 to 2Q FY 2011. Initial Operational Test and Evaluation (IOT&E) slid from 2Q FY 2011 to 3Q FY 2011. Initial Operating Capability (IOC) slid from 2Q FY 2011 to 3Q FY 2011. FRP deliveries slid from 2Q FY 2012 to 2Q FY 2013.

Medusa - Performance Specifications and Capability Development Document (CDD) slid from 1Q FY11 to 4Q FY 2011 due to a delay in the Low Cost Imaging Terminal Seeker - Future Naval Capability final test event. Technical information from the final test event is needed for Performance Specifications and CDD development. Due to delay in program, the Military Utility Assessment has been delayed indefinitely.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 1780: <i>HARM Improvement</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1780: <i>HARM Improvement</i>	1.860	1.555	1.412	-	1.412	1.416	1.446	1.495	1.517	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

HIGH-SPEED ANTI-RADIATION MISSILE (HARM) IMPROVEMENT: HARM is a joint service program with the Air Force (Navy lead). The program commenced production in FY 1983. Program element 0205601N was used until FY 1990 to develop and test one hardware and two software upgrades to the HARM (AGM-88B, Block III & AGM-88C, Block IV) as Engineering Change Proposals (ECPs). Another ECP software program (Block IIIA&V) was developed (FY 1996 through FY 1999) to modify HARM software in order to meet operational requirements. HARM Block IIIA/V software was distributed to the Fleet in FY 2000. The Block V tactical software upgrade gives HARM improved geographic specificity and improved capability against advanced waveforms. HARM Block VA is currently in test and is projected to be distributed to the fleet in FY11.

HARM Improvement includes efforts to conduct Foreign Military Assessment (FMA) analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: HARM (FMA)	1.860	1.555	1.412	-	1.412
Articles:	0	0	0		0
FY 2010 Accomplishments: Continued to conduct FMA analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement included funding for threat assessment, operational updates and integration efforts.					
FY 2011 Plans: Continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.					
FY 2012 Base Plans: Continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign anti-radar threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.					
Accomplishments/Planned Programs Subtotals	1.860	1.555	1.412	-	1.412

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 1780: <i>HARM Improvement</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

HARM Missile software updates are provided through the Software Support Activity at Naval Air Warfare Center - Weapons Division (NAWC-WD), China Lake, CA.

E. Performance Metrics

Successfully completed Developmental Test/Operational Test.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 1780: <i>HARM Improvement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD:China Lake, CA	-	0.216	Nov 2010	1.211	Nov 2011	-		1.211	Continuing	Continuing	Continuing
Subtotal			-	0.216		1.211		-		1.211			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Eval	WR	NAWC-WD:China Lake, CA	17.115	1.329	Nov 2010	0.192	Nov 2011	-		0.192	Continuing	Continuing	Continuing
Subtotal			17.115	1.329		0.192		-		0.192			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	Various:Various	0.403	0.010	Nov 2010	0.009	Nov 2011	-		0.009	Continuing	Continuing	Continuing
Subtotal			0.403	0.010		0.009		-		0.009			

Remarks
Contract Type for Travel is TO

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		17.518	1.555	1.412	-	1.412		

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 1780: <i>HARM Improvement</i>
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HARM IMPROVEMENT	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Radar System Evaluation	FMA																											
Systems Development																												
Test & Evaluation																												
Production Milestones																												
Deliveries																												

2012PB - 0205601N - 1780

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 1780: <i>HARM Improvement</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
HARM IMPROVEMENT				
Acquisition Milestones: Radar System Evaluation: Radar System Evaluation - Foreign Military Assessment	1	2010	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 2185: <i>AARGM</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2185: <i>AARGM</i>	14.490	7.793	6.684	-	6.684	7.017	7.608	5.792	5.882	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The AGM-88E Advanced Anti-Radiation Guided Missile (AARGM) Project transitioned a Phase III Small Business Innovative Research (SBIR) program to develop and demonstrate a multi-mode guidance section on a HARM airframe to System Development and Demonstration (SD&D) in FY 2003. The AARGM SD&D program is designed to integrate multi-mode guidance (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning System (GPS)/Inertial Navigation System on the HARM AGM-88 missile. AARGM weapon system capabilities include: active MMW terminal guidance, counter shutdown, expanded threat coverage, enhanced ARH, netted targeting real-time feed via Integrated Broadcast Service (IBS) prior to missile launch, weapon impact assessment transmitted prior to detonation, GPS/point-to-point weapon navigation, and weapon employment with impact avoidance zone/missile impact zones.

In June 2003, a successful Milestone B transitioned AARGM to a SD&D Acquisition Category 1C program. ATK Missile Systems Company was awarded the AARGM SD&D contract valued at \$222.6M. In May 2004, the contract baseline was increased to \$231.9M to accelerate incorporation of an embedded IBS-Receiver, enabling the warfighter to directly receive National intelligence data, providing additional AARGM targeting data to increase overall pilot situational awareness. Recent modifications have increased the current baseline to \$232.3. The AARGM program includes 31 test articles and 1,871 production modification kits.

DT-B1 began in FY 2004 and continued through 4Q FY 2008. Captive carry testing of Engineering Manufacturing Development hardware began in FY 2007. DT-B1 overlapped with DT-B2 which began in 3Q FY 2007. Operational Assessment was completed 4Q FY 2008. Milestone C was achieved 4Q FY 2008, followed by a combined Low Rate Initial Production (LRIP) contract award in 1Q FY 2009. All live fire tests were completed in 4Q FY 2009 for DT-B2. Program began Initial Operational Test and Evaluation in 3Q FY 2010. In 4Q FY 2010 AARGM was decertified as a result of intermittent hardware and software failures. Failures have been corrected via updated software and system is currently in Integrated Test and Evaluation (IT&E). Operational Test C is scheduled to resume in 3Q FY 2011. LRIP II deliveries will begin in 3Q FY 2011. FRP Lot 1 contract award moved from 2Q FY 2011 to 3Q FY 2011 and as a result, FRP Lot 1 deliveries moved from 2Q FY 2012 to 3Q FY 2012. LRIP III is planned for 3Q FY 2011, with deliveries in 3Q FY 2012. FRP decision moved to 2Q FY 2012 and as a result, FRP Lot 1 contract award slipped to 3Q FY 2012.

In FY 2010-FY 2016, the AGM-88E AARGM program plans to develop and demonstrate the capability to engage and destroy non-traditional Suppression of Enemy Air Defenses (SEAD)/Destruction of Enemy Air Defenses (DEAD) and Overseas Contingency Operations (OCO) targets. These developments continue Future Naval Capability Science and Technology investments by the Office of Naval Research initiated in FY 2006.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: AARGM SD&D	8.879	-	-	-	-
Articles:	0				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>		PROJECT 2185: <i>AARGM</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: OPEVAL commenced 3Q FY 2010. Began Follow-on Test and Evaluation.					
Title: Threat Data Library					
Articles:	2.471 0	3.453 0	2.887 0	-	2.887 0
FY 2010 Accomplishments: Updated Electronic Intelligence (ELINT) files and MMW signatures to identify track and engage new and/or improved threat radars. Began testing and assessment of threat systems. Began update of AARGM threat data library.					
FY 2011 Plans: Continue to update ELINT files and MMW signatures to identify track and engage new and/or improved threat radars. Continue test and assessment of threat systems. Continue to update AARGM threat data library.					
FY 2012 Base Plans: Continue to update ELINT files and MMW signatures to identify track and engage new and/or improved threat radars. Continue test and assessment of threat systems. Continue to update AARGM threat data library.					
Title: AARGM Derivative Program					
Articles:	0.550 0	4.340 0	3.797 0	-	3.797 0
FY 2010 Accomplishments: Began development of capability to attack non-traditional SEAD/DEAD and OCO targets will continue through the Future Years Defense Plan.					
FY 2011 Plans: Continue to develop the capability to attack non-traditional SEAD/DEAD and OCO targets.					
FY 2012 Base Plans: Continue to develop capability to attack non-traditional SEAD/DEAD and OCO targets					
Title: ARM JMPS UPC Software					
Articles:	2.590 0	-	-	-	-
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 2185: <i>AARGM</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Updated Unique Planning Component (UPC) software leading to testing to maintain Advanced Radiation Missile (ARM) Joint Mission Planning System (JMPS) UPC compatibility with future JMPS architecture.					
Accomplishments/Planned Programs Subtotals	14.490	7.793	6.684	-	6.684

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• WPN 2327: <i>HARM Mods</i>	47.825	53.543	73.061	0.000	73.061	88.939	131.949	136.079	158.321	515.623	1,268.697
• RDTEN 3063: <i>0604269N EA-18G Development</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.200

D. Acquisition Strategy

The AARGM program started as a Phase I SBIR, Advanced Technology Program, evolved into a Phase III SBIR program, and transitioned into a SD&D ACAT 1C program in June 2003. The AARGM SD&D fulfills U.S. Navy operational requirements and incorporates AARGM Advanced Technology Development and Quick Bolt Advanced Concept Technology Demonstration- demonstrated system requirements. Government responsibilities for SD&D have included monitoring, technical assessment, and validation of contractor technology development and testing. Milestone C was achieved 4Q FY 2008, followed by a combined LRIP contract award in 1Q FY 2009. LRIP 1 deliveries commenced 3Q FY 2010.

E. Performance Metrics

Achieved Milestone C in 2008. Completed Developmental Testing in 2009. Successfully completed Operational Test Readiness Review in 2010. Successfully complete Operational Test in 2011.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 2185: <i>AARGM</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSMA:Arlington, VA	1.634	1.576	Nov 2010	0.916	Nov 2011	-		0.916	9.416	13.542	
Systems Engineering	WR	NAWC-WD:China Lake, CA	58.725	5.162	Nov 2010	4.690	Nov 2011	-		4.690	16.633	85.210	
PY Product Development	Various	Various:Various	464.611	-		-		-		-	0.000	464.611	
Subtotal			524.970	6.738		5.606		-		5.606	26.049	563.363	

Remarks
Difference between Total cost and Target Value of Contract represents contract variance to date.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analyses	Various	Various:Various	0.761	0.050	Nov 2010	-		-		-	0.010	0.821	
Prior Years Support	Various	Various:Various	6.884	-		-		-		-	0.000	6.884	
Subtotal			7.645	0.050		-		-		-	0.010	7.705	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NAWC-WD:China Lake, CA	20.476	0.335	Nov 2010	0.342	Nov 2011	-		0.342	1.286	22.439	
Operational Test & Evaluation	WR	COMOPTEVFOR:Norfolk, VA	10.349	0.440	Nov 2010	0.502	Nov 2011	-		0.502	2.213	13.504	
Prior Years T & E	Various	Various:Various	6.390	-		-		-		-	0.000	6.390	
Subtotal			37.215	0.775		0.844		-		0.844	3.499	42.333	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 2185: <i>AARGM</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Technical Services	Various	Various:Various	3.481	0.020	Feb 2011	0.015	Feb 2012	-		0.015	0.020	3.536	
Program Management Support	Various	Various:Various	6.504	0.200	Feb 2011	0.175	Feb 2012	-		0.175	0.200	7.079	
Travel	WR	NAVAIR HQ:Patuxent River, MD	1.528	0.010	Nov 2010	0.044	Nov 2011	-		0.044	0.040	1.622	
Prior Years Mgmt	Various	Various:Various	6.759	-		-		-		-	0.000	6.759	
Subtotal			18.272	0.230		0.234		-		0.234	0.260	18.996	

Remarks
Contract Type for Travel is TO

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	588.102	7.793		6.684		-		6.684	29.818	632.397	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0205601N: *Harm Improvement*

PROJECT
 2185: *AARGM*

AARGM	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones							▲ IOC			◆ FRP Dec						▲ FOC												
Development																												
PCA ▼																												
Test & Evaluation																												
Operational Evaluation		■ OTRR	— OT-C		— IT&E		— OT-C																					
Production Milestones																												
LRIP 2 ●			●																									
LRIP 3 ●						●																						
FRP Lot 1 ●										●																		
FRP Lot 2 ●											●																	
FRP Lot 3 ●																												
Deliveries																												
LRIP 1 - 26 (WPN)			—		—		—																					
LRIP 2 - 33 (WPN)						—		—																				
LRIP 3 - 44 (WPN)										—		—																
FRP Lot 1 - 72 (WPN)															—		—											
FRP Lot 2 - 104 (WPN)																												
FRP Lot 3 - 194 (WPN)																												

2012PB - 0205601N - 2185

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 2185: <i>AARGM</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AARGM				
Acquisition Milestones: Milestones: Initial Operational Capability	3	2011	3	2011
Acquisition Milestones: Milestones: Full Rate Production Decision	2	2012	2	2012
Acquisition Milestones: Milestones: Full Operational Capability	4	2013	4	2013
Development: Physical Configuration Audit	1	2010	1	2010
Test & Evaluation: Operational Evaluation: Operational Test Readiness Review	2	2010	2	2010
Test & Evaluation: Operational Evaluation: Operational Evaluation	3	2010	4	2010
Test & Evaluation: Operational Evaluation: Integrated Test and Evaluation	1	2011	2	2011
Test & Evaluation: Operational Evaluation: Operational Evaluation Restart	3	2011	4	2011
Production Milestones: Low Rate Initial Production 2 (WPN)	3	2010	3	2010
Production Milestones: Low RATE Initial Production 3	3	2011	3	2011
Production Milestones: Full Rate Production Lot 1	3	2012	3	2012
Production Milestones: Full Rate Production Lot 2	3	2013	3	2013
Production Milestones: Full Rate Production Lot 3	3	2014	3	2014
Deliveries: Low Rate Initial Production 1 Delivery (WPN)	3	2010	3	2011
Deliveries: Low-Rate Initial Production 2 Delivery (WPN)	3	2011	3	2012
Deliveries: Low Rate Initial Production 3 Delivery (WPN)	3	2012	3	2013
Deliveries: Full Rate Production Deliveries - Lot 1 (WPN)	3	2013	3	2014
Deliveries: Full Rate Production Deliveries - Lot 2 (WPN)	3	2014	3	2015
Deliveries: Full Rate Production Deliveries - Lot 3 (WPN)	3	2015	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3056: <i>Advanced Precision Kill Weapons System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3056: <i>Advanced Precision Kill Weapons System</i>	8.797	-	3.051	-	3.051	-	-	-	-	0.000	11.848
Quantity of RDT&E Articles	78	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Advanced Precision Kill Weapons System (APKWS) II was an Army System Development & Demonstration (SD&D) program to develop a low cost Semi Active Laser precision guidance section for existing 2.75-inch unguided rockets. APKWS II will provide an inexpensive, small, lightweight precision-kill weapon that is effective against soft and lightly armored targets, and which enhances crew survivability with increased standoff range. APKWS offers precision, maximum stored kills per aircraft sortie, minimum collateral damage potential, and increased effectiveness over legacy unguided rockets. The guidance package can be assembled with existing unguided rocket components (warhead and rocket motors) and can be fired from LAU-61/LAU-68. SD&D program was completed 3Q FY 2010, and Milestone C was approved in 3Q FY 2010. The Low Rate Initial Production (LRIP) 1 contract was awarded to BAE Systems in 4Q FY 2010. The LRIP II contract was awarded to BAE Systems in 2Q FY 2011.

The Fixed Wing Joint Capability Technology Demonstration (JCTD) is a joint USN and USAF effort sponsored by OSD and U.S. Central Command which will modify the APKWS II from the Program of Record (POR) and conduct a demonstration on USMC AV-8B and USAF A-10 aircraft. Effort is funded with OSD funds in FY 2010 and will be funded from this program element in FY 2012.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Advanced Precision Kill Weapons System (APKWS) SD&D	8.797	-	3.051	-	3.051
Articles:	78		0		0
FY 2010 Accomplishments: APKWS Program Of Record (POR) - Achieved Milestone C approval, awarded LRIP contract, completed twenty-one Development Test/Operational Assessment live fire events.					
FY 2012 Base Plans: APKWS POR - Full-Rate Production decision and contract. APKWS JCTD - Technology demonstration and Military Utility Assessment.					
Accomplishments/Planned Programs Subtotals	8.797	-	3.051	-	3.051

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3056: <i>Advanced Precision Kill Weapons System</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PANMC/015100: <i>Airborne Rockets</i>	75.034	114.764	38.264	80.200	118.464	48.184	69.808	56.792	67.516	Continuing	Continuing

D. Acquisition Strategy

The Navy assumed the APKWS program from the Army. The previously competed SD&D Army contract to prime contractor was transferred to the Navy for continued management. The program was through Milestone B and meeting cost schedule and technical performance requirements. The Navy funded the remainder of the program to complete SD&D. The LRIP 1 contract was awarded to BAE Systems in 4Q FY 2010.

E. Performance Metrics

APKWS Milestone C approved in April 2010.
 APKWS LRIP I awarded in July 2010.
 APKWS LRIP II awarded in January 2011.
 APKWS Fixed Wing JCTD Military Utility Assessment is scheduled for 2012.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3056: <i>Advanced Precision Kill Weapons System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	BAE SYS:New Hampshire	21.924	-		0.949	Apr 2012	-		0.949	0.000	22.873	22.873
Prior Years Prod Dev	Various	Various:Various	4.106	-		-		-		-	0.000	4.106	
APKWS JCTD Contract	C/CPFF	BAE SYS:New Hampshire	3.950	-		-		-		-	0.000	3.950	3.950
Subtotal			29.980	-		0.949		-		0.949	0.000	30.929	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Support	Various	Various:Various	0.624	-		0.100	Dec 2011	-		0.100	0.000	0.724	
Subtotal			0.624	-		0.100		-		0.100	0.000	0.724	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC-WD:China Lake, CA	2.489	-		0.758	Dec 2011	-		0.758	0.000	3.247	
Prior Years T&E	Various	Various:Various	3.900	-		-		-		-	0.000	3.900	
Subtotal			6.389	-		0.758		-		0.758	0.000	7.147	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWC-WD:China Lake, CA	4.347	-		0.710	Dec 2011	-		0.710	0.000	5.057	
	Various	Various:Various	1.706	-		0.485	Dec 2011	-		0.485	0.000	2.191	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3056: <i>Advanced Precision Kill Weapons System</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support													
Travel	WR	NAVAIR HQ:Patuxent River, MD	0.300	-		0.049	Nov 2011	-		0.049	0.000	0.349	
Subtotal			6.353	-		1.244		-		1.244	0.000	7.597	

Remarks
Contract Type for Travel is TO

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	43.346	-		3.051		-		3.051	0.000	46.397	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3056: <i>Advanced Precision Kill Weapons System</i>
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Advanced Precision Kill Weapons System	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones			MSC ▲				IOC ▲				FRP ◆																	
System Development & Demonstration																												
Joint Capability Technology Demonstrations	SD&D								Tech Demo																			
											MUA ▼																	
Test & Evaluations Milestones																												
Operational Assessment		OA ▼																										
Initial Operational Test and Evaluation							IOT&E ▼																					
Production Milestones																												
Contract Awards				LRIP I ●		LRIP II ●					FRP I ●				FRP II ●				FRP III ●				FRP IV ●				FRP V ●	
Deliveries																												
Low-Rate Initial Production LRIP I						LRIP I (Qty 78 RD TEN) (Qty 247 PANMC)																						
Low-Rate Initial Production LRIP II											LRIP II (Qty 600 PANMC)																	
Full Rate Production															FRP I (Qty 1,656)		FRP II (Qty 1,000)		FRP III (Qty 2,321)		FRP IV (Qty 1,541)							

2012PB - 0205601N - 3056

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3056: <i>Advanced Precision Kill Weapons System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Advanced Precision Kill Weapons System				
Acquisition Milestones: Milestones: APKWS Milestone C	3	2010	3	2010
Acquisition Milestones: Milestones: Initial Operational Capability	3	2011	3	2011
Acquisition Milestones: Milestones: Full Rate Production (FRP) Decision	2	2012	2	2012
System Development & Demonstration: Advanced Precision Kill Weapon System (APKWS) System Development & Demonstration	1	2010	3	2010
System Development & Demonstration: Joint Capability Technology Demonstrations: Joint Capability Technology Demonstration (JCTD)	1	2012	4	2012
System Development & Demonstration: Joint Capability Technology Demonstrations: JCTD Military Utility Assessment (MUA)	3	2012	3	2012
Test & Evaluations Milestones: Operational Assessment: APKWS Operational Assessment	2	2010	2	2010
Test & Evaluations Milestones: Initial Operational Test and Evaluation: APKWS Initial Operational Test and Evaluation	3	2011	3	2011
Production Milestones: Contract Awards: Low Rate Initial Procurement 1 (RDTE & PANMC)	4	2010	4	2010
Production Milestones: Contract Awards: Low Rate Initial Procurement 2 (PANMC)	2	2011	2	2011
Production Milestones: Contract Awards: Full Rate Production I	2	2012	2	2012
Production Milestones: Contract Awards: Full Rate Production II	2	2013	2	2013
Production Milestones: Contract Awards: Full Rate Production III	2	2014	2	2014
Production Milestones: Contract Awards: Full Rate Production IV	2	2015	2	2015
Production Milestones: Contract Awards: Full Rate Production V	2	2016	2	2016
Deliveries: Low-Rate Initial Production LRIP I: APKWS Low Rate Initial Procurement 1 (LRIP) Deliveries (RDTE)	2	2011	1	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3056: <i>Advanced Precision Kill Weapons System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: Low-Rate Initial Production LRIP II: APKWS LRIP 2 Deliveries (PANMC)	2	2012	1	2013
Deliveries: Full Rate Production: FRP I Deliveries	2	2013	1	2014
Deliveries: Full Rate Production: FRP II Deliveries	2	2014	1	2015
Deliveries: Full Rate Production: FRP III Deliveries	2	2015	1	2016
Deliveries: Full Rate Production: FRP IV Deliveries	2	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3212: <i>MEDUSA JCTD</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3212: <i>MEDUSA JCTD</i>	9.883	4.859	-	-	-	-	-	-	-	0.000	14.742
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Medusa Joint Capability Technology Demonstration (JCTD) will demonstrate the Low Cost Guided Imaging Rockets (LOGIR) technology currently being developed at the Naval Air Warfare Center Weapons Division China Lake on the MH-60S. LOGIR provides "fire and forget" capability to 2.75-inch rockets in support of Sea Shield Pillar, increases platform lethality against Fast Attack Craft/Fast Inshore Attack Craft threat, provides a low-cost Imaging InfraRed precision guidance section for the existing 2.75-inch unguided rockets and provides maximum precision kills per sortie, low cost, minimum collateral damage, increased efficiency, and increased standoff. OSD is also providing funding for this effort. Initial Program documentation (i.e. Performance Spec, Capabilities Development Document) will be developed within the scope of the JCTD.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: MEDUSA JCTD	9.883	4.859	-	-	-
Articles:	0	0			
FY 2010 Accomplishments: Began demonstration of the LOGIR technology currently being developed.					
FY 2011 Plans: Continue demonstration of the LOGIR technology on the MH-60S.					
Accomplishments/Planned Programs Subtotals	9.883	4.859	-	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDTE 0603648D8Z: <i>Project#648, DUSD (AS&C)</i>	4.000	3.605	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.605
• RDTEN 0603790N: <i>NIPO Research and Development</i>	0.500	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
• Project# K0-1: <i>Republic of Korea</i>	2.460	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.460

D. Acquisition Strategy

The MEDUSA JCTD is a technology demonstration by DoD government activities.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3212: <i>MEDUSA JCTD</i>

E. Performance Metrics

Integration and Demonstration are schedule to continue until 2Q FY12. Performance Spec and Capability Development Document will be completed in 4Q FY11.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3212: <i>MEDUSA JCTD</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD:China Lake, CA	4.521	1.461	Nov 2010	-		-		-	0.000	5.982	
Product Development	C/CPFF	Sikorsky:Stratford, CT	-	0.500	May 2011	-		-		-	0.000	0.500	1.500
Prior Years Prod Dev	C/CPFF	Raytheon:Crane, IN	1.018	-		-		-		-	0.000	1.018	7.500
Subtotal			5.539	1.961		-		-		-	0.000	7.500	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD:Patuxent River, MD	-	0.508	Feb 2011	-		-		-	0.000	0.508	
Developmental Testing	C/CPFF	DMEA:Mcclellan, CA	0.037	0.040	Mar 2011	-		-		-	0.000	0.077	0.077
Developmental Testing	C/CPFF	Lockheed:Owego, NY	4.050	1.936	Mar 2011	-		-		-	0.000	5.986	6.036
Subtotal			4.087	2.484		-		-		-	0.000	6.571	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWC-AD:Patuxent River, MD	0.122	0.374	Nov 2010	-		-		-	0.000	0.496	
Travel	WR	NAVAIR HQ:Patuxent River, MD	0.010	0.040	Nov 2010	-		-		-	0.000	0.050	
Program Management Support	C/CPFF	AMEWAS:California, MD	0.125	-		-		-		-	0.000	0.125	0.125
Subtotal			0.257	0.414		-		-		-	0.000	0.671	

Remarks
Contract Type for Travel is TO

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3212: <i>MEDUSA JCTD</i>
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MEDUSA JCTD	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Systems Development																												
Performance Spec								Perf Spec ▼																				
Capability Development Document								CDD ▼																				
Test & Evaluation Milestones																												
Integration & Demonstration									Int & Demo																			
Production Milestones																												
Deliveries																												

2012PB - 0205601N - 3212

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205601N: <i>Harm Improvement</i>	PROJECT 3212: <i>MEDUSA JCTD</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MEDUSA JCTD				
Systems Development: Performance Spec: Performance Spec	4	2011	4	2011
Systems Development: Capability Development Document: Capability Development Document	4	2011	4	2011
Test & Evaluation Milestones: Integration & Demonstration: Integration and Demonstration	1	2010	2	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0205604N: <i>Tactical Data Links</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	14.525	28.854	69.224	-	69.224	87.653	44.359	32.376	28.572	Continuing	Continuing
2126: <i>ATDLS Integration</i>	14.525	28.854	57.224	-	57.224	60.653	44.359	32.376	28.572	Continuing	Continuing
4022: <i>Other Tactical Data Link Engineering</i>	-	-	12.000	-	12.000	27.000	-	-	-	0.000	39.000

A. Mission Description and Budget Item Justification

This Program Element develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs, specifically Link 16 Network and Command and Control Processor (C2P). The Program Element also develops and tests tactical data link capability to distribute other data types to new and existing platforms.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing operational systems.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	14.948	28.854	65.152	-	65.152
Current President's Budget	14.525	28.854	69.224	-	69.224
Total Adjustments	-0.423	-	4.072	-	4.072
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.229	-			
• Program Adjustments	-	-	4.554	-	4.554
• Section 219 Reprogramming	-0.172	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.482	-	-0.482
• Congressional General Reductions Adjustments	-0.022	-	-	-	-

Change Summary Explanation

Schedule:

ATDLS Integration:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>
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Link 16 Network Increment II Dynamic Network Management (DNM) (2126): DNM Milestone C/Full Development Decision Review (FDDR) (from Fiscal Year (FY) 2011Q3 to FY 2012Q2), Initial Operating Capability (IOC) (from FY 2011Q3 to FY 2012Q2), Full Operating Capability (FOC) (from FY 2014Q1 to FY 2014Q4), Joint Tactical Information Distribution System (JTIDS) Developmental Test Readiness Review (DTRR) (from FY 2010Q4 to FY 2011Q3)/Operational Test Readiness Review (OTRR) (from FY 2011Q1 to FY 2011Q4), Multifunctional Information Distribution System (MIDS) On Ship (MOS) DTRR (from FY 2011Q4 to FY 2012Q3)/OTRR (from FY 2012Q1 to FY 2012Q4), JTIDS Developmental Test (DT) (from FY 2011Q1 to FY 2011Q4)/Operational Test (OT) (from FY 2011Q2 to FY 2012Q1), and MOS DT (from FY 2011Q4 to FY 2012Q3)/ Follow On Operational Test and Evaluation (FOT&E) (from FY 2012Q2 to FY 2013Q1) slipped due to delays in the processing and approval of the Capabilities Production Document (CPD).

Link 16 Network Increment II Cryptographic Modernization (CM)/Frequency Remapping (FR) (2126): MOS CM/FR Development (Ship) System Requirements Review (SRR) (from FY 2012Q1 to FY 2013Q3), Preliminary Design Review (PDR) (from FY 2012Q4 to FY 2013Q3), and Critical Design Review (CDR) (from FY 2013Q2 to FY 2013Q4) moved to match the Joint Program Executive Office (JPEO) Joint Tactical Radio System (JTRS) new MIDS production schedule. JTIDS CM/FR Development CDR (from FY 2013Q1 to FY 2013Q2), JTIDS/MOS CM/FR Integration (Ship) SRR (from FY 2013Q1 to FY 2014Q2), PDR (from FY 2013Q3 to FY 2014Q4), CDR (from FY 2014Q1 to FY 2015Q2) moved to align with the Command and Control Processor (C2P) post Tech Refresh schedule, JTIDS CM/FR Integration (Air) SRR (from FY 2013Q1 to FY 2015Q1), PDR (from FY 2013Q3 to FY 2015Q3), CDR (from FY 2014Q1 to FY 2016Q1) and CM/FR (Ship) DT (from FY 2015Q3 to FY 2015Q4) slipped due to Department re-prioritizing funds for higher-priority objectives. JTIDS CM/FR Test Readiness Review (TRR), CM/FR (Ship) DTRR, CM/FR (Ship) OTRR, CM/FR (Ship) OT have been added to the schedule.

Command and Control Processor (C2P) (2126): C2P Technology Refresh, C2P Interoperability and C2P Link 22 have been added to the schedule.

The Radar Systems Engineering project is a FY12 new start that will develop and test the capability to distribute real-time radar track data over tactical data links.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2126: <i>ATDLS Integration</i>	14.525	28.854	57.224	-	57.224	60.653	44.359	32.376	28.572	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs, specifically Link 16 Network and Command and Control Processor (C2P).

ATDLS Integration Program develops new and improved capabilities for Navy tactical data link users. The Navy Link 16 Network Increment II consists of Dynamic Network Management (DNM), Cryptographic Modernization (CM) and Frequency Remapping (FR). C2P Technology Refresh will modernize legacy C2P processing components to address C2P component obsolescence issues. C2P is a critical component in the Aegis Ballistic Missile Defense (BMD) architecture. Modernization is a service life extension program required to sustain C2P support of Naval Air and Ballistic Missile Defense capabilities. Link 22 development and integration into the C2P is planned.

Link 16 Network Increment II funds the DNM capability and the implementation of Link 16 Network DNM on Navy ships, shore sites and airborne Link 16 terminals. DNM will provide automatic reconfiguration of Link 16 networks that respond instantly to emergent warfighter requirements. DNM consists of new terminal protocols that include Time Slot Reallocation (TSR) and Combined Network Participation Groups (CNPNG). The DNM capabilities will be incorporated into Next Generation Command and Control Processor (NGC2P). Increment II also funds the following activities: (1) development and implementation of CM and FR mandates as a product improvement into Link 16 terminals and integration into shore sites, ship (NGC2P), and current Navy Joint Tactical Information Distribution System (JTIDS) airborne platforms; (2) development, integration, testing, and fielding of additional stacked networks and studies; (3) Developmental Test / Operational Test (DT/OT) of Navy platform modifications; and (4) implementation of new Link 16 information / data into the shipboard C2P to support Link 16 Network new and improved capabilities.

FY 2012 Justification: Funding will provide for the platform integration efforts of DNM (TSR and CNPNG), and Link 16 Network DNM Multifunctional Information Distribution System (MIDS) On Ship (MOS) DT and the Link 16 Network DNM JTIDS OT and MOS OT. In support of National Security Agency (NSA Policy 3-9) and Joint Chiefs of Staff mandates (Chairman of the Joint Chiefs of Staff Instruction Notice 6510.02), funding will provide for modernization of the cryptographic algorithm used in Link 16 terminals by continuing development of programmable cryptographic capability to load and store multiple cryptographic algorithms. Non-compliance will result in loss of Link 16 capability, as cryptographic keys for non-compliant systems will no longer be available. Additionally, FR is required by the Department of Defense and the Department of Transportation, via a Memorandum of Agreement (Regarding the 960-1215 MHz Frequency Band, 31 December 2002), to be able to continue to operate and exercise within the United States and Possessions. All Link 16 terminals are required to have this capability to support Link 16 Interoperability. Funding will provide for JTIDS CM/FR Preliminary Design Review (PDR) and commencement of design efforts leading to a CDR in FY13.

C2P Technology Refresh funds a product improvement effort to modernize legacy C2P software and hardware components and thereby extend its effective service life. Product improvement efforts will include C2P software development, hardware integration, update of the C2P development environment to promote sustainability and testing to include DT/OT of the C2P Technology Refresh baseline.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>
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FY 2012 Justification: Funding will provide for requirements, design and initial development of Command and Control Processor (C2P) Technology Refresh baseline. System Requirements Review (SRR) and Preliminary Design Review (PDR) will be conducted. Efforts will commence leading toward a Critical Design Review (CDR) which will occur in FY 2013. Initial development activities will be limited to prototype efforts needed to support PDR and CDR.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>Title: Link 16 Network Increment II (Formerly ATDLS Integration) - Dynamic Network Management (DNM)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Conducted Link 16 Network Increment II Dynamic Network Management (DNM) CDR. Conducted DNM Time Slot Reallocation (TSR) / Combined Network Participation Groups (CNP) Developmental Test (DT). Conducted DT. Conducted platform integration efforts for DNM (TSR and CNP).</p> <p>FY 2011 Plans: Conduct DNM DT / OT. Develop Link 16 Network integrated logistics support products.</p> <p>FY 2012 Plans: Continue DNM DT / OT leading up to DNM Milestone C. Conduct Multifunctional Information Distribution System (MIDS) On Ship (MOS) DNM DT to support MOS DNM Follow-on Operational Test and Evaluation (FOT&E) Operational Test Readiness Review (OTRR). Continue Link 16 Network integrated logistics support.</p>	<p>4.583</p> <p>0</p>	<p>3.520</p> <p>0</p>	<p>1.100</p> <p>0</p>
<p>Title: Link 16 Network Increment II (Formerly ATDLS Integration) - Cryptographic Modernization (CM) / Frequency Remapping (FR)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Began Increment II platform integration studies including shore, shipboard, and current Navy Joint Tactical Information Distribution System (JTIDS) airborne (E-2C and EP-3) platform integration studies and analysis. Conducted development for additional stacked networks, CM, and FR. Conducted technology demonstrations for FR and additional stacked networks. Conducted analysis and efforts related to Federal Aviation Administration (FAA) spectrum certification requirements for Tactical Data Links. Developed Link 16 Network integrated logistics support products.</p> <p>FY 2011 Plans: Conduct platform integration studies and Technology Demonstration for additional stacked networks, Cryptographic Modernization (CM) and Frequency Remapping (FR). Continue shore site, shipboard, and current Navy Joint Tactical Information Distribution</p>	<p>9.942</p> <p>0</p>	<p>25.334</p> <p>0</p>	<p>43.422</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
System (JTIDS) airborne (E-2C and EP-3) platform integrations studies and analysis. Conduct System Requirements Review (SRR) for CM / FR. Develop Link 16 Network integrated logistics support products.			
<i>FY 2012 Plans:</i> Continue Link 16 Network integrated logistics support. Conduct Preliminary Design Review (PDR). Conduct detailed design of the Cryptographic Modernization (CM)/ Frequency Remapping (FR) product improvement. Begin development of system technical requirements for the integration of Multifunctional Information Distribution System (MIDS) On Ship (MOS) with CM/FR into ship.			
<i>Title:</i> Command and Control Processor (C2P)	-	-	12.702
<i>FY 2012 Plans:</i> Develop C2P Technology Refresh requirements and conduct C2P Technology Refresh System Requirements Review (SRR) and Preliminary Design Review (PDR). Conduct prototyping efforts in preparation of and in support of an FY 2013 Critical Design Review (CDR).			0
Accomplishments/Planned Programs Subtotals	14.525	28.854	57.224

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/2614: <i>ATDLS</i>	4.301	2.273	0.942	0.000	0.942	0.000	8.578	18.105	26.650	Continuing	Continuing

D. Acquisition Strategy
The Dynamic Network Management (DNM) Time Slot Reallocation (TSR) / Combined Network Participation Groups (CNP) will be incorporated into C2P and will utilize the contract for C2P. Remaining DNM development efforts will utilize an existing development contract with British Aerospace Engineering (BAE) Systems, Data Link Solutions Limited Liability Corporation (LLC) and Warner Robins Consolidated Software Support Activity. The Joint Tactical Information Distribution System (JTIDS) Crypto Modernization (CM)/Frequency Remapping (FR) development and Low Rate Initial Production (LRIP) contract was awarded to Data Link Solutions (DLS). The associated production contract for JTIDS CM/FR will be competitively awarded after Operational Test. The MOS CM/FR contract will be awarded in FY12. Will competitively award a contract for C2P Tech Refresh development and production. C2P sustainment efforts will utilize the software support activity at Space and Naval Warfare Systems Command (SPAWAR) Systems Center Pacific and provide for future competitively-awarded sustainment contracts.

E. Performance Metrics
Link 16 Network DNM: Successfully achieve Milestone C. Successfully achieve Initial Operational Capability. Successfully conduct Full Deployment Decision Review. Successfully complete Operation Test Readiness Review. Link 16 Link 16 Network DNM: Successfully achieve Milestone C. Successfully achieve Initial Operational

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>
<p>Capability. Successfully conduct Full Deployment Decision Review. Successfully complete Operation Test Readiness Review. Successfully complete Developmental Test / Operational Test.</p> <p>Link 16 Network Cryptographic Modernization: Successful implementation of updated cryptographic algorithm as specified by National Security Agency (NSA Policy 3-9) Certification in Joint Tactical Information Distribution System (JTIDS) and Multifunctional Information Distribution System (MIDS) on Ship (MOS) Link 16 terminals.</p> <p>Link 16 Network Frequency Remapping: Successful implementation of a Frequency Remapping capability as specified in Department of Defense/Department of Transportation Memorandum of Agreement regarding the 960-1215 MHz Frequency Band of 31 Dec 02 in Joint Tactical Information Distribution System (JTIDS) and Multifunctional Information Distribution System (MIDS) on Ship (MOS) Link 16 Terminals..</p> <p>Command and Control Processor (C2P): Successfully achieve C2P Technology Refresh Fielding and thereby maintain operational availability.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ATDLS Product Development and Integration	Various	Various:Various	363.158	-		-		-		-	0.000	363.158	363.158
Link 16 Network Development	SS/FFP	DLS (BAE/Rockwell):Wayne, NJ	13.077	13.311	Oct 2010	27.631	Oct 2011	-		27.631	Continuing	Continuing	Continuing
Link 16 Network Software	WR	SPAWARSYSCEN PAC:San Diego, CA	1.042	1.454	Oct 2010	-		-		-	0.000	2.496	Continuing
Link 16 Network Integrated Logistics Support	TBD	SeaPort-E:San Diego, CA	0.500	0.600	Oct 2010	0.753	Oct 2011	-		0.753	Continuing	Continuing	Continuing
Link 16 Network Configuration Management	WR	SPAWARSYSCEN PAC:San Diego, CA	0.126	0.325	Oct 2010	0.448	Oct 2011	-		0.448	Continuing	Continuing	Continuing
Link 16 Network Systems Engineering	WR	SPAWARSYSCEN PAC:San Diego, CA	29.072	6.919	Oct 2010	5.801	Oct 2011	-		5.801	Continuing	Continuing	Continuing
C2P Development	C/IDIQ	Unknown:Unknown	-	-		7.881	Dec 2011	-		7.881	Continuing	Continuing	Continuing
C2P Systems Engineering	TBD	Unknown:Unknown	-	-		4.420	Dec 2011	-		4.420	Continuing	Continuing	Continuing
Subtotal			406.975	22.609		46.934		-		46.934			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ATDLS Test and Evaluation	Various	Various:Various	65.171	-		-		-		-	0.000	65.171	65.171
Link 16 Network Developmental T&E	WR	SPAWARSYSCEN PAC:San Diego, CA	1.365	1.673	Oct 2010	4.017	Oct 2011	-		4.017	Continuing	Continuing	Continuing
Link 16 Network Operational T&E	WR	SPAWARSYSCEN PAC:San Diego, CA	1.027	1.137	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Subtotal			67.563	2.810		4.017		-		4.017			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ATDLS System Engineering Support	Various	Various:Various	20.177	-		-		-		-	0.000	20.177	20.177
Link 16 Network Contractor Engineering Support	C/CPFF	SeaPort-E:San Diego, CA	1.437	1.972	Oct 2010	1.900	Oct 2011	-		1.900	Continuing	Continuing	Continuing
Link 16 Network Government Engineering Support	WR	SPAWARSYSCEN PAC:San Diego, CA	0.500	1.113	Oct 2010	1.990	Oct 2011	-		1.990	Continuing	Continuing	Continuing
Link 16 Network Program Management Support	C/CPFF	SeaPort-E:San Diego, CA	0.350	0.350	Oct 2010	1.982	Oct 2011	-		1.982	Continuing	Continuing	Continuing
C2P Program Management Support	TBD	Unknown:Unknown	-	-		0.401	Oct 2011	-		0.401	Continuing	Continuing	Continuing
Acquisition Workforce Fund	Various	Unknown:Unknown	0.020	-		-		-		-	0.000	0.020	0.020
Subtotal			22.484	3.435		6.273		-		6.273			
Project Cost Totals			497.022	28.854		57.224		-		57.224			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0205604N: *Tactical Data Links*

PROJECT
 2126: *ATDLS Integration*

Fiscal Year	2010				2011				2012				2013				2014				2015				2016					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Program Milestones Link 16 Network									DNM MS C/FDDR													DNM FOC								
Engineering Milestones Link 16 Network																														
Test & Evaluation Milestones Link 16 Network																														

Legend:

DNM - Dynamic Network Management	CDR - Critical Design Review	MOS - Multifunctional Information Distribution System (MIDS) On Ship (MOS)
MS - Milestone	JTIDS - Joint Tactical Information Distribution System	DTRR - Developmental Test Readiness Review
FDDR - Full Development Decision Review	CM - Cryptographic Modernization	OTRR - Operational Test Readiness Review
FDC - Full Operating Capability	FR - Frequency Remapping	DT - Developmental Test
IOC - Initial Operating Capability	SRR - System Requirements Review	OT - Operational Test
	PDR - Preliminary Design Review	FOT&E - Follow-on Operational Test & Evaluation
		TRR - Test Readiness Review

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0205604N: *Tactical Data Links*

PROJECT
 2126: *ATDLS Integration*

Fiscal Year	2010				2011				2012				2013				2014				2015				2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Program Milestones C2P																																
Engineering Milestones C2P																																
Test & Evaluation Milestones C2P																																
Production Milestones C2P																																

Legend:
 Processor
 SRR - System Requirements Review
 PDR - Preliminary Design Review
 CDR - Critical Design Review
 LRIP - Low Rate Initial Production

DTRR - Developmental Test Readiness Review
 OTRR - Operational Test Readiness Review
 DT - Developmental Test
 OT - Operational Test
 FDR - Fielding Decision Review
 FOC - Full Operating Capability

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2126				
Link 16 Network DNM Critical Design Review	1	2010	1	2010
Link 16 Network JTIDS CM/FR Development System Requirements Review	3	2011	3	2011
Link 16 Network JTIDS DNM Developmental Test Readiness Review	3	2011	3	2011
Link 16 Network JTIDS DNM Developmental Test	4	2011	4	2011
Link 16 Network JTIDS DNM Operational Test Readiness Review	4	2011	4	2011
Link 16 Network JTIDS DNM Operational Test	1	2012	1	2012
C2P Tech Refresh System Requirements Review	2	2012	2	2012
Link 16 Network DNM Milestone C/Full Development Decision Review	2	2012	2	2012
Link 16 Network DNM Initial Operating Capability	2	2012	2	2012
Link 16 Network JTIDS CM/FR Development Preliminary Design Review	2	2012	2	2012
NGC2P Increment 2 Full Operating Capability	2	2012	2	2012
Link 16 Network MOS DNM Developmental Test Readiness Review	3	2012	3	2012
Link 16 Network MOS DNM Developmental Test	3	2012	3	2012
C2P Tech Refresh Preliminary Design Review	4	2012	4	2012
Link 16 Network MOS DNM Operational Test Readiness Review	4	2012	4	2012
Link 16 Network MOS DNM Follow On Operational Test & Evaluation	1	2013	1	2013
C2P Tech Refresh Critical Design Review	2	2013	2	2013
Link 16 Network JTIDS CM/FR Development Critical Design Review	2	2013	2	2013
Link 16 Network MOS CM/FR Development (Ship) System Requirements Review	3	2013	3	2013
Link 16 Network MOS CM/FR Development (Ship) Preliminary Design Review	3	2013	3	2013
Link 16 Network MOS CM/FR Development (Ship) Critical Design Review	4	2013	4	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 2126: <i>ATDLS Integration</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
C2P Tech Refresh Developmental Test Readiness Review	4	2013	4	2013
C2P Tech Refresh Developmental Test	1	2014	1	2014
Link 16 Network JTIDS/MOS CM/FR Integration (Ship) System Requirements Review	2	2014	2	2014
C2P Interoperability System Requirements Review	2	2014	2	2014
C2P Tech Refresh Operational Test Readiness Review	2	2014	2	2014
C2P Tech Refresh Low Rate Initial Production Procurement	3	2014	3	2014
Link 16 Network JTIDS CM/FR Test Readiness Review	3	2014	3	2014
Link 16 Network DNM Full Operating Capability	4	2014	4	2014
Link 16 Network JTIDS/MOS CM/FR Integration (Ship) Preliminary Design Review	4	2014	4	2014
C2P Interoperability Preliminary Design Review	4	2014	4	2014
C2P Tech Refresh Operational Test	4	2014	4	2014
Link 16 Network JTIDS CM/FR Integration (Air) System Requirements Review	1	2015	1	2015
C2P Interoperability Critical Design Review	2	2015	2	2015
Link 16 Network JTIDS/MOS CM/FR Integration (Ship) Critical Design Review	2	2015	2	2015
Link 16 Network JTIDS CM/FR Integration (Air) Preliminary Design Review	3	2015	3	2015
C2P Tech Refresh Fielding Decision Review	3	2015	3	2015
Link 16 Network CM/FR (Ship) Developmental Test Readiness Review	3	2015	3	2015
Link 16 Network CM/FR (Ship) Developmental Test	4	2015	4	2015
Link 16 Network JTIDS CM/FR Integration (Air) Critical Design Review	1	2016	1	2016
Link 16 Network CM/FR (Ship) Operational Test Readiness Review	1	2016	1	2016
Link 16 Network CM/FR (Ship) Operational Test	2	2016	2	2016
C2P Link 22 System Requirements Review	4	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 4022: <i>Other Tactical Data Link Engineering</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4022: <i>Other Tactical Data Link Engineering</i>	-	-	12.000	-	12.000	27.000	-	-	-	0.000	39.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

See Classified Annex for details of this project.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Other Tactical Data Link Engineering	-	-	12.000
Articles:			0
FY 2012 Plans: See Classified Annex for details of this project.			
Accomplishments/Planned Programs Subtotals	-	-	12.000

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

See Classified Annex for details of this project.

E. Performance Metrics

See Classified Annex for details of this project.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 4022: <i>Other Tactical Data Link Engineering</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	TBD	TBD:TBD	-	-		10.500	Mar 2012	-		10.500	24.400	34.900	34.900
Subtotal			-	-		10.500		-		10.500	24.400	34.900	34.900

Remarks
See Classified Annex for details of this project.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	TBD	TBD:TBD	-	-		0.125	Mar 2012	-		0.125	0.125	0.250	0.250
Subtotal			-	-		0.125		-		0.125	0.125	0.250	0.250

Remarks
See Classified Annex for details of this project.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	TBD	TBD:TBD	-	-		1.375	Dec 2011	-		1.375	1.850	3.225	2.725
Subtotal			-	-		1.375		-		1.375	1.850	3.225	2.725

Remarks
See Classified Annex for details of this project.

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		12.000		-		12.000	26.375	38.375	37.875

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 4022: <i>Other Tactical Data Link Engineering</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Proj 4022	
See Classified Annex for Details.	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205604N: <i>Tactical Data Links</i>	PROJECT 4022: <i>Other Tactical Data Link Engineering</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4022				
See Classified Annex for Details.	1	2012	1	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	38.175	32.877	22.010	-	22.010	27.478	35.294	27.928	27.906	Continuing	Continuing
1916: <i>Surface ASW System Improvement</i>	38.175	32.877	22.010	-	22.010	27.478	35.294	27.928	27.906	Continuing	Continuing

A. Mission Description and Budget Item Justification

The 'Vision for Anti-Submarine Warfare (ASW) Superiority' provides a foundation on which to base the operational principles and force attributes needed to prevail against future adversary submarines. Fully aligned with 'A Cooperative Strategy for 21st Century Seapower', it is intended to establish a consistent sense of urgency, and guide the development of a comprehensive long-term strategy and attendant execution plans to achieve and sustain a strategic and operational advantage, and maximize the potential for tactical advantage in future operationally-relevant environments. Our nation and maritime forces face an evolving submarine threat of increasing lethality. Evolving submarine technologies offer enhanced stealth, speed, endurance, weapons and operational proficiency, trends foretelling that the adversary submarine of the future will have a significantly larger sphere of influence, while presenting less vulnerability to ASW forces. Furthermore, the effective offensive engagement range of the adversary submarine of the future will continue to match or outrange individual U.S. and multinational platform sensors and weapons in many tactical environments. ASW forces must be effective in all operating environments, ranging from the deep open ocean to the shallow coastal waters and littorals. The noisy undersea environment, coupled with stealthier submarines, challenges the ability of our sensors to detect, localize, and track threat submarines.

The objective of this Program Element (PE) is to significantly improve existing Surface Ship Undersea Warfare (USW) sonar system capabilities through quick and affordable development/integration of emergent, transformational technologies in support of Littoral ASW, Theater ASW, Mine Reconnaissance, and overall Sea Shield efforts required to pace the threat. Detection and classification play uniquely vital roles in the success of any ASW campaign. To be effective against increasingly stealthy threats in an often ambiguous undersea environment, future sensors must be environmentally adaptive, have very low false alarm rates, and exploit the full range of current and future submarine detection vulnerabilities.

Project 1916's primary mission is to improve AN/SQQ-89(V) Measures Of Performance (MOP) by enhancing detection, tracking, classification, passive, active, torpedo Detection, Classification, and Localization (DCL) and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth (Operational Requirements Document #667-76-05 titled 'AN/SQQ-89 Improvement Program', Test and Evaluation Master Plan 801 and 802-2 (TEMP 801 & TEMP 802-2)). This project takes advantage of the AN/SQQ-89(V) Open System Architecture (OSA) and Acoustic Rapid Commercial-Off-The-Shelf (COTS) Insertion (ARCI) initiatives to integrate a torpedo DCL and ASW sonar combat system capability improvements. This COTS-based Surface Ship ASW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (CG59-73 Baseline 3 and 4) and DDG51 (All FLT I/II/IIA) class ships. The Open Architecture (OA) (level 3 compliant) of the AN/SQQ-89A(V)15 system drives the Advanced Capability Build (ACB) spiral development process and provides budget flexibility to make COTS/OA technology solutions and ARCI-type initiatives affordable. This will be accomplished via the incorporation of select Pre-Planned Product Improvements (P3I) and emergent, transformational ASW technologies delivered to the AN/SQQ-89(V) prime integrator every two years. ASW technology implementation will take advantage of improvements developed under the submarine Advanced Processing Build (APB) program and will in turn share unique improvements developed under this program with the submarine and surveillance ASW communities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i>	PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>
BA 7: <i>Operational Systems Development</i>	

Project 1916 also includes funding for the Surface Ship Enhanced Measurement Program (SSEMP), which will measure the performance of existing and new Surface Ship ASW combat systems and enables data-based assessment of the capabilities and shortfalls in the performance of these systems in realistic scenarios.

Project 1916 also includes funding, for the Surface ASW Synthetic Training (SAST) program (under the Surface Ship ASW Synthetic Signatures Generation and Training Acceleration Initiative), including the development of a high fidelity acoustic simulation of a surface ship sonar. This effort will accelerate the implementation and integration of the Submarine Multi-Mission Team Trainer (SMMTT) Navy Continuous Training Environment (NCTE) solution/baseline to the surface ship paradigm. The training, skills, and proficiency of all personnel supporting ASW operations must be approached in a coordinated, concentrated, and properly-resourced manner to overcome past deficiencies. The full spectrum of training must be addressed, from synthetic to the experience gained from actual and exercise operations. Technology must be exploited fully to provide assistance to operators, tacticians, and commanders, in order to improve and maintain their capability against the evolving threat. Delivery of SAST capability will be provided via the ACB spiral development process.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	41.630	32.877	26.992	-	26.992
Current President's Budget	38.175	32.877	22.010	-	22.010
Total Adjustments	-3.455	-	-4.982	-	-4.982
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.000	-			
• SBIR/STTR Transfer	-1.185	-			
• Program Adjustments	-	-	-4.467	-	-4.467
• Section 219 Reprogramming	-0.269	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.515	-	-0.515
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>				PROJECT 1916: <i>Surface ASW System Improvement</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1916: <i>Surface ASW System Improvement</i>	38.175	32.877	22.010	-	22.010	27.478	35.294	27.928	27.906	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Surface ASW Systems Improvements Project will support essential performance enhancements to AN/SQQ-89(V) and Surface Ship Sonar Systems. This project will improve AN/SQQ-89(V) MOP by enhancing detection, tracking, classification, active, passive, torpedo DCL, and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth (Operational Requirements Document #667-76-05 titled 'AN/SQQ-89 Improvement Program'), Test and Evaluation Master Plan 801 and 802-2 (TEMP 801 & TEMP 802-2).

This project will take advantage of the AN/SQQ-89(V) OSA and ARCI initiatives to integrate a TDCL and ASW sonar and combat system capability improvements. This COTS-based Surface Ship ASW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (CG59-73 Baseline 3 and 4) and DDG51 (All FLT I/II/IIA) class ships. This project has delivered the AN/SQQ-89A(V)15 Pre-Production Prototype, performed installation on board CG73, and conducted subsequent Developmental Test & Evaluation (DT&E) and Initial Operational Test & Evaluation (IOT&E) where the system was found 'Operationally Effective' by Command Operational Test and Evaluation Force (COMOPTEVFOR).

The OSA and high performance COTS processing hardware on ships fielded with the AN/SQQ-89A(V)15 combat system provides an opportunity to integrate select P3I as well as emergent, transformational ASW technological improvements that were previously unachievable. The Undersea Warfare (USW) suites on these ships will require periodic upgrades to remain effective well into the 21st century and to pace the threat. Software upgrades target capability increases in high interest areas as prescribed by the Fleet and captured in campaign analysis. To achieve this, this project will package and deliver incremental upgrades every two years to the AN/SQQ-89A(V)15 production program via an ACB spiral development process (ACB-11, ACB-13, etc.) by inserting maturing USW technologies, such as enhancements to improve USW performance in the littoral, reduced manning on AN/SQQ-89(V) equipped ships (operator efficiency upgrades via the implementation of robust embedded data record and replay capability and active/passive sonar simulation/stimulation), DCL active/passive processing upgrades (passive sonar automated detection and classification processing bell-ringers from the ASW Community-of-Interest, detect and track through maneuvers, integration of MH-60R mission systems with the AN/SQQ-89A(V)15 combat system, integration of Mid-Frequency active detection improvements, false-alarm rate reduction, clutter reduction, and integration of ASW Community-of-Interest improved acoustic intercept and small-object avoidance), ASW Multi-Sensor integration (acoustic similar-source fusion and implementation of integrated shipboard system data, and ASW combat display architecture and reduced watch-team operational concept implementation), distributed engagement management (Network Centric Enterprise Services implementation, new displays and decision aids, ASW Community-of-Interest model capabilities implementation), marine mammal detection and mitigation, Multi-Static Active ASW, Multi-Frequency Acoustic Communications (MF ACOMMS) between Surface Combatants and Submarines, new RAPTOR radar processing, and upgraded technologies such as algorithm improvements, increased Passive Narrow Band (PNB) frequency, improved Extended Echo Ranging (EER), and beamformer improvements. A rigorous testing program is also required to ensure that these performance enhancements are operationally effective and suitable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>	PROJECT 1916: <i>Surface ASW System Improvement</i>
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Project 1916 also includes funding for the Surface Ship Enhanced Measurement Program (SSEMP), which will measure the performance of existing and new Surface Ship ASW combat systems and enables data based assessment of the capabilities and shortfalls in the performance of these systems in realistic scenarios.

Project 1916 also includes funding, for the Surface ASW Synthetic Training (SAST) program (under the Surface Ship ASW Synthetic Signatures Generation and Training Acceleration Initiative), including the development of a high fidelity acoustic simulation of a surface ship sonar based on the Improved Performance Sonar (IPS) baseline. This effort will accelerate the implementation and integration of the Submarine Multi-Mission Team Trainer (SMMTT) Navy Continuous Training Environment (NCTE) solution/baseline to the surface ship paradigm for high fidelity active and passive simulation for the improvement of operator proficiency, development of a rapid acoustic reconstruction capability, and to ensure SAST interoperability via the AEGIS Combat Training System (ACTS) and Battle Force Tactical Trainer (BFTT). SAST capability will be fielded throughout the force, via ACB updates to the AN/SQQ-89A(V)15 system, while spiraling in additional ASW sensors, as well as full High Level Architecture (HLA)/NCTE interoperability.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: SQQ-89A(V)15 Surface Ship ASW Advanced Capability Build (ACB) Development</p> <p>Description: Develop enhancements to the AN/SQQ-89A(V)15 Open System Architecture (OSA) via the integration of transformational technologies through an ACB spiral development process. Items include hull-mounted Acoustic Intercept (ACI) sensor, ACI performance predictions and signal injection capabilities, Marine Mammal Detection and Mitigation (MMDM) capability, hull array adaptive beamformer and towed array shape compensated beamformer improvements via the Beamformer Functional Segment (BFFS), Mid-Frequency Active (MFA) Cooperative Organic Mine Defense (COMID) mine avoidance upgrades, MFA rapid replay and multi-waveform tracker, Hull Passive Processing Functional Segment (HPPFS) improvements, Sensor Performance Prediction Functional Segment (SPPFS) improvements, Low Frequency Multi-Static Functional Segment (LFMFS) improvements, Undersea Warfare Control Functional Segment (UCFS) improvements, Supportability Functional Segment (SupFS) improvements, Recording Functional Segment (RecFS) improvements, Common System Services/Mission Package Services (CSS/MPS) improvements, full bandwidth towed array passive ASW and automated torpedo DCL algorithm improvements (active/passive) within the Torpedo Recognition and Alertment Functional Segment (TRAFS) necessary to extend detection ranges and reduce false alert/alarm rates, new Data Fusion Functional Segment (DFFS) sensor to reduce the number of displays required for system operation, Multi-Frequency Acoustic Communications (MF ACOMMS) development, integration of MH-60R mission systems with the AN/SQQ-89A(V)15 combat system, Extended Echo Ranging (EER) "Distant Thunder" integration into the AN/SQQ-89A(V)15 Surface Common Airborne Undersea Sensor System (CAUSS) Functional Segment airframe sensor processing suite, explosive source integration with AN/SQQ-89A(V)15 processes, simplification of displays and active processing, incorporation of all Improved Performance Sonar (IPS) and Scaled Improved Performance Sonar (SIPS) features, and a Sonar Logger capability to significantly reduce operator data logging requirements. These items will be integrated and delivered to the CG47 and DDG51 class AN/SQQ-89A(V)15 backfit production programs via ACB updates. Import advanced</p>	<p>34.475</p> <p>0</p>	<p>29.163</p> <p>0</p>	<p>18.282</p> <p>0</p>
Articles:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>	PROJECT 1916: <i>Surface ASW System Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>development capabilities from the submarine Advanced Processing Build (APB) and Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) projects. Export advanced capabilities to submarine and surveillance combat system programs.</p> <p>Resolve/troubleshoot issues/deficiencies that arise from the AN/SQQ-89(V) Surface Ship ASW Test & Evaluation program. Rapidly address and correct problems/deficiencies in processing, capability or operations within the following areas within the AN/SQQ-89(V) USW combat system architecture; sensor processing, acoustics, MMDM, fire control, contact management, performance prediction, operator productivity and on-board training, MFTA, Digital Fire Control Interface (DFCI), Remote Mine-Hunting System (RMS), MFA processing, and adaptive beamforming.</p> <p><i>FY 2010 Accomplishments:</i> Continued the development of enhancements to the AN/SQQ-89A(V)15 OSA via the integration of transformational technologies through an ACB spiral development process. These enhancements will be integrated and delivered to the CG47 and DDG51 class AN/SQQ-89A(V)15 backfit production programs via ACB updates (ACB-11). Imported advanced development capabilities from the submarine Advanced Processing Build (APB) and Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) projects. Completed the development, integration and testing of the prototype ACB-11.</p> <p>Continued development of a high fidelity acoustic simulation of a surface ship sonar based on the IPS baseline under the Surface Ship ASW Synthetic Signatures Generation and Training Acceleration Initiative. Accelerated the implementation and integration of the SMMTT NCTE solution/baseline to the surface ship paradigm for high fidelity active and passive simulation for the improvement of operator efficiency, development of a rapid acoustic reconstruction capability, and to ensure SAST interoperability via the ACTS and BFTT.</p> <p><i>FY 2011 Plans:</i> Continue the development of enhancements to the AN/SQQ-89A(V)15 OSA via the integration of transformational technologies through an ACB spiral development process (ACB-13). Import advanced development capabilities from the submarine Advanced Processing Build (APB) and Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) projects. Support the certification of ACB-11.</p> <p>Finalize development/integration and complete qualification testing of a high fidelity acoustic simulation of a surface ship sonar based on the IPS baseline under the Surface Ship ASW Synthetic Signatures Generation and Training Acceleration Initiative.</p> <p><i>FY 2012 Plans:</i></p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>		PROJECT 1916: <i>Surface ASW System Improvement</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2010
Complete development of enhancements to the AN/SQQ-89A(V)15 for ACB-13. Deliver the ACB-13 software build to the AEGIS certification process. Initiate development of concepts and capabilities for ACB-15.				FY 2011
Title: AN/SQQ-89(V) Surface Ship ASW Test & Evaluation Program				FY 2012
Articles:				0.700
				0
FY 2010 Accomplishments: In support of ACB-11, provided AN/SQQ-89(V) Surface Ship ASW test and evaluation planning support; SAT analysis; determined test ship and location, target/personnel/material requirements; developed a test plan based on system configuration, at-sea data requirements, and ship, target, and range availabilities; coordinated and conducted at-sea tests/trial demonstrations of AN/SQQ-89(V) systems and associated ACB/Technology Insertion (TI) capabilities; and provided performance data and environmental analysis, Independent Verification & Validation (IV&V), and modeling and simulation using Measures of Performance (MOP) and Measures Of Effectiveness (MOE) methods. Completed step 3 System Qualification Test				0.714
FY 2011 Plans: In support of ACB-11, complete Aegis Integration Event (AIE) 3Q11.				0
In support of ACB-13, provide AN/SQQ-89(V) Surface Ship ASW test and evaluation planning support; SAT analysis; determine test ship and location; target/personnel/material requirements; and develop a test plan based on system configuration, at-sea data requirements, and ship, target, and range availabilities.				0.728
FY 2012 Plans: Continue ACB-13 AN/SQQ-89(V) Surface Ship ASW test and evaluation planning support; SAT analysis, determine test ship, test location, target requirements, personnel requirements and materials required, develop a test plan based on system configuration, at-sea data requirements, and ship, target, and range availabilities.				0
Title: Surface Ship Enhanced Measurement Program (SSEMP)				3.000
Articles:				0
Description: Analyzed the sonar employment in the operational setting and reported results for improvement of training/employment guidance. Performed Fleet exercise data reconstruction and post-test analysis each year. Conducted selected at-sea data collection activities by providing planning support, ship riders, and analyst support. Evaluated prototype sonar employment tactics, sonar processing and automation algorithms, and communication protocols for the detection, classification, tracking, and intra-Fleet hand-off to Fleet ASW assets, and provided summary reports to document results.				3.000
FY 2010 Accomplishments:				0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>	PROJECT 1916: <i>Surface ASW System Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>Completed ACB-09 Baseline Assessment, acoustic reconstruction and environmental analysis of SSEMP Case 25, and MFTA flow noise follow-up analysis using SH160 (USS John S McCain). Commenced analysis of MFTA Flow Noise follow-up using Combat System Ships Qualification Trials (CSSQT) data (USS Mason), screening of SSEMP Case 24, and analysis of at-sea ACB-09 operator test data.</p> <p>FY 2011 Plans: Continue at-sea ACB-09 operator testing, support for training and ACB development recommendations based on operational systems analyses, and conduct of acoustic and environmental case analyses of real world data.</p> <p>FY 2012 Plans: Commence ACB-11 Baseline Assessment and operator testing and analysis of SSEMP cases.</p>			
Accomplishments/Planned Programs Subtotals	38.175	32.877	22.010

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/2136: <i>AN/SQQ-89 Surface ASW Combat System</i>	72.123	87.219	73.829	0.000	73.829	81.942	97.341	73.375	125.524	Continuing	Continuing
• OPN/0900: <i>DDG Modernization</i>	159.296	296.691	119.522	0.000	119.522	441.455	346.020	692.153	519.938	Continuing	Continuing
• OPN/0960: <i>CG Modernization</i>	316.711	356.958	590.349	0.000	590.349	594.209	642.274	246.502	245.904	Continuing	Continuing

D. Acquisition Strategy

- Completed AN/SQQ-89A(V)15 Surface Ship ASW Combat System Pre-Production Prototype, performed installation, conducted DT&E, and Initial IOT&E. Via an ACB spiral development process, incorporate evolutionary and transformational technologies into AN/SQQ-89A(V)15 production systems (planned for Baseline 3 and 4 CG47 Class and FLT I/II/IIA DDG51 Class hulls) at scheduled intervals to pace the threat.
- Awarded new, competitive contract for AN/SQQ-89(V) prime system integrator in FY 2007.

E. Performance Metrics

- Deliver incremental capability increases in high interest areas, as prescribed by the Fleet and captured in campaign analysis, every two years to the AN/SQQ-89A(V)15 production program via an ACB spiral development process (ACB-09, ACB-11, ACB-13, etc.) by inserting maturing USW technologies.
- Continue ACB-11 development reflecting active capability for Continuous Active Sonar (CAS) including clutter reduction, passive processing from submarine APB-09, SAST, and improvements in contact and data management. Plan for and execute ACB-11 Sea Test in 4Q10.
- Continue SAST system development, integration and testing including supporting ACB-11 sea testing in FY10.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>	PROJECT 1916: <i>Surface ASW System Improvement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SQQ-89 S/W Development/Integration	C/CPFF	AAC:NY	3.108	1.400	Dec 2010	1.300	Dec 2011	-		1.300	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	AM:VA	9.772	1.850	Dec 2010	1.750	Dec 2011	-		1.750	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	GD-AIS:VA	11.172	0.150	Feb 2011	-		-		-	0.000	11.322	
SQQ-89 S/W Development/Integrationm Text	C/CPFF	In-Depth Engineering:VA	-	2.100	Feb 2011	1.950	Dec 2011	-		1.950	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	JHU/APL:MD	4.325	4.350	Dec 2010	3.961	Dec 2011	-		3.961	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	Lockheed Martin:NY	6.705	2.000	Feb 2011	-		-		-	0.000	8.705	
SQQ-89 S/W Development/Integration	C/CPFF	Lockheed Martin:VA	-	1.800	Feb 2011	1.800	Dec 2011	-		1.800	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	WR	NSWC/Carderock:MD	1.720	-		-		-		-	0.000	1.720	
SQQ-89 S/W Development/Integration	WR	NSWC/Dahlgren:VA	1.222	0.114	Feb 2011	0.104	Oct 2011	-		0.104	Continuing	Continuing	Continuing
SQQ-89 S/W TDA Support	WR	NUWC/Newport:RI	4.398	1.075	Nov 2010	1.325	Oct 2011	-		1.325	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	SEDNA:VA	-	1.400	Dec 2010	1.400	Dec 2011	-		1.400	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	SS/CPFF	UT/ARL:TX	4.254	2.680	Feb 2011	2.200	Dec 2011	-		2.200	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	WR	VAR:VAR*	5.120	2.497	Feb 2011	2.113	Dec 2011	-		2.113	Continuing	Continuing	Continuing
SAST Development/Integration	C/CPFF	JHU/APL:MD	4.552	3.750	Dec 2010	-		-		-	0.000	8.302	
SAST Development/Integration	WR	NSWC/Carderock:MD	8.905	2.360	Nov 2010	-		-		-	0.000	11.265	
SAST Development/Integration	WR	NUWC/Newport:RI	2.700	0.250	Nov 2010	-		-		-	0.000	2.950	
	C/CPFF	SEDNA:VA	4.327	0.465	Dec 2010	-		-		-	0.000	4.792	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>	PROJECT 1916: <i>Surface ASW System Improvement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SAST Development/Integration													
SAST Development/Integration	C/CPFF	UT/ARL:TX	1.607	0.045	Feb 2011	-		-		-	0.000	1.652	
SAST Development/Integration	C/CPFF	VAR:VAR*	-	0.380	Feb 2011	-		-		-	0.000	0.380	
Subtotal			73.887	28.666		17.903		-		17.903			

Remarks

*Consists of multiple performing activities with funding for each not greater than \$1M per year.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SSEMP ConductTest/Data Evaluation	C/CPFF	JHU/APL:MD	3.810	1.950	Dec 2010	1.950	Dec 2011	-		1.950	Continuing	Continuing	Continuing
SSEMP Conduct/Test/Data Evaluation	WR	NUWC/Newport:RI	0.912	0.450	Nov 2010	0.450	Oct 2011	-		0.450	Continuing	Continuing	Continuing
SSEMP Conduct/Test/Data Evaluation	C/CPFF	UT/ARL:TX	1.278	0.600	Feb 2011	0.600	Dec 2011	-		0.600	Continuing	Continuing	Continuing
SQQ-89 IV&V/SAT/TEMP Assess./Update	WR	NUWC/Newport:RI	0.926	0.350	Nov 2010	0.350	Oct 2011	-		0.350	Continuing	Continuing	Continuing
SQQ-89 DT/OT/Miscellaneous T&E	WR	VAR:VAR*	1.125	0.350	Feb 2011	0.310	Dec 2011	-		0.310	Continuing	Continuing	Continuing
Subtotal			8.051	3.700		3.660		-		3.660			

Remarks

*Consists of multiple performing activities with funding for each not greater than \$1M per year.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>
PROJECT 1916: <i>Surface ASW System Improvement</i>	

Fiscal Year	2010				2011				2012				2013				2014				2015				2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Development/Integration Milestones																																
AN/SQQ-89A(V)15 Software Sensor Segment Development/Integration/Certification - ACB-11	█			▲ SQT	△ AIE																											
AN/SQQ-89A(V)15 Software Sensor Segment Development/Integration/Certification - ACB-13	█			ACB-13 Development/Step Evaluation/PRT/Integration/Cert.				△ SQT				△ AIE																				
AN/SQQ-89A(V)15 Software Sensor Segment Development/Integration/Certification - ACB-15	█			ACB-15 Development/Step Evaluation/PRT/Integration/Cert.				△ SQT				△ AIE																				
AN/SQQ-89A(V)15 Software Sensor Segment Development/Integration/Certification - ACB-17	█			ACB-17 Development/Step Evaluation/PRT/Integration/Cert.																												
Surface ASW Synthetic Training (SAST) Development and Functional Segment/Spiral Integration into AN/SQQ-89A(V)15 - ACB-11	█			▲ SQT																												
Test & Evaluation Milestones																																
AN/SQQ-89A(V)15 Developmental Test & Evaluation (DT&E) (Completed FY04), AN/SQQ-89A(V)15 Initial Operational Test & Evaluation (IOT&E) (Completed FY05, 'Operationally Effective' per COMOTEVFOR)																																
Surface Ship Enhanced Measurement Program (SSEMP)	█			Conduct Fleet exercise data collection, reconstruction, and post-test analysis of Surface Ship ASW system operational performance																												
Production/Delivery Milestones																																
AN/SQQ-89A(V)15 Production Software ACB-11/13/15 Delivery to System Prime/Integrator	█			▲ ACB-11	△ ACB-13				△ ACB-15																							
AN/SQQ-89A(V)15 Backfit Fielding Plans Install Start Date Shown; Sequential System # Shown in () by Platform																																
DDG FLT IIA (DDG79-112)			(4)	(5,6)	(7,8,9)	(10)	(11,12)	(13,14)	(15)	(16,17)	(18,19)	(20)	(21)	(22)	(23,24)	(25)	(26,27)	(28,29)														
DDG FLT I/II (DDG51-78) (Adjunct Upgrade)								(1)																								
DDG FLT I/II (DDG51-78) (via DDG MOD Program)								(1)	(2)	(3)					(4)	(5)	(6)															
CG B/L III/IV (CG59-73) (via CG MOD Program)								(1,2)	(3,4)	(5)	(6,7,8)	(9,10)	(11)	(12)	(13)	(14)																

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205620N: <i>Surface ASW Cmbt Sys Integr</i>	PROJECT 1916: <i>Surface ASW System Improvement</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1916				
SQQ-89A(V)15 ACB-11 Dev./Step Eval./PRT/Integ./Cert.	1	2010	3	2010
SQQ-89A(V)15 ACB-11 System Qualification Test (SQT)	4	2010	4	2010
SQQ-89A(V)15 ACB-11 Aegis Integration Event (AIE)	3	2011	3	2011
SQQ-89A(V)15 ACB-13 Dev./Step Eval./PRT/Integ./Cert.	4	2010	4	2012
SQQ-89A(V)15 ACB-13 SQT	1	2013	1	2013
SQQ-89A(V)15 ACB-13 AIE	3	2013	3	2013
SQQ-89A(V)15 ACB-15 Dev./Step Eval./PRT/Integ./Cert.	2	2013	2	2015
SQQ-89A(V)15 ACB-15 SQT	3	2015	3	2015
SQQ-89A(V)15 ACB-15 AIE	1	2016	1	2016
SQQ-89A(V)15 ACB-17 Dev./Step Eval./PRT/Integ./Cert.	4	2015	4	2016
SAST ACB-11 Functional Segment Integration	1	2010	3	2010
SAST ACB-11 SQT	4	2010	4	2010
Surface Ship Enhanced Measurement Program (SSEMP)	1	2010	4	2016
SQQ-89A(V)15 ACB-11 Prdtn. S/W Delivery to Integrator	1	2011	1	2011
SQQ-89A(V)15 ACB-13 Prdtn. S/W Delivery to Integrator	2	2013	2	2013
SQQ-89A(V)15 ACB-15 Prdtn. S/W Delivery to Integrator	4	2015	4	2015
SQQ-89A(V)15 DDG51 Class FLT IIA Backfit Install (Adjunct Upgrade)	1	2010	3	2015
SQQ-89A(V)15 DDG51 Class FLT I/II Backfit Install (Adjunct Upgrade)	3	2010	1	2012
SQQ-89A(V)15 DDG51 Class FLT I/II Backfit Install (via DDG MOD Program)	3	2012	4	2015
SQQ-89A(V)15 CG47 Class B/L III/IV Backfit Install (via CG MOD Program)	2	2012	2	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	33.621	26.234	39.288	-	39.288	29.009	25.927	26.528	27.079	Continuing	Continuing
0366: <i>MK 48 ADCAP</i>	27.646	26.234	39.288	-	39.288	29.009	25.927	26.528	27.079	Continuing	Continuing
9999: <i>Congressional Adds</i>	5.975	-	-	-	-	-	-	-	-	0.000	5.975

A. Mission Description and Budget Item Justification

A. (U) Mission Description and Budget Item Justification:

MK-48 ADCAP (Advanced Capability) Research, Development, Test and Evaluation (RDT&E) program executes incremental development of weapon performance improvements in three development product areas: (1) Common Broadband Advanced Sonar System (CBASS), (2) Advanced Processor Builds (APBs), and (3) Torpedo Technology Insertion. The budget enables Acquisition Category (ACAT) III development to address Chief of Naval Operations (CNO) defined capability-based requirements and mission needs. This Program Element (0205632N/0366) is tied to development programs that leverage a joint United States/Australia Armaments Cooperative Project (ACP) to develop MK-48 ADCAP CBASS; and Future Naval Capability (FNC) technologies developed by the Office of Naval Research (ONR).

(U) Countermeasure (CM) sophistication and availability on the open market directly affects ADCAP kill proficiency and its ability to counter rapidly evolving threats. The focus of the MK-48 ADCAP torpedo Research and Development (R&D) program from FY 2001 and out shifted from being primarily concentrated on Software Block Upgrade efforts towards coordinated hardware upgrades, rapid Commercial-Off-the-Shelf (COTS) insertion, and APBs to rapidly upgrade the ADCAP to counter evolving threats and maintain robust performance. The CBASS program developed and fielded a broadband sonar capable of identifying CMs and discriminating them from the target. CBASS Phase I achieved IOC in FY 2006. The Commonwealth of Australia Royal Navy is jointly participating to develop CBASS Phase II to improve shallow water performance and signed a MOA extension Nov 2009. The MOA extension expires Nov 2019.

(U) The MK-48 ADCAP torpedo R&D program focuses on two specific areas near term: Torpedo APBs and hardware tech insertions. The CNO continues to stress shallow water (less than 600 feet) as a critical operating area to counter third world diesel electric submarines. Torpedo testing in shallow water has demonstrated that in-service ADCAP has less than full capability in this difficult environment. However, this testing, in conjunction with laboratory simulation efforts, has shown that significant performance improvements can be made by implementing changes to weapon tactics and software algorithms. Development, implementation, and testing of these changes is being accomplished under the Torpedo APB program. The APB program also leverages the RAN joint torpedo program and FNC technologies developed by the ONR in the areas of torpedo broadband signal processing, tactics processing, and alertment. The Torpedo tech insertion program will leverage from MK-54 Lightweight torpedo algorithms. Further hardware investment involves development of G&C replacement required to support production and development of Automated Test Equipment replacement to improve comprehensive system testing of full up CBASS Torpedoes.

(U) The Torpedo Technology Insertion program will provide for evolutionary torpedo improvements and upgrades (including the transition and testing of advanced technologies from the R&D community (6.2/6.3 and contractors). This approach will incorporate developmental testing of the FNC transitioning technologies for ADCAP upgrades in the areas of torpedo

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0205632N: <i>MK-48 ADCAP</i>

sensors, weapon/platform connectivity, warhead lethality, speed and depth. These efforts will continue torpedo development investment at a lower cost and shorter term than traditional torpedo programs.

(U) A modification to the CBASS Spiral 4 program was directed by CNO to address a Fleet Urgent Operation Need (UON), which enables the early fielding of specific Spiral 4 capabilities. Development of these changes are being accomplished under the APB program and are referred to as the Torpedo UON Rapid Fielding (TURF) effort. The TURF effort was inserted into CBASS Spiral 4 and will be Fleet released in FY11, pushing spiral 4 IOC from 2nd Qtr FY12 to 4th Qtr FY12. The TURF effort also suspends APB 5 development that started in FY10 and delays the restart until 1st Qtr FY13.

(U) Both FNC technologies and MK-54 Lightweight torpedo developments will be transitioned into ADCAP through Technology Insertion packages. Priorities for Technology Insertion are a new array to improve torpedo effectiveness, advanced processing, and advanced counter-countermeasure capability.

It has been determined that program effectiveness can be improved by developing and delivering Automated Test Equipment (ATE) production restarts so development is planned to start in FY 2012. Additionally R&D to support production restart efforts on Guidance & Control (G&Cs) can be built to match up with 50 arrays and Afterbody/Tail Cone (AB/TCs) thus increasing inventory numbers.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	34.235	26.234	26.746	-	26.746
Current President's Budget	33.621	26.234	39.288	-	39.288
Total Adjustments	-0.614	-	12.542	-	12.542
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.590	-			
• Program Adjustments	-	-	14.071	-	14.071
• Rate/Misc Adjustments	-	-	-1.529	-	-1.529
• Congressional General Reductions Adjustments	-0.024	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Small Business Technology Insertion*

	FY 2010	FY 2011
	5.975	-
	5.975	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

FY 2010	FY 2011
5.975	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>	PROJECT 0366: <i>MK 48 ADCAP</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0366: <i>MK 48 ADCAP</i>	27.646	26.234	39.288	-	39.288	29.009	25.927	26.528	27.079	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Notes: Articles reflect: FY 2010 - Continue Spiral 4 software development and testing; delivery of final report and completion of Spiral 4 DT/OT in FY 2012 with IOC in FY 2012;

A. (U) Mission Description and Budget Item Justification:

MK-48 ADCAP RDT&E program executes incremental development of weapon performance improvements in two development product areas: (1) APBs, and (2) Torpedo Technology Insertion. The budget enables ACAT III development to address CNO defined capability-based requirements and mission needs. This Program Element (0205632N/0366) is tied to development programs that leverage a joint United States/Australia ACP to develop MK-48 ADCAP; and FNC technologies being developed by the ONR.

FY 2012 - APB Software upgrades will improve torpedo performance in challenging water, countered environments through incorporation of new algorithms designed to address broadband, multiband, classifications and tactics processing changes. Hardware technology insertions will improve weapon availability through development of a G&C replacement and an Automated Test Equipment replacement.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: TORPEDO APB	26.546	25.234	37.788
Articles:	0	0	0
FY 2010 Accomplishments: Continue development of Spiral 4 in preparation for software release (\$26,446K). Initiate development of APB 5 (\$100K). The APB technologies improve shallow water performance and increase the probability of kill.			
FY 2011 Plans: Finalize Spiral 4 Software development and start OT (\$16,134). Develop UON specific software version and support Quick Reaction Assessment (QRA) to field Phase 1 of TURF by 3rd Qtr FY11 (\$9,100), and Phase 2 of TURF by 4th Qtr FY11.			
FY 2012 Plans: Operational Support, Program Sustainment, and Spiral 4 OT (\$21,388K). Conduct development of the RDTE Guidance Control (G&C) initiative (\$11,500K) to support production restart efforts on G&C components so 50 G&Cs can be matched up with arrays and AB/TCs thus increasing inventory numbers. Start development of Automated Test Equipment (ATE) replacement (\$4,900).			
Title: OPERATIONAL TEST SUPPORT	1.100	1.000	1.500

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>	PROJECT 0366: <i>MK 48 ADCAP</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Articles:	0	0	0
<i>FY 2010 Accomplishments:</i> Provide for accreditation requirements and conduct analysis relating to Spiral 4 Software release planned in FY11.			
<i>FY 2011 Plans:</i> Continue Spiral 4 development. Complete TURF.			
<i>FY 2012 Plans:</i> Complete Spiral 4 OT.			
Accomplishments/Planned Programs Subtotals	27.646	26.234	39.288

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• WPN/3225: <i>MK-48 Torpedo ADCAP Mods</i>	56.134	43.559	42.493	0.000	42.493	54.648	60.002	64.760	65.808	Continuing	Continuing

D. Acquisition Strategy

Sole Source Production Contract awarded in FY 2004 for MK-48 ADCAP MODS, Lightweight MK-54, and Common Broadband Advanced Sonar System (CBASS) kits, including Royal Australian Navy (RAN) units. A full and competitive procurement for MK46 Mod 7 CBASS production kits is planned with a FY 2010/2011 base year and four option years for FY 2012-2015.

E. Performance Metrics

Milestone Reviews.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>	PROJECT 0366: <i>MK 48 ADCAP</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NUWC Newport (NPT):Newport RI	12.515	-		11.500	Oct 2011	-		11.500	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPFF	Progeny:Manassas VA	10.852	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			23.367	-		11.500		-		11.500			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NUWC NPT:Newport RI	11.999	3.097	Dec 2010	5.015	Oct 2011	-		5.015	Continuing	Continuing	Continuing
Software Development	Various	Various:Not Specified	23.120	13.197	Apr 2011	3.672	Dec 2011	-		3.672	Continuing	Continuing	Continuing
Integrated Logistics Support	WR	NUWC NPT:Newport RI	2.243	-		0.263	Oct 2011	-		0.263	Continuing	Continuing	Continuing
Systems Engineering WCF	WR	NUWC NPT:Newport RI	17.163	0.587	Mar 2011	1.650	Oct 2011	-		1.650	Continuing	Continuing	Continuing
Systems Engineering	Various	NUWC NPT:Newport RI	0.110	-		4.900	Dec 2011	-		4.900	0.000	5.010	
Subtotal			54.635	16.881		15.500		-		15.500			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	NUWC NPT:Newport RI	9.288	1.298	Apr 2011	3.467	Oct 2011	-		3.467	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	Operational Test Force:Norfolk VA	6.090	0.943	Apr 2011	0.250	Nov 2011	-		0.250	Continuing	Continuing	Continuing
Modeling & Simulation	WR	NUWC NPT:Newport RI	8.569	1.176	Mar 2011	-		-		-	Continuing	Continuing	Continuing
Modeling & Simulation	C/CPFF	ARL / PSU:State College PA	4.700	1.000	Jun 2011	1.500	Dec 2011	-		1.500	Continuing	Continuing	Continuing
Test & Evaluation	WR	NUWC Keyport (KPT):Keyport WA	17.380	4.316	Apr 2011	6.400	Oct 2011	-		6.400	0.000	28.096	
Subtotal			46.027	8.733		11.617		-		11.617			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>
PROJECT 0366: <i>MK 48 ADCAP</i>	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		R-1 ITEM NOMENCLATURE		PROJECT		DATE: February 2011																										
APPROPRIATION/BUDGET ACTIVITY		PE 0205632N: MK-48 ADCAP		0366: MK 48 ADCAP																												
1319: Research, Development, Test & Evaluation, Navy		PE 0205632N: MK-48 ADCAP		0366: MK 48 ADCAP																												
BA 07: Operational Systems Development		PE 0205632N: MK-48 ADCAP		0366: MK 48 ADCAP																												
PROGRAM EFFORTS	FY10				FY11				FY12				FY13				FY14				FY15				FY16							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Torpedo Advanced Processor Builds					▲				▲				▲																			
CBASS Spiral Development																																
APB 5 Development	▲				▲																											
APB Developmental Testing/Operational Testing (DT/OT)																																
Torpedo Technology Insertion																																
Guidance and Control Production Restart Efforts																																
Automated Test Equipment Production Restart Efforts																																

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Page 7 of 9R-1 Line Item #182

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>	PROJECT 0366: <i>MK 48 ADCAP</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0366				
Torpedo Advanced Processor Build (APB) Software Development	1	2010	4	2016
TURF 1	1	2011	1	2011
TURF 2	3	2011	3	2011
Spiral 4	2	2012	2	2012
CBASS Spiral Development	1	2010	1	2010
TURF 1 Fielded	2	2011	2	2011
TURF 2 Fielded	4	2011	4	2011
CBASS IOC	4	2012	4	2012
APB 5 Development	1	2010	1	2010
APB 5 Development - Restart	1	2013	1	2013
APB 5 Developmental Testing/Operational Testing (DT/OT)	3	2010	3	2010
Quick Reaction Assessment (QRA 1)	2	2011	2	2011
Quick Reaction Assessment (QRA 2)	3	2011	3	2011
Spiral 4 OT	3	2012	3	2012
APB 5 DT/OT	3	2016	3	2016
Guidance and Production Restart Efforts	1	2012	1	2012
Automated Test Equipment Production Restart Efforts	1	2012	1	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205632N: <i>MK-48 ADCAP</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	5.975	-	-	-	-	-	-	-	-	0.000	5.975
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional add for FY10 Small Business Technology Insertion.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Small Business Technology Insertion	5.975	-
FY 2010 Accomplishments: Small Business Technology Insertion for Torpedo Guidance and Control Open Architecture initiatives and the development of architectural commonality between both heavyweight and the lightweight torpedoes.		
Congressional Adds Subtotals	5.975	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Congressional Adds

E. Performance Metrics

Congressional Adds

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	121.986	133.611	123.012	-	123.012	118.817	117.581	118.672	118.705	Continuing	Continuing
0601: <i>Acft Handling & Service Equip</i>	4.496	1.849	6.522	-	6.522	7.786	8.600	7.311	3.266	Continuing	Continuing
0852: <i>Consolidated Auto Support System</i>	20.119	31.926	28.501	-	28.501	8.403	6.633	6.777	6.898	Continuing	Continuing
1041: <i>Acft Equip Repl/Maint Prog</i>	4.040	4.230	3.020	-	3.020	3.292	3.367	3.444	3.496	Continuing	Continuing
1355: <i>Propulsion and Power Component Improvement Program</i>	63.769	75.583	62.379	-	62.379	83.611	82.310	86.775	90.451	Continuing	Continuing
3189: <i>Digital I-TER</i>	0.900	-	0.001	-	0.001	-	-	-	-	0.000	0.901
3190: <i>Multi-Purpose Bomb Racks</i>	20.854	20.023	22.589	-	22.589	15.725	16.671	14.365	14.594	Continuing	Continuing
9999: <i>Congressional Adds</i>	7.808	-	-	-	-	-	-	-	-	0.000	7.808

A. Mission Description and Budget Item Justification

Project 0601 - Common Ground Equipment is a Naval Aviation Project to apply new technology to common support equipment necessary to support multiple aircraft. Project 0852 - Consolidated Automated Support System is a standardized Automated Test Equipment with computer assisted, multi-function capabilities to support the maintenance of aircraft subsystems and missiles. Project 1041 - Aircraft Equipment Reliability/Maintainability Improvement Program is the only Navy program that provides engineering support for in-service out-of-production aircraft equipment, and provides increased readiness at reduced operational and support cost. Project 1355 - Aircraft Engine Component Improvement Program develops reliability and maintainability and safety enhancements for in-service Navy aircraft engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, fuel systems, fuels, and lubricants. Project 3189 - is the Digital ITER program. The Digital ITER develops an increased capability to the existing BRU-42 Improved Triple Ejector Rack (ITER) for the AV-8B, which adds a multiple carriage capability for Smart Weapons. Project 3190 - is the Multi-Purpose Bomb Rack (MPBR). The MPBR will replace the BRU-41/42/33/55 and provide use for both tactical and training stores on one common rack. The MPBR will be integrated on the F/A-18E/F as part of this project. Project 9999 is Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	134.612	133.611	135.621	-	135.621
Current President's Budget	121.986	133.611	123.012	-	123.012
Total Adjustments	-12.626	-	-12.609	-	-12.609
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-9.192	-			
• SBIR/STTR Transfer	-2.614	-			
• Program Adjustments	-	-	-11.035	-	-11.035
• Section 219 Reprogramming	-0.811	-	-	-	-
• Rate/Misc Adjustments	-	-	-1.574	-	-1.574
• Congressional General Reductions Adjustments	-0.009	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

- Congressional Add: *Highly Conductive Lightweight Aircraft Sealant*
- Congressional Add: *Laser Peening for P-3 Life Extension*
- Congressional Add: *Arc Fault Circuit Breaker With Arc Location System*
- Congressional Add: *Wireless Sensors For Navy Aircraft*
- Congressional Add: *Lightweight Composite Structure Dev For Aerospace*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	0.956	-
	1.275	-
	0.797	-
	2.390	-
	2.390	-
Congressional Add Subtotals for Project: 9999	7.808	-
Congressional Add Totals for all Projects	7.808	-

Change Summary Explanation

Schedule:

Project 0601: The Engineering Change Proposal documentation efforts for the Turboprop Engine Test Instrumentation program took longer to complete than originally scheduled. Milestones have been revised to reflect the new schedule. The contract for the prototype Shipboard Firefighting Vehicle (SFV) was awarded to The Entwistle Co. on 31 March 2010. It was a sole source type contract that took longer to award than originally anticipated. As a result, the

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0205633N: <i>Aviation Improvements</i>

Acquisition, Prototype Phase and Test and Evaluation milestones have been changed to reflect the current revised schedule. The SFV LRIP was removed after determination that it was not required.

Project 0852: No changes to the schedule since PB11.

Project 1041: No changes to schedule.

Project 3189: A FY10 BTR from PU 3190 to PU 3189 occurred since PB11 to complete testing requirements for the Digital ITER program.

Project 3190: The MPBR contract was awarded in March 2010. Subsequently, the unsuccessful vendor lodged a protest which placed the contract in a stop work status. The contract was reaffirmed in September 2010. Due to the vendor protest, the following schedule changes have been made since PB11:

- 1) MPBR SFR changed from 4Q FY2010 to 2Q FY2011.
- 2) MPBR PDR changed from 4Q FY2010 to 4Q FY2011.
- 3) MPBR CDR changed from 2Q FY2011 to 3Q FY2012.
- 4) MPBR PCA changed from 2Q FY2013 to 2Q FY2014.
- 5) MPBR DT changed from 3Q FY2012 to 1Q FY2014.
- 6) MPBR OT changed from 3Q FY2013 to 2Q FY2014.
- 7) MPBR TRR was removed from schedule.
- 8) MPBR OA changed from 1Q FY2014 to 2Q FY2015.
- 9) MPBR OA Report changed from 1Q 2014 to 3Q 2015.
- 10) MPBR Vendor Testing changed from 3Q FY2011 through 2Q FY2012 to 4Q FY2011 through 4Q FY2013.
- 11) MPBR PRR changed from 1Q FY2014 to 2Q FY2015.
- 12) MPBR OARR added to 2Q FY2015.
- 13) MPBR OTRR changed from 4Q FY2013 to beyond FY2016.
- 14) MPBR LRIP 1 quantities changes from 75 units to 77 units.

Technical:
Not Applicable

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0601: <i>Acft Handling & Service Equip</i>	4.496	1.849	6.522	-	6.522	7.786	8.600	7.311	3.266	Continuing	Continuing
Quantity of RDT&E Articles	3	2	2	0	2	0	0	0	0		

A. Mission Description and Budget Item Justification

Common Ground Equipment (CGE) is a Naval Aviation project to apply new technology to common support equipment necessary to support multiple systems/aircraft within the Navy. The common support equipment items developed with this budget are briefed to the Air Force, Army and Coast Guard for possible use in joint procurement in the production phase.

New Programs are Hydraulic Test Stand (HTS) in FY11 and Aircraft Spotting Dolly (ASD) in FY12. The HTS is an R&D program to develop next generation HTS for testing Aircraft Hydraulic system components at the intermediate level of maintenance, both ship and shore based. ASD is an R&D program to develop next generation ASD. New ASD requires low profile and alternative power to allow safe spotting of all aircraft aboard carrier/amphibious class ships.

The Expeditionary Airfields (EAF) program is a FY2012 New Start, formerly under PE 0603512N PU 2269. It will design, develop, test and field components of a heat resistant light weight airfield surfacing system and a heat resistant lighting system that will support the deployment of the Joint Strike Fighter in austere environments worldwide. These systems will provide EAF Marine Wing Support Squadrons with the required EAF equipments to install Forward Operating Bases (FOB) and Forward Arming and Refueling Points (FARP). With the deployment of this equipment, the Marine Wing Support Squadron (MWSS) can support all USMC aircraft allowing the Combatant Commanders the flexibility to deploy Aircraft Combat Elements (ACE) to meet anticipated threats.

PEMA funding supports the evaluation, testing and integration to develop Portable Electronic Maintenance Aids (PEMA) COTS solution for portable device deployments across the Naval Aviation Enterprise (NAE). PEMA is a portable device utilized by maintainers with the implementation of digital maintenance capabilities (digital publications, Interactive Electronic Technical Manuals, Internet Protocol (IP) based data uploads, Binary digiT (BIT) data downloads, automated diagnostics, and planeside NALCOMIS). PEMAs are a mandatory display device supporting modern day Automated Maintenance Environment implemented for weapon systems.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Next Generation Munitions Handler (NGMH)	0.790	-	-	-	-
Articles:	1				
Description: R&D program to develop robotic weapons loader for both ship and shore with primary focus on targeting future weapons and aircraft. Plan is to support CVNX initiatives and to back-fit current CVs and amphibious ships. Utilize technology features developed under NGMH program. One lab prototype will upload/					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
download munitions in support of sea-based aviation, specifically the CVN-21 environment. It will be a self-powered diesel/electric unit with human amplification technology. Newly developed high-torque electric actuator/motors will provide the robotics. Variable geometry Ionator wheels will provide the mobility for the vehicle. Self diagnostics for maintenance analysis will be included for the design.					
<p><i>FY 2010 Accomplishments:</i> Contractor and government prototype testing began in FY10. Contract for production units will be initiated in FY11.</p>					
<p><i>Title:</i> Turboprop Engine Test Instrumentation (TETI)</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> The TETI program objective is to provide an integrated computer based measurement and automation system for Intermediate Maintenance level testing of Navy/Marine Turboprop engines. The acquisition approach is to develop, acquire, validate, deploy and support production configurations of TETI and Test Program Sets, utilizing the existing Shaft Engine Test Initiative technology, and integrate this capability into existing land based engine test systems. This enhanced capability will allow for full performance engine testing of the T56 Series Turboprop engines. An Engineering Change Proposal (ECP) will be developed to upgrade the existing engine test systems.</p> <p><i>FY 2010 Accomplishments:</i> ECP completed. Contractor and government prototype testing will began in FY10. Contract for production units will be initiated in FY11.</p>	1.307 1	-	-	-	-
<p><i>Title:</i> Shipboard Firefighting Vehicle (SFV)</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> The SFV program objective is to provide a safe reliable and maintainable way to support air capable ships with flight deck fire suppression during flight operations. The acquisition approach is to develop, acquire, validate, deploy and support production utilizing the lessons learned from the current firefighting vehicle and new emerging technology. This will enable integration of this capability into a new firefighting vehicle, which will be fully capable to support the current and future flight deck fire suppression missions.</p> <p><i>FY 2010 Accomplishments:</i></p>	2.399 1	0.910 1	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>		PROJECT 0601: <i>Acft Handling & Service Equip</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
<p>Prototype phase 50% completed in FY10.</p> <p>FY 2011 Plans: ECP will be completed by 4th quarter of FY11. Contractor and government prototype testing will be completed by the end of FY11. Contract for ECP kits will be initiated in 4th quarter of FY11.</p>					
<p>Title: Aircraft Spotting Dolly (ASD)</p> <p align="right">Articles:</p> <p>Description: There are no commercially available towing vehicles that could even be modified to replace the capabilities of the present SD-2. An R & D effort will be required to design its replacement. Advances in batteries and alternating current motor drive systems in the past decade have made it feasible to design an electrically powered vehicle for the CV, CVN, and L-Class hanger deck spotting missions. Such a vehicle will be inherently more reliable, reduce maintenance, and eliminate the fumes and noise generated by a diesel engine. An electrically driven vehicle will provide much greater motion control for slow speeds to aid in the engagement to the aircraft nose gear. Proximity sensors will be incorporated to automatically stop the spotting dolly prior to accidental impact with the aircraft, other support equipment or bulkheads, increasing the safety of the spotting operations. The legacy ASD is close to thirty years old and experiencing parts obsolescence issues and general efficiency degradation.</p> <p>FY 2012 Base Plans: Initiate prototype development of ASD.</p>					
	-	-	0.957 1	-	0.957 1
<p>Title: Hydraulic Test Stand (HTS)</p> <p align="right">Articles:</p> <p>Description: The HTS Program is to provide a single test stand to replace all of the existing hydraulic test units; HCTS, HCT-10, and Pump & Motor test stand. This will simplify supply support, reduce the stock system footprint, reduce training requirements, introduce new technology, consolidate space requirements in the hydraulic shops and eliminate the part obsolescence issues that are now beginning to emerge and grow. The requirements that cannot be met by commercial off the shelf (COTS) items are Shock, Vibration, Electromagnetic Interference, Military Van compatible, and hardened electrical components. These areas will all require R & D.</p> <p>FY 2011 Plans:</p>					
	-	0.939 1	0.388 1	-	0.388 1

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Initiate prototype development and contractor/government testing of HTS.						
FY 2012 Base Plans: Continue contractor/government testing of HTS.						
Title: Portable Electronic Maintenance Aid (PEMA)		-	-	0.472 0	-	0.472 0
Articles:						
FY 2012 Base Plans: Evaluate, test and integrate evolving COTS solutions. Conduct test & evaluation of T/M/S peculiar software/hardware requirements and network connectivity compliance across the GIG prior to deployment to the fleet by a yearly release cycle.						
Title: Expeditionary Airfields (EAF) Matting		-	-	4.705 0	-	4.705 0
Articles:						
Description: This program is a FY2012 New Start. The Expeditionary Airfields (EAF) program will design, develop, test and field components of a heat resistant light weight airfield surfacing system and a heat resistant lighting system that will support the deployment of the Joint Strike Fighter in austere environments worldwide. These systems will provide EAF Marine Wing Support Squadrons with the required EAF equipments to install Forward Operating Bases (FOB) and Forward Arming and Refueling Points (FARP). With the deployment of this equipment, the Marine Wing Support Squadron (MWSS) can support all USMC aircraft allowing the Combatant Commanders the flexibility to deploy Aircraft Combat Elements (ACE) to meet anticipated threats.						
FY 2012 Base Plans: Develop system requirements and Acquisition/Contract documentation to support the procurement and life cycle support of heat resistant/lightweight matting and heat resistant lighting. System Design and Development Contract will be awarded.						
Accomplishments/Planned Programs Subtotals		4.496	1.849	6.522	-	6.522

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• APN/0705: <i>Ground Support Equipment</i>	143.308	142.148	121.673	10.800	132.473	134.454	136.078	144.063	138.870	0.000	971.394
• OPN/4208: <i>Expeditionary Airfields</i>	45.662	8.429	8.561	47.000	55.561	8.728	8.877	9.030	9.183	0.000	145.470
• OPN/4264: <i>Portable Electronic Maintenance Aids</i>	4.895	12.812	7.875	0.000	7.875	8.075	5.676	4.392	4.472	0.000	48.197

D. Acquisition Strategy

CGE: This is a non ACAT program. Field activities propose tentative projects. Internal panel merits and selects projects. Field activities develop projects and submit results. Operational Advisory Group process selects projects to transition to procurement.

EAF: The program will use Full and Open competition contract for the system design and development of the EAF matting and lighting.

PEMA: The management approach includes the Program Management Office residing in the NAVAIR with MDA delegated to the NAVAIR CIO. The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded IDIQ contracts.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev-SFV	SS/CPFF	ENTWISTLE:HUDSON, MA	2.018	0.512	Mar 2011	-		-		-	0.000	2.530	2.530
Primary Hardware Dev-HTS	C/CPFF	TBD:TBD	-	0.586	Mar 2011	-		-		-	0.000	0.586	0.586
Systems Engineering-SFV	WR	NAWCAD:LAKEHURST, NJ	0.726	0.398	Nov 2010	-		-		-	0.000	1.124	
Systems Engineering-HTS	WR	NAWCAD:LAKEHURST, NJ	-	0.353	Nov 2010	0.299	Nov 2011	-		0.299	Continuing	Continuing	Continuing
Primary Hardware Dev--ASD	C/FFP	TBD:TBD	-	-		0.516	Mar 2012	-		0.516	0.000	0.516	0.516
Systems Engineering-ASD	WR	NAWCAD:LAKEHURST, NJ	-	-		0.441	Nov 2011	-		0.441	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	13.763	-		-		-		-	0.000	13.763	
Primary Hardware Dev-EAF	C/FFP	TBD:TBD	-	-		1.505	Apr 2012	-		1.505	7.925	9.430	9.430
Systems Engineering-EAF	WR	NAWCAD:LAKEHURST, NJ	-	-		1.960	Oct 2011	-		1.960	6.360	8.320	
Subtotal			16.507	1.849		4.721		-		4.721			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support	Various	Various:Various	8.857	-		-		-		-	0.000	8.857	8.857
Integrated Logistics Support-EAF	WR	NAWCAD:LAKEHURST, NJ	-	-		0.700	Dec 2011	-		0.700	1.300	2.000	
Eng & Tech Support-EAF	WR	NAWCAD:LAKEHURST, NJ	-	-		0.540	Oct 2011	-		0.540	4.840	5.380	
Subtotal			8.857	-		1.240		-		1.240	6.140	16.237	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0205633N: *Aviation Improvements*

PROJECT
 0601: *Acft Handling & Service Equip*

NEXT GENERATION MUNITIONS HANDLER (NGMH)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones																																
Milestones					MS C ▲								FRP Decision ◆																			
Systems Development																																
Test & Evaluation																																
Production Milestones																																
Milestones					LRIP 1 ●								LRIP 3 ●				FRP Start ▼															
Deliveries																																

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>
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TURBOPROP ENGINE TEST INSTRUMENTATION (TETI)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones							FRP DECISION ◆																					
Systems Development																												
Hardware Development	ECP DEV																											
	ECP COMPLETE ▼																											
Test & Evaluation																												
	GOVT RUN TEST																											
Production Milestones																												
Deliveries							FRP START ◆																					

2012PB - 0205633N - 0601

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>
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SHIPBOARD FIREFIGHTING VEHICLE (SFV)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones								FRP DECISION ◆																				
Systems Development								ECP COMPLETE ▼																				
Hardware Development	ECP DEVELOPMENT PROTOTYPE PHASE																											
Test & Evaluation								C & G Test																				
Production Milestones																												
Full Rate Production Deliveries																												

2012PB - 0205633N - 0601

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>
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AIRCRAFT SPOTTING DOLLY (ASD)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		
Acquisition Milestones																														
Milestones								MS B ▲																			MS C ▲			
Systems Development																														
Hardware Development								PROTOTYPE PHASE																						
Test & Evaluation																														
C & G Test																														
Production Milestones																														
Deliveries																														

2012PB - 0205633N - 0601

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0205633N: *Aviation Improvements*

PROJECT

0601: *Acft Handling & Service Equip*

HYDRAULIC TEST STAND (HTS)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones																																
Milestones					MS B ▲												MS C ▲															
Systems Development																																
Hardware Development					PROTOTYPE PHASE																											
Test & Evaluation																																
C & G Test									C & G Test																							
Production Milestones																																
Deliveries																					LRIP 1 APN ◆				FRP START ◆							

2012PB - 0205633N - 0601

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0205633N: *Aviation Improvements*

PROJECT
 0601: *Acft Handling & Service Equip*

PORTABLE ELECTRONIC MAINTENANCE AIDS (PEMA)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Systems Development																												
Contract Award								3				4				5				6				7				
Requirements								Study 3				Study 4				Study 5				Study 6				Study 7				
Engineering Change Proposal By T/M/S									ECP 3				ECP 4				ECP 5				ECP 6				ECP 7			
Image Development By T/M/S									Image Devel 3				Image Devel 4				Image Devel 5				Image Devel 6				Image Devel 7			
Test & Evaluation																												
Functional Regression Testing											F/R Test 3				F/R Test 4					F/R Test 5				F/R Test 6				F/R Test 7
Independent Validation & Verification Testing											V/V Test 3				V/V Test 4					V/V Test 5				V/V Test 6				V/V Test 7
Production Milestones																												
Deliveries																												
Production Deliveries											Rel 3				Rel 4					Rel 5				Rel 6				Rel 7

2012PB - 0205633N - 0601

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>
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EXPEDITIONARY AIRFIELDS (EAF) MATTING	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Systems Development																												
System Design & Development	EAF-SYSTEM DESIGN & DEVELOPMENT																											
Reviews																												
Test & Evaluation																												
Formal Testing	FORMAL TESTING																											
Production Milestones																												
Contract Awards																												
Deliveries																												

2012PB - 0205633N - 0601

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>NEXT GENERATION MUNITIONS HANDLER (NGMH)</i>				
Acquisition Milestones: Milestones: NGMH-MILESTONE C (MS C)	1	2011	1	2011
Acquisition Milestones: Milestones: NGMH-FULL RATE PRODUCTION (FRP) DECISION	3	2012	3	2012
Systems Development: NGMH-SHIPBOARD PROTOTYPE PHASE	1	2010	3	2010
Test & Evaluation: NGMH-CONTRACTOR AND GOVT RUN TESTING	1	2010	4	2010
Production Milestones: Milestones: NGMH-START LOW RATE INITIAL PRODUCTION (LRIP) 1 - OPN	1	2011	1	2011
Production Milestones: Milestones: NGMH-LOW RATE INITIAL PRODUCTION (LRIP) 3 DELIVERY - OPN	1	2012	1	2012
Production Milestones: Milestones: NGMH-FULL RATE PRODUCTION (FRP) START	3	2012	3	2012
<i>TURBOPROP ENGINE TEST INSTRUMENTATION (TETI)</i>				
Acquisition Milestones: Milestones: TETI-FULL RATE PRODUCTION (FRP) DECISION	3	2011	3	2011
Systems Development: Hardware Development: TETI-ECP DEV (TPS & ASSOCIATED HARDWARE)	1	2010	1	2010
Systems Development: Hardware Development: TETI-ECP COMPLETE	1	2010	1	2010
Test & Evaluation: TETI-GOVT RUN TESTING	1	2010	4	2010
Production Milestones: TETI-FULL RATE PRODUCTION (FRP) START	3	2011	3	2011
<i>SHIPBOARD FIREFIGHTING VEHICLE (SFV)</i>				
Acquisition Milestones: SFV-FULL RATE PRODUCTION (FRP) DECISION	4	2011	4	2011
Systems Development: Hardware Development: SFV-ECP DEVELOPMENT PROTOTYPE PHASE	1	2010	2	2011
Systems Development: Hardware Development: SFV-ECP COMPLETE	4	2011	4	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluation: SFV-CONTRACTOR AND GOVT RUN TESTING	1	2011	4	2011
AIRCRAFT SPOTTING DOLLY (ASD)				
Acquisition Milestones: Milestones: ASD-MILESTONE B	1	2012	1	2012
Acquisition Milestones: Milestones: ASD-MILESTONE C	4	2015	4	2015
Systems Development: Hardware Development: ASD-PROTOTYPE PHASE	1	2012	4	2014
Test & Evaluation: ASD-CONTRACTOR AND GOVT RUN TESTING	1	2013	3	2015
HYDRAULIC TEST STAND (HTS)				
Acquisition Milestones: Milestones: HTS-MILESTONE B	1	2011	1	2011
Acquisition Milestones: Milestones: HTS-MILESTONE C	4	2013	4	2013
Systems Development: Hardware Development: HTS-PROTOTYPE PHASE	1	2011	2	2013
Test & Evaluation: HTS-CONTRACTOR AND GOVT RUN TESTING	4	2011	4	2013
Production Milestones: HTS-START LOW RATE INITIAL PRODUCTION (LRIP) 1 - APN	2	2014	2	2014
Production Milestones: HTS-FULL RATE PRODUCTION (FRP) START	1	2015	1	2015
PORTABLE ELECTRONIC MAINTENANCE AIDS (PEMA)				
Systems Development: Contract Award: Contract Award 3	1	2012	1	2012
Systems Development: Contract Award: Contract Award 4	1	2013	1	2013
Systems Development: Contract Award: Contract Award 5	1	2014	1	2014
Systems Development: Contract Award: Contract Award 6	1	2015	1	2015
Systems Development: Contract Award: Contract Award 7	1	2016	1	2016
Systems Development: Requirements: Requirements Study Complete 3	2	2012	2	2012
Systems Development: Requirements: Requirements Study Complete 4	2	2013	2	2013
Systems Development: Requirements: Requirements Study Complete 5	2	2014	2	2014
Systems Development: Requirements: Requirements Study Complete 6	2	2015	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Systems Development: Requirements: Requirements Study Complete 7	2	2016	2	2016
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 3	3	2012	3	2012
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 4	3	2013	3	2013
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 5	3	2014	3	2014
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 6	3	2015	3	2015
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 7	3	2016	3	2016
Systems Development: Image Development By T/M/S: Image Development By T/M/S 3	3	2012	3	2012
Systems Development: Image Development By T/M/S: Image Development By T/M/S 4	3	2013	3	2013
Systems Development: Image Development By T/M/S: Image Development By T/M/S 5	3	2014	3	2014
Systems Development: Image Development By T/M/S: Image Development By T/M/S 6	3	2015	3	2015
Systems Development: Image Development By T/M/S: Image Development By T/M/S 7	3	2016	3	2016
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 3	4	2012	4	2012
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 4	4	2013	4	2013
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 5	4	2014	4	2014
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 6	4	2015	4	2015
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 7	4	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0601: <i>Acft Handling & Service Equip</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 3	4	2012	4	2012
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 4	4	2013	4	2013
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 5	4	2014	4	2014
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 6	4	2015	4	2015
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 7	4	2016	4	2016
Deliveries: Production Deliveries: Production Delivery, Release 3	4	2012	4	2012
Deliveries: Production Deliveries: Production Delivery, Release 4	4	2013	4	2013
Deliveries: Production Deliveries: Production Delivery, Release 5	4	2014	4	2014
Deliveries: Production Deliveries: Production Delivery, Release 6	4	2015	4	2015
Deliveries: Production Deliveries: Production Delivery, Release 7	4	2016	4	2016
EXPEDITIONARY AIRFIELDS (EAF) MATTING				
Systems Development: System Design & Development: EAF-SYSTEM DESIGN & DEVELOPMENT (SDD)	1	2012	1	2015
Systems Development: Reviews: EAF-PROGRAM DESIGN REVIEW	1	2013	1	2013
Systems Development: Reviews: EAF-CRITICAL DESIGN REVIEW	4	2013	4	2013
Test & Evaluation: Formal Testing: EAF-FORMAL TESTING	1	2014	4	2015
Production Milestones: Contract Awards: EAF-CONTRACT AWARD	3	2012	3	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0852: <i>Consolidated Auto Support System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0852: <i>Consolidated Auto Support System</i>	20.119	31.926	28.501	-	28.501	8.403	6.633	6.777	6.898	Continuing	Continuing
Quantity of RDT&E Articles	2	7	7	0	7	0	0	0	0		

A. Mission Description and Budget Item Justification

The eCASS (electronic Consolidated Automated Support System) project is the system design and development of the latest generation of the US Navy's CASS family of automatic test systems. The legacy CASS system was designed and developed in the 1980's and commenced fielding in 1992. As such, it is reaching the end of its useful life due to obsolescence issues. eCASS is the replacement system for legacy CASS systems, which provides Naval aircraft avionics component maintenance and repair support at Intermediate and Depot maintenance facilities both shore-based and afloat. As a CASS replacement program, the eCASS program objectives remain the same as that of CASS. Specifically: (1) increase material readiness; (2) reduce life cycle costs; (3) improve tester sustainability at depot and intermediate maintenance levels; (4) reduce proliferation of unique test equipment, and (5) provide test capability for existing and emerging avionics/electronics aircraft weapon systems.

The Test Technology Development project involves analysis, application, maturation, integration and testing of emerging electronic, mechanical and optical test technologies for potential military utility in support of Naval avionics testing and repair. Specific technologies being developed include synthetic instruments, new Advanced Targeting Forward Looking Infrared (ATFLIR) electro-optics capabilities, multi-analog test capability to enable functional testing, and modernization elements for the CASS family of automatic test systems.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: eCASS Development	19.406	31.107	27.676	-	27.676
Articles:	1	6	6		6
Description: Develop, integrate and test an Automatic Test System (ATS) to replace legacy CASS systems. The new ATS will be compatible with and capable of hosting the hundreds of existing Test Programs that are currently utilized on legacy CASS at the Intermediate and Depot levels of maintenance, as well as any emerging Test Programs that may require greater test capability than provided by legacy CASS.					
FY 2010 Accomplishments: Awarded contract to develop, integrate and test an ATS to replace legacy CASS systems. Completed CASS Characterization, performed Management Systems Assessment, performed Schedule Risk Assessment, established Earned Value Management baseline, and performed System Requirements Review.					
FY 2011 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0852: <i>Consolidated Auto Support System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Perform eCASS system Preliminary Design Review (PDR) and perform Advance Development Model integration.					
<i>FY 2012 Base Plans:</i> Perform eCASS system Critical Design Review, procure initial Engineering Development Models, initiate Test Program Set integration, conduct Test Readiness Reviews, and commence Developmental Test (DT)-B1 and DT-B2 test events.					
<i>Title:</i> Test Technology Development	0.713	0.819	0.825	-	0.825
<i>Articles:</i>	1	1	1		1
<i>Description:</i> Develops, integrates, and evolves enhanced test capabilities and technologies for insertion into the CASS family of test systems. As weapon system electronics evolve, new test capabilities are required to support advanced systems. Existing test capabilities must be extended in range, accuracy, time and frequency domains in order to sustain the required test accuracy ratios for weapon systems support (the automatic test system must be four times as accurate as the asset being tested).					
<i>FY 2010 Accomplishments:</i> Initiated the development, integration, and evolution of enhanced test capabilities and technologies for insertion into the CASS family of test systems.					
<i>FY 2011 Plans:</i> Continue to develop, integrate, and evolve enhanced test capabilities and technologies for insertion into the CASS family of test systems.					
<i>FY 2012 Base Plans:</i> Continue to develop, integrate, and evolve enhanced test capabilities and technologies for insertion into the CASS family of test systems.					
Accomplishments/Planned Programs Subtotals	20.119	31.926	28.501	-	28.501

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0852: <i>Consolidated Auto Support System</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• APN/0705: <i>Common Ground Equip APN-7</i>	59.491	52.909	75.614	0.000	75.614	96.364	97.642	99.460	100.587	0.000	582.067

D. Acquisition Strategy

Formal test technology reviews with industry are conducted annually (cooperative Joint Services initiative) to define maturity of needed technologies. Further studies are conducted as needed. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0852: <i>Consolidated Auto Support System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Dev eCASS	C/CPHF	LOCKHEED MARTIN:ORLANDO, FL	16.088	24.600	Dec 2010	23.426	Dec 2011	-		23.426	Continuing	Continuing	Continuing
Primary Hdw Dev Test Technology	C/CPFF	Various:Various	0.413	0.469	Mar 2011	0.450	Dec 2011	-		0.450	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	28.397	-		-		-		-	0.000	28.397	
Subtotal			44.898	25.069		23.876		-		23.876			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
eCASS Support	WR	Various:Various	0.700	4.278	Jan 2011	2.000	Jan 2012	-		2.000	Continuing	Continuing	Continuing
eCASS Support	WR	NAWC AD:Lakehurst, NJ	2.400	2.000	Jan 2011	2.000	Jan 2012	-		2.000	Continuing	Continuing	Continuing
Test Technology Support	WR	Various:Various	0.200	0.250	Jan 2011	0.275	Jan 2012	-		0.275	Continuing	Continuing	Continuing
Prior Year Support	Various	Various:Various	12.403	-		-		-		-	0.000	12.403	
Subtotal			15.703	6.528		4.275		-		4.275			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
eCASS Travel	WR	Various:Various	0.218	0.229	May 2011	0.250	May 2012	-		0.250	Continuing	Continuing	Continuing
Test Tech Travel	WR	Various:Various	0.100	0.100	May 2011	0.100	May 2012	-		0.100	Continuing	Continuing	Continuing
Prior Year Mgmt	Various	Various:Various	1.669	-		-		-		-	0.000	1.669	
Subtotal			1.987	0.329		0.350		-		0.350			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0852: <i>Consolidated Auto Support System</i>
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electronic Consolidated Automated Support System (eCASS)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
Acquisition Milestones																													
Milestones		MS-B ▲																											
Systems Development																													
Hardware and Software Development		Dev Contract Award ▲																											
		System Development																											
Test & Evaluation																													
Development Testing																													
Production Milestones																													
Deliveries																													

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 0852: <i>Consolidated Auto Support System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>electronic Consolidated Automated Support System (eCASS)</i>				
Acquisition Milestones: Milestones: eCASS Milestone B	2	2010	2	2010
Systems Development: Hardware and Software Development: eCASS Development Contract Award	2	2010	2	2010
Systems Development: Hardware and Software Development: eCASS System Development	2	2010	2	2015
Test & Evaluation: Development Testing: eCASS DT-B1 & B2 Testing	3	2012	4	2012
Test & Evaluation: Development Testing: eCASS DT-C1 Testing	3	2013	4	2013
Test & Evaluation: Development Testing: eCASS DT-C2 Testing	3	2014	4	2014
Production Milestones: eCASS LRIP 1	2	2013	2	2013
Production Milestones: eCASS LRIP 2	2	2014	2	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1041: <i>Acft Equip Repl/Maint Prog</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1041: <i>Acft Equip Repl/Maint Prog</i>	4.040	4.230	3.020	-	3.020	3.292	3.367	3.444	3.496	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP) is the only Navy program which provides Research, Development, Test & Evaluation engineering support specifically for in-service, out-of-production aircraft equipment. AERMIP increases readiness through Reliability and Maintainability (R&M) and safety improvements to existing systems and equipment installed in Naval aircraft. It also provides a transition vehicle to deploy Total Ownership Cost reduction initiatives through flight-test support and Fleet Test & Evaluation. It meets affordable readiness objectives by providing a cost-effective solution to obsolescence problems encountered when service lives are extended. AERMIP promotes commonality and standardization across aircraft platform lines and among the services through extension of application and use of non-developmental items. AERMIP also decreases life cycle costs through reduced operational and support costs. AERMIP facilitates the Operational, Safety and Improvement Program by applying proven low-risk solutions to current fleet problems. AERMIP also funds high-priority flight testing which is not associated with any acquisition or development program under the Flight Test General task. AERMIP will demonstrate the feasibility of using cavitation peening for survivability improvement of ceramic armor and validate innovative coating techniques to enhance erosion resistance of engine blades and rotor blades in support of overseas operations.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Avionics and Wiring	1.075	0.997	0.860	-	0.860
Articles:	0	0	0		0
FY 2010 Accomplishments: Transitioned Arc Fault Circuit breaker technology to the field through development of specifications with the appropriate Society of Automotive Engineers committee, assisting with qualification of the technology and placing Arc Fault technology on the Qualified Products List. Generated operating data from physics-based models for generator diagnostics and health management. Silicon-Controlled Rectifier tester circuit design and simulations for power, sensing and data acquisition circuits completed. Continued refinement of algorithm software and hardware for battery testing and prognostics including testing at contractor and government sites. Performed ground testing on front-line aircraft.					
FY 2011 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1041: <i>Acft Equip Repl/Maint Prog</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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<p>Qualify materials or pieces of equipment and the procedures/process required for their implementation. Pursue next-generation wiring, battery, and generator diagnosis and prognostics methods, and prove the applicability to Naval aviation. Address avionics-related reliability issues impacting multiple aircraft platforms.</p>					
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<p>FY 2012 Base Plans: Qualify additional materials or pieces of equipment and the procedures/process required for their implementation. Test and evaluate off-board diagnostic equipment for generator diagnostics/prognostics. Refine algorithms for multiple battery models, including lithium chemistries. Continue testing in aircraft simulated environment. Pursue next-generation wiring, battery, and generator diagnosis and prognostics methods, and prove the applicability to Naval aviation. Address avionics-related reliability issues impacting multiple aircraft platforms.</p>					
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<p>Title: Air Vehicle</p>	1.748	1.582	1.350	-	1.350
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	Articles: 0	0	0		0
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<p>FY 2010 Accomplishments: Completed preliminary testing of low-temperature paints and primers. Fabricated calibrated notches on titanium tubing, made replicas of the notches and evaluated measurement technologies. Selected the best technology and initiated procurement of test item. Prepared screening matrix and panels for testing of non chromate adhesive bond primers. Completed phase 1 of evaluation of primers and analysis of failure modes. Demonstrated sand erosion capability using accelerated sand to test erosion characteristics of critical flight components. Completed evaluation of high nitrogen stainless steel for use in environments requiring high strength and resistance to corrosion. Evaluate new methods of corrosion prevention control, including human factors approach.</p>					
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<p>FY 2011 Plans: Qualify materials or pieces of equipment and the procedures/process required for their implementation. Develop new methods of structural repair. Evaluate new methods of corrosion prevention control. Evaluate non-solvent plasma method to remove hydraulic contamination. Pursue subsystem improvements by increasing component reliability. Finalize titanium tubing crack detection methodology and tooling. Qualify and implement advanced non-chrome primers with corrosion protection properties.</p>					
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<p>FY 2012 Base Plans: Qualify additional materials or pieces of equipment and the procedures/process required for their implementation. Develop new methods of structural repair with focus on lightweight, high-cost, and low</p>					
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>		PROJECT 1041: <i>Acft Equip Repl/Maint Prog</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
observability platforms. Expand focus of human factors and advanced materials/coatings in corrosion prevention control. Expand use of protective coatings on aircraft components to resist abrasion, wear, and corrosion, while lowering maintenance hours and cost.					
Title: Systems Engineering Revitalization					
Articles:					
FY 2010 Accomplishments: Incorporated systems engineering process approach to identify reliability and maintainability assessments during the system development phase of the program, successfully demonstrate R&M levels during test and evaluation, and sustain R&M levels throughout the system's life-cycle. Refined effort on correlations of applied leading indicators and validation of the findings. Expanded into an aligned four-phase system engineering process and developed improvements to the Systems Engineering Technical Review (SETR) process. Developed an effective communications strategy to maximize program execution. Developed a web-based tool for the SETR checklists and updated two of the fourteen SETR event checklists.					
FY 2011 Plans: Continue validation of leading indicators for effectiveness. Continue development of improved four-phase system and SETR process. Using communications strategy developed in previous year and web-based tool, deliver usable validated products to engineering and program teams.					
FY 2012 Base Plans: Complete initial version of the SETR web-based checklist tool. Identify web-tool critical limitations and implement changes and improvements within the tool. Investigate systems engineering processes and tools across Naval Air Systems Command domains inclusive of end item performance derivation from operational requirements and the associated concept of operations, with the derivation remaining relevant to the mission and system architectures.					
Title: NAE Corrosion					
Articles:					
FY 2010 Accomplishments: Flight Line Canopy Shelters technical report was drafted. Documenting reduction in corrosivity effects, increased maintenance capability in mildly inclement weather, and improved maintainer quality of life for ongoing EA-6B and F/A-18 studies. Preliminary field evaluations of tape and adhesive remover completed at North Island, California, on F/A-18 radomes and leading edge tapes. Draft NAVAIR technical authorization package was					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1041: <i>Acft Equip Repl/Maint Prog</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>initiated, including process caveats and restrictions. National Stock Numbers were issued through Defense Logistics Agency for Tape and Adhesive Residue Remover material kits in 1 gallon/1 pint sizes. Controlled Solidification Investment Cast (CSIC) aluminum gearbox trade study assessment was completed and reported for the H-60 Main Gearbox. Improvements in corrosion resistance, stiffness, and component flight-hour lifetimes are expected. Identified and formulated developmental conductive fillers and resin systems. Currently producing laboratory scale materials for full corrosion, electromagnetic interference, and conductivity characterizations.</p> <p><i>FY 2011 Plans:</i> Continue to design, test, and implement CSIC aluminum gearboxes as alternatives to magnesium alloy gearboxes. Demonstrate and validate conducting paint and sealants with less noble galvanic potential and which provide acceptable electrical performance with much lower propensity to cause corrosion of airframe and components. Investigate products such as advanced performance topcoats designed to decrease cost of re-painting aircraft by extending service life of paint.</p>					
Accomplishments/Planned Programs Subtotals	4.040	4.230	3.020	-	3.020

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

This is a non-ACAT program. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

The AERMIP program will, at a minimum, fund 8 to 15 projects a year that investigate and evaluate R&M improvements to in-service, out-of-production aircraft equipment. AERMIP projects will have a greater than 75% success rate of insertion into Department of the Navy warfighting systems or support infrastructure.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1041: <i>Acft Equip Repl/Maint Prog</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng - Avionics/Wiring	WR	NAWCAD:Patuxent River, MD	3.793	0.805	Nov 2010	0.512	Nov 2011	-		0.512	Continuing	Continuing	Continuing
Sys Eng - Avionics/Wiring	C/FFP	Various:Various	0.314	0.192	Mar 2011	-		-		-	Continuing	Continuing	Continuing
Sys Eng - Avionics/Wiring	C/FFP	GEM Power:Redlands, CA	-	-		0.108	Mar 2012	-		0.108	0.000	0.108	
Sys Eng - Avionics/Wiring	C/FFP	PCKA:West Lafayette, IN	-	-		0.146	Mar 2012	-		0.146	0.000	0.146	
Sys Eng - Air Vehicle	WR	NAWCAD:Patuxent River, MD	5.158	0.971	Nov 2010	0.795	Nov 2011	-		0.795	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC:San Diego, CA	0.458	0.050	Dec 2010	0.109	Dec 2011	-		0.109	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC:Cherry Point, NC	0.378	0.050	Dec 2010	0.108	Dec 2011	-		0.108	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC:Jacksonville, FL	0.410	0.050	Dec 2010	0.103	Dec 2011	-		0.103	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	C/FFP	Various:Various	0.615	0.100	Apr 2011	0.089	Mar 2012	-		0.089	0.717	1.521	1.529
Sys Eng - SE Revitalization	WR	NAWCAD:Patuxent River, MD	0.778	0.022	Dec 2010	0.008	Dec 2011	-		0.008	Continuing	Continuing	Continuing
Sys Eng - SE Revitalization	C/FFP	L-3 Communications:Marlton, NJ	1.142	0.917	Apr 2011	0.802	Mar 2012	-		0.802	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	NAWCAD:Patuxent River, MD	0.257	0.357	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	FRC:San Diego, CA	-	0.100	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	FRC:Cherry Point, NC	-	0.125	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	FRC:Jacksonville, FL	-	0.130	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	1.504	-		-		-		-	0.000	1.504	
Subtotal			14.807	3.869		2.780		-		2.780			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1041: <i>Acft Equip Repl/Maint Prog</i>
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	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acft Equip Repl/Maint Prog																												
Avionics & Wiring	High-Speed Bus Switching																											
	Aircraft Battery Diagnostic & Prognostic System																											
	Generator System Diagnostics & Health																											
	Investigate High Value Return on Investment																											
	Wiring Diagnostics and Prognostics																											
	Avionics Reliability Enhancements																											
Air Vehicle																												
	Improved Corrosion Preventative Compounds																											
	Corrosion Prevention and Control																											
	Advanced Methods of Structural Repair																											
	Subsystem Improvement Initiatives																											
	Sand & Erosion Resistance of APU Impeller																											
	Titanium Tubing for Hydraulic Systems																											
	Non-Solvent Plasma																											
	Investigate High Value Return on Investment																											
	Ambient Temperature Bonding																											
SE Revitalization																												
	Improved Technical Excellence of Acquisition Programs																											
NAE Corrosion Improvement																												
	Flight Line Canopy Shelters																											
	Tape and Adhesive Remover																											
	Aluminum Gearboxes																											
	Conducting Paints & Sealants																											
	Investigate High Value Return on Investment																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1041: <i>Acft Equip Repl/Maint Prog</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Acft Equip Repl/Maint Prog</i>				
Avionics & Wiring: High-Speed Bus Switching	1	2010	4	2011
Avionics & Wiring: Aircraft Battery Diagnostic & Prognostic System	1	2010	4	2012
Avionics & Wiring: Generator System Diagnostics & Health	1	2010	4	2012
Avionics & Wiring: Investigate High Value Return on Investment	1	2010	4	2016
Avionics & Wiring: Wiring Diagnostics and Prognostics	1	2010	4	2013
Avionics & Wiring: Avionics Reliability Enhancements	1	2010	1	2011
Air Vehicle: Improved Corrosion Preventative Compounds	1	2010	4	2015
Air Vehicle: Corrosion Prevention and Control	1	2010	4	2013
Air Vehicle: Advanced Methods of Structural Repair	1	2010	4	2013
Air Vehicle: Subsystem Improvement Initiatives	1	2010	4	2013
Air Vehicle: Sand & Erosion Resistance of APU Impeller	1	2010	4	2011
Air Vehicle: Non-Solvent Plasma	1	2011	4	2012
Air Vehicle: Titanium Tubing for Hydraulic Systems	1	2010	4	2011
Air Vehicle: Investigate High Value Return on Investment	1	2010	4	2016
Air Vehicle: Ambient Temperature Bonding	1	2011	4	2012
SE Revitalization: Improved Technical Excellence of Acquisition Programs	1	2010	4	2016
NAE Corrosion Improvement: Flight Line Canopy Shelters	1	2010	4	2011
NAE Corrosion Improvement: Tape & Adhesive Remover	1	2010	4	2011
NAE Corrosion Improvement: Aluminum Gearboxes	1	2010	4	2011
NAE Corrosion Improvement: Conducting Paints & Sealants	1	2010	4	2011
NAE Corrosion Improvement: Investigate High Value Return on Investment	1	2010	4	2011

UNCLASSIFIED

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>				PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1355: <i>Propulsion and Power Component Improvement Program</i>	63.769	75.583	62.379	-	62.379	83.611	82.310	86.775	90.451	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical design and development engineering support to resolve safety, reliability and maintainability deficiencies of in-service Navy aircraft propulsion systems. The highest priority issues CIP addresses concern safety-of-flight deficiencies which account for approximately 80% of CIP efforts. The program also corrects service-revealed deficiencies, improves Operational Readiness and Reliability and Maintainability, and reduces platform Life Cycle Cost. Budgets are allocated across platform-specific teams and multi-platform product support teams based upon long term strategies to achieve safety and affordable readiness goals; the R-3 exhibit details annual portions of those long-term plans. CIP tasks have reduced the rate of in-flight aborts, safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance work hours, and overall cost of ownership. This is accomplished through the maintenance and validation of specification performance, testing to qualify engineering changes, verifying life limits, and improving the inherent reliability of the propulsion system as an integral part of Reliability Centered Maintenance initiatives. Historically, the missions, tactics, and environmental exposure of military aircraft systems change to meet new threats or operational demands, and often result in unforeseen problems, which if not corrected, can cause critical safety/readiness degradation, such as those experienced during OPERATIONS DESERT SHIELD/DESERT STORM, ENDURING FREEDOM, and IRAQI FREEDOM due to sand erosion. In addition, new problems arise through actual fleet deployment and usage of the aircraft. System Development programs, while geared to resolve as many problems as possible before deployment, cannot duplicate actual operations or account for the vast array of environmental and usage variables, particularly when aircraft missions vary from those that the aircraft was designed to perform. Therefore, it has been found that CIP can provide an immediate engineering response to these flight-critical problems and accelerated engine testing can avoid potential problems. CIP starts after development and Navy acceptance of the first production article and addresses usage and life problems not covered by warranties. CIP addresses engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, aircraft wiring, and fuel and lubricant systems. CIP efforts continue over the system's life, gradually decreasing to a minimum level sufficient to maintain the reliability, and decrease the operating costs, of older inventory. CIP is a highly leveraged and cooperative tri-service program with Foreign Military Sales participation.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: P3, E2, C2, C130 (T56)	6.283	4.873	5.990	-	5.990
Articles:	0	0	0		0
FY 2010 Accomplishments: A 150 Reduction Gear Box (RGB) Rig test was completed to demonstrate the NP2000 to aircraft interface for a legacy application. Completed Analytical Condition Inspections on a 6300 hr RGB and a 2100 hr Power Section. Successfully performed an engine fit check for a prototype oil supply tube which will remove a current source					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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<p>for oil leaks. Tested an alternate method, Feature Based Life Assessment, of clearing lives on fatigue critical parts; this alternative much less expensive than spin testing. Initiated combustor liner durability improvement redesigns. Maintained life management analysis to ensure safe operation of high time parts. Evaluated new compressor blade coating -improves erosion/corrosion resistance and increases time on wing. Initiated C-2 engine reliability improvement study.</p> <p>FY 2011 Plans: Conduct analytical condition inspections of high time hardware in order to identify new reliability degraders. Qualify redesigned combustor liner. Maintain life management analysis to ensure safe operation of high time parts. Continue to investigate all service revealed deficiencies. Engineering change for new compressor blade coating. Redesigns for C-2 engine reliability improvements.</p> <p>FY 2012 Base Plans: Redesign the Aft Cone-Adaptor significant engine removal contributor. Begin design and fabrication of a replacement to the current electronic control system which will no longer be repairable due to obsolescence. Complete further testing on in-service hardware to extend the T1 blade re-use limit. Continue the Analytical Condition Inspections program. Qualify redesigned combustor liner. Continue to investigate all service revealed deficiencies. Redesigns for C-2 engine reliability improvements, Scavenge Oil System Improvements. Initiate Gearbox improvements. Improve turbine vane durability for improve engine reliability.</p>					
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Title: E2/C2/C130/P3 (Props)	3.827	1.451	1.450	-	1.450
Articles:	0	0	0		0

<p>FY 2010 Accomplishments: Conducted analytical condition inspections of life limited hub to provide extension of life limit to the fleet and to identify any new safety or reliability failure modes. Continued to investigate all service revealed deficiencies. Initiated engineering change for Electronic Propeller Control Software Upgrade, NP2000 Bolt Torque Change, Actuator Front Yoke Plate Redesign, NP2000 Heater Lead Redesign, NP2000 Resistant Valve Upgrade, and NP2000 Check Valve Upgrade. Completed Class II engineering change for pump housing corrosion coating, NP2000 Hub Dowel Pin Repair. Continued E-2 propeller active balance development. Initiated P-3/C-130 propeller taper bore corrosion testing - improve corrosion resistance. Initiated NP2000 Control System Working model for engineering investigations and improved fleet troubleshooting charts.</p> <p>FY 2011 Plans:</p>					
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>		PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
Complete NP2000 rear cone analysis and redesign. Test and qualify E-2 propeller active balance system. Continue NP2000 analytical condition inspection to identify new reliability degraders. Initiate redesign of NP2000 rear cone.					
FY 2012 Base Plans: Continue research and testing of potential NP2000 Blade Erosion Coatings. Complete P-3/C-130 propeller taper bore corrosion testing and implement design change as required. Continue build of NP2000 Control System Working Model. Continue to investigate all service revealed deficiencies.					
Title: EA-6B (J52)					
Articles:					
	2.616	2.639	1.620	-	1.620
	0	0	0		0
FY 2010 Accomplishments: 4.5 bearing Engineering Change Proposal approved allowing installations of the new bearing to begin in FY 2011. New torque values and tools for the 4.5 bearing inner race nut will be developed. New serviceable limits will be submitted for both turbine shafts as well as the compressor rear hub allowing the reduction of scrapped hardware. Incorporate a more flexible rear fuel flow meter bracket. Maintenance awareness will be presented at Operational & Intermediate levels.					
FY 2011 Plans: Start incorporation of the new 4.5 bearing, new 4.5 bearing inner race nut torque value and torque tooling. Continue FY2010 plan. Maintenance awareness will be presented at Operational & Intermediate levels. Develop a Thermal Barrier Coating for the combustion chamber interior surfaces. Develop a repair for the wear found in the inlet case vane driver boss replacement.					
FY 2012 Base Plans: Complete incorporation of the new 4.5 bearing, new 4.5 bearing inner race nut torque value and torque tooling. Maintenance awareness will be presented at Operational & Intermediate levels. Install a Thermal Barrier Coating for the combustion chamber interior surfaces. Implement a repair for the wear found in the inlet case vane driver boss replacement.					
Title: Mature Aircraft (J85)					
	0.789	-	-	-	-
	0				
FY 2010 Accomplishments:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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Approved the Main Fuel Control Engineering Change Proposal which is to address fuel leaks to save removals and address a top degrader. Implemented After Burner light off margin test and false P3 input to simulate altitude to check the health of the engine before flight. Implemented new Main Fuel Control Accel schedule calibration at Depot. After Burner no-lights have decreased.					
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<p>Title: SH-60B/F, HH-60H, MH-60R/S (T700)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Conducted tail gear box output bevel gear crack propagation testing and update fleet inspection requirements, if required. Closed out of T700 Hot Restart Investigation and begin incorporation of T700 Hot Restart stall mitigation through design changes. Identified cost and readiness degraders on the T700 and H-60 drive system.</p> <p>FY 2011 Plans: Complete T700 hot restart stall mitigation through design changes. Begin redesign work to reduce impact of cost and readiness drivers for the engine and drive system.</p> <p>FY 2012 Base Plans: Continue redesign work to reduce impact of cost and readiness drivers for the T700 engine. Continue a Fleet Leader of the Automatic Wire Analyzer at Naval Air Station North Island to train operators, develop procedures, and measure effectiveness. Continue the redesign of the Main Transmission Gearbox from Magnesium to Aluminum.</p>	4.142 0	3.782 0	2.640 0	-	2.640 0
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<p>Title: H-1 (T400/T700)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Initiated Safety/Qualification testing on Lithium Polymer (LiPoly) battery for the AH-1W. Worked feasibility studies for T700 Enhanced Digital Engine Control Unit and T700 Overspeed. Support common T700 engine projects.</p> <p>FY 2011 Plans: Provide Build Process Efficiencies for increased reliability and cost reduction. Address T400 parts obsolescence.</p> <p>FY 2012 Base Plans:</p>	0.298 0	0.352 0	1.084 0	-	1.084 0
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>		PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
Begin development of T700-401 engine harness testor. Complete LiPoly battery for H-1 upgrades. Continue support of common T700 engine projects.					
Title: AV-8B (F402)					
Articles:					
	6.113	5.013	4.200	-	4.200
	0	0	0		0
FY 2010 Accomplishments: Engineering Change Proposals (ECPs) submitted for improvements to oil breather vent pipe, low pressure compressor stage one vanes with damping foil and low plasticity burnishing, incipient blockage indicator, low pressure compressor stage three sealing strips, high pressure turbine stage one nozzle guide vane locating ring, anti-vibration mount for compressor discharge pressure transducer, low pressure compressor stage two and three with hard face coating, fuel metering unit pressure drop regulator, hydro mechanical unit modifications, and revised bearing oil feed pipe. Designed activity for low pressure compressor stage one, two, and three blades for increased foreign object damage tolerance through application of low plasticity burnishing, analysis for extending the lives for critical rotating part lives, redesign for fuel leak for Enhanced Variable Inlet Guide Vane Control System (EVICS), Hydromechanical Unit (HMU) permanent magnet alternator, redesign for fuel manifold pipe leakage.					
FY 2011 Plans: ECPs submission for EVICS torque motor roll cage redesign. ECPs submission for Low Pressure Compressor 1, Low Pressure Compressor 2, Low Pressure Compressor 3 blade airfoil Low Plasticity Burnishing. Detailed design effort to extend critical rotating part lives.					
FY 2012 Base Plans: ECPs for low plasticity burnishing of low pressure compressor stage one, two and three blades, fuel leak redesign of EVICS, HMU permanent magnet alternator, fuel manifold pipe leakage redesign, meandering wire magnetometer inspection technique for low pressure compressor stage one blade dovetails.					
Title: H-53/H-46/H-3 (T58/T64)					
Articles:					
	8.615	5.640	6.090	-	6.090
	0	0	0		0
FY 2010 Accomplishments: H-46/H-53 (T58) Investigated Pressure Relief Valve diaphragm failures and develop corrective action. Test and possibly qualify Next Generation Coating for 1st stage compressor blades. H-53 (T64)					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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Improved compressor blade retention effort will be completed. Gas Generator Turbine nozzle doublets and mid sump improvements continued. Modernized torque sensor effort initiated. Life management analysis and Reliability Centered Maintenance efforts continued.

FY 2011 Plans:
H-46/H-3 (T58)
Continued qualification of Next Generation Coating for 1st stage compressor blades.
H-53 (T64)
Mid sump improvements and modernized torque sensor effort continue. Fuel control reliability improvement program initiated. Life management analysis and Reliability Centered Maintenance efforts continue.

FY 2012 Base Plans:
H-46/H-3 (T58)
Complete qualification of Next Generation Coating for 1st stage compressor blades.
H-53 (T64)
Complete mid sump improvements and modernized torque sensor effort continue. Continue Fuel control reliability improvement program. Continue life management analysis and Reliability Centered Maintenance efforts.

Title: F-18 C/D/E/F (F414/F404)	14.008	10.629	18.020	-	18.020
Articles:	0	0	0		0

FY 2010 Accomplishments:
Software changes demonstrated improved engine stall performance. Component analysis for service life extension continued. Improved Stage 1 fan blade dovetail coating. Aircraft electrical load data collected and analyzed.

FY 2011 Plans:
Oil system improvements to address pressure cautions. Component analysis for service life extension. Full Authority Digital Electronic Control software modifications for reduced removals for engine stalls.

FY 2012 Base Plans:
Flameholder attachment redesign. Full Authority Digital Electronic Control obsolescence redesign. Turbine disk dovetail edge of contact improvements. Near real time damage assessment. Field performance management.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>		PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
High Pressure Compressor throat wear limit expansion. Oil pressure cautions. Main Fuel Control improvements to reduce mission aborts.					
Title: T-45 (F405)	1.813	2.198	2.000	-	2.000
Articles:	0	0	0		0
FY 2010 Accomplishments: Completed cold and hot section reliability improvement design change task.					
FY 2011 Plans: Address top safety issues reported from fleet. Analysis and redesign components based on service revealed deficiencies.					
FY 2012 Base Plans: Continue to address safety issues reported from fleet. Analysis and redesign components based on service revealed deficiencies.					
Title: V-22 Propulsion	1.582	-	6.600	-	6.600
Articles:	0		0		0
FY 2010 Accomplishments: Assessed engine in-service power availability performance. Improve drive system including Proprotor gearbox lead-the-fleet testing. Continue to address emergent safety of flight issues.					
FY 2012 Base Plans: Initiate Drive system corrosion improvement project, drive system lead the fleet, Full Authority Digital Engine Control Troubleshooting, constant frequency generator to Accessory gearbox casting change. Continue Infrared suppressor removal study, software generation, upper Nacelle system and compressor coating Trade Studies. Complete engine and system management plans. V22 Component Improvement Program (CIP) funding added to FY12.					
Title: Multi-Platform Product Support Teams	13.683	12.006	12.685	-	12.685
Articles:	0	0	0		0
FY 2010 Accomplishments: Projects provided common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants,					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
and refueling equipment; and improve electrical system product support, wiring, and battery systems. Includes funding for Government Furnished Equipment fuel provided in support of engine developmental and qualification testing. FY 2011 Plans: Continue FY2010 Plan. FY 2012 Base Plans: Continue projects to provide common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants, and refueling equipment; and improve electrical system product support, wiring, and battery systems. Includes funding for Government Furnished Equipment fuel provided in support of engine developmental and qualification testing.					
Title: F-35 (JSF) (F135) FY 2011 Plans: Begin accelerated mission testing of the F135 engine as a lead-the-fleet test program. This program requires dedicated test assets be procured or refurbished as well as significant test cell run time to ensure flight safety and optimized readiness as the Marine Corps Short Take Off/Vertical Landing aircraft enter service in 2012. Component level work will also begin in order to extend life limits of parts that are critical to extended time on wing and reduce cost of ownership.	-	27.000 0	-	-	-
Articles:					
Accomplishments/Planned Programs Subtotals	63.769	75.583	62.379	-	62.379

C. Other Program Funding Summary (\$ in Millions)
N/A

D. Acquisition Strategy
This is a NON-ACAT program. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics
The Component Improvement Program (CIP) will support engineering design and development efforts for 100% of the safety of flight issues on in-service propulsion & power systems covered under the program. In FY11, this equates to more than 200 individual Engineering Project Descriptions (EPDs). CIP will also address reliability

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0205633N: <i>Aviation Improvements</i>	1355: <i>Propulsion and Power Component Improvement Program</i>

and maintainability deficiencies equating to at least another 150 individual EPDs. Similar projects have increased the aggregate engine reliability across the USN/USMC fleet, as measured by the mean flight hours between engine removals, by 40% over the past six years.

Program execution will be actively managed on 100% of the projects via contractor earned value data and overall obligation and expenditure rates as reflected in Navy ERP. Data will be analyzed and measured against OSD/FMB benchmarks on a monthly basis.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng F402 Engine Program	WR	NAWCAD:PAX RIVER, MD	8.446	1.490	Oct 2010	1.302	Oct 2011	-		1.302	Continuing	Continuing	Continuing
Sys Eng F402 Engine Program	SS/CPFF	ROLLS ROYCE:UK	51.868	3.318	Dec 2010	2.898	Dec 2011	-		2.898	0.000	58.084	58.084
Sys Eng T58/T64 Engine Program	SS/CPFF	GE:MASS	71.973	2.508	Oct 2010	3.532	Dec 2011	-		3.532	0.000	78.013	78.013
Sys Eng T58/T64 Engine Program	WR	NAWCAD:PAX RIVER, MD	21.671	2.824	Oct 2010	2.558	Oct 2011	-		2.558	Continuing	Continuing	Continuing
Sys Eng J52 Engine Program	SS/CPFF	P&W:FLORIDA	36.363	1.605	Oct 2010	1.073	Oct 2011	-		1.073	0.000	39.041	39.041
Sys Eng J52 Engine Program	WR	NAWCAD:PAX RIVER, MD	9.945	1.367	Oct 2010	0.547	Oct 2011	-		0.547	Continuing	Continuing	Continuing
Sys Eng T56 Engine Program	SS/CPFF	ROLLS ROYCE:IN	31.712	3.599	Feb 2011	4.194	Feb 2012	-		4.194	0.000	39.505	39.505
Sys Eng T56 Engine Program	WR	NAWCAD:PAX RIVER, MD	22.818	1.542	Oct 2010	1.796	Oct 2011	-		1.796	Continuing	Continuing	Continuing
Sys Eng F405 Engine Program	SS/CPFF	ROLLS ROYCE:UK	24.539	1.274	Dec 2010	1.166	Dec 2011	-		1.166	0.000	26.979	26.979
Sys Eng F405 Engine Program	WR	NAWCAD:PAX RIVER, MD	1.810	0.912	Oct 2010	0.834	Oct 2011	-		0.834	Continuing	Continuing	Continuing
Sys Eng F414/F404 Engine Program	SS/CPFF	GE:MASS	81.282	8.476	Dec 2010	12.684	Dec 2011	-		12.684	0.000	102.442	102.442
Sys Eng F414/F404 Engine Program	WR	NAWCAD:PAX RIVER, MD	10.402	3.566	Oct 2010	5.336	Oct 2011	-		5.336	Continuing	Continuing	Continuing
Sys Eng T700 Engine Program	SS/CPFF	GE:MASS	21.861	2.388	Jan 2011	1.849	Jan 2012	-		1.849	0.000	26.098	26.098
Sys Eng T700 Engine Program	WR	NAWCAD:PAX RIVER, MD	9.418	1.022	Oct 2010	0.791	Oct 2011	-		0.791	Continuing	Continuing	Continuing
Sys Eng T400 Engine Program	SS/CPFF	P&W:FLORIDA	4.878	0.332	Dec 2010	0.200	Dec 2011	-		0.200	0.000	5.410	5.410
Sys Eng T400	WR	NAWCAD:PAX RIVER, MD	-	-		0.884	Dec 2011	-		0.884	0.000	0.884	
Sys Eng Props Program	SS/CPFF	HAM SUNSTRAND:CON	12.426	1.313	Dec 2010	1.450	Dec 2011	-		1.450	0.000	15.189	15.189

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 1355: <i>Propulsion and Power Component Improvement Program</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng Lab Fld Activity-1.0 or more	WR	NAWCAD:PAX RIVER, MD	177.827	9.046	Oct 2010	10.965	Oct 2011	-		10.965	Continuing	Continuing	Continuing
Sys Eng F135 Engine Program	SS/CPFF	P&W:CON	-	27.000	Oct 2010	-		-		-	0.000	27.000	43.500
GFE*	Reqn	DES/DLA:Various	9.603	1.310	Oct 2010	1.000	Dec 2011	-		1.000	Continuing	Continuing	Continuing
Sys Eng V-22 Propulsion Program	SS/FFP	Bell- Boeing:Ft. Worth, TX	3.400	-		4.500	Jan 2012	-		4.500	0.000	7.900	
Sys Eng V-22 Propulsion Program	WR	NAWCAD:PAX RIVER, MD	1.800	-		2.100	Nov 2011	-		2.100	0.000	3.900	
Sys Eng Other In-House Spt	Various	Various:Various	19.243	0.274	Oct 2010	0.300	Oct 2011	-		0.300	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	53.921	-		-		-		-	0.000	53.921	
Subtotal			687.206	75.166		61.959		-		61.959			

Remarks

GFE includes expected cost of fuel necessary to support engine development and qualification testing.
 This budget submittal realigns JSF CIP funds to Multi-Platform Support and V-22 based on resource sponsor direction and in concert with program schedule adjustment.
 Total may be off due to rounding.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various:Various	7.316	0.307	Dec 2010	0.310	Dec 2011	-		0.310	Continuing	Continuing	Continuing
Subtotal			7.316	0.307		0.310		-		0.310			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	Various	Various:Various	3.226	0.053	Dec 2010	0.053	Oct 2011	-		0.053	Continuing	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3189: <i>Digital I-TER</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3189: <i>Digital I-TER</i>	0.900	-	0.001	-	0.001	-	-	-	-	0.000	0.901
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops an increased capability to the existing BRU-42 Improved Triple Ejector Rack (ITER) for the AV-8B, which adds a multiple carriage capability for Smart Weapons such as Joint Direct Attack Munition (JDAM). Using existing ITERs as Government Furnished Material, the electronics tray will be replaced with a more capable electronics package allowing for smart weapons capability.

FY09 and FY10 funds realigned to PE 0604214N, Project Unit 2634. These funds were realigned to meet the appropriate intent and strategy of upgrading the AV-8B software to ensure the aircraft receives an increased capability while utilizing an upgraded BRU-42 Improved Triple Ejector Rack (ITER).

FY10 funds realigned within PE 0604214N, Project Unit 3190 to 3189 to cover extended POP and minor redesign to address integration platform software limitations.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: DIGITAL ITER KIT DEVELOPMENT	0.900	-	0.001	-	0.001
Articles:	0		0		0
FY 2010 Accomplishments: Completed Digital ITER development and Delivery of functional Test Units. Continued aircraft integration and support equipment redesign.					
FY 2012 Base Plans: There are no funded efforts planned in FY12 for Digital ITER.					
Accomplishments/Planned Programs Subtotals	0.900	-	0.001	-	0.001

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3189: <i>Digital I-TER</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN-7/072000: <i>War Consumables</i>	0.000	7.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.400

D. Acquisition Strategy

Digital ITER development plans to leverage an Air Force contract that upgrades their TER-9 system. Integration and software development on the AV-8B will be done through NAWC AD Patuxent River, MD and NAWC WD China Lake, CA. A sole source, APN-7 firm-fixed price contract is planned in FY11 to procure 147 racks.

E. Performance Metrics

Project is currently in testing phase.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3190: <i>Multi-Purpose Bomb Racks</i>	20.854	20.023	22.589	-	22.589	15.725	16.671	14.365	14.594	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	10	10	0	0		

Note

Wind Tunnel Testing was realigned from Multi-Purpose Bomb Racks (MPBR) Development to Testing to more clearly depict the function of the funds.

A. Mission Description and Budget Item Justification

3190- Multi-Purpose Bomb Racks (MPBR): The MPBR will replace the BRU-41 / 42 / 33 / 55 for the F/A-18E/F platform and provide for the carriage and release of both tactical and training stores on one common rack. FY13 includes 10 units for Developmental Test and Evaluation (DT&E) and FY14 includes 10 units for Operational Test and Evaluation (OT&E).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Multi-Purpose Bomb Rack (MPBR) Dev.	14.335	14.572	15.018	-	15.018
Articles:	0	0	0		0
Description: The MPBR funding develops a bomb rack to replace the BRU-41 / 42 / 33 / 55 for the F/A-18E/F. The vendors effort will be required not only in rack development, but also in a support role throughout the integration effort.					
FY 2010 Accomplishments: Continued MPBR design and development.					
FY 2011 Plans: Begin MPBR prototype development and fabrication after electrical and mechanical designs are complete. Once integration assets are available the design and/or modification of Support Equipment (SE) will occur. This effort will occur at both the rack and at the system/platform level.					
FY 2012 Base Plans: Continue prototype development. Finalize SE design for both the rack and the platform to rack interface.					
Title: Multi-Purpose Bomb Rack Software Dev.	4.183	4.022	4.094	-	4.094
Articles:	0	0	0		0

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>		PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: The MPBR funding will be used to develop the aircraft software required to interface the bomb rack and the stores it will carry with the aircraft. This interface is essential to the safe carriage and successful stores release.</p> <p>FY 2010 Accomplishments: Continued MPBR refinement of the rack and platform software requirements.</p> <p>FY 2011 Plans: Provide MPBR software to test activities to identify deficiencies and make corrections as required. Additional coding will be performed as expanded stores integration occurs.</p> <p>FY 2012 Base Plans: Finalize first build of software and port results into the next build for envelope expansion.</p>					
<p>Title: Multi-Purpose Bomb Rack Testing</p> <p align="right">Articles:</p> <p>Description: The MPBR testing will include ground (aircraft and test stand) and flight integration testing. These efforts will begin prior to delivery and will occur throughout the Engineering and Manufacturing Development (EMD) efforts of this rack. They will begin with prototype design coordination, initial test planning and will progress to ground and flight test events.</p> <p>FY 2010 Accomplishments: Continued MPBR design and development and prepared for vendor wind tunnel testing.</p> <p>FY 2011 Plans: Perform MPBR initial test planning for ground rack testing with a build-up toward first flight testing. Schedule wind tunnel test and generate wind tunnel models.</p> <p>FY 2012 Base Plans: Begin vendor full up rack testing and proceed toward production of development test assests. Perform wind tunnel testing and analysis.</p>	2.336 0	1.429 0	3.477 0	-	3.477 0
Accomplishments/Planned Programs Subtotals	20.854	20.023	22.589	-	22.589

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• APN-7/072000: <i>War Consumables</i>	0.000	0.000	0.000	0.000	0.000	0.000	21.637	20.016	20.376	457.250	519.279

D. Acquisition Strategy

The design and development of the MPBR will be a Cost Plus Incentive Fee competitive contract. The aircraft software integration will be done by the F/A-18 Advanced Weapons Laboratory at NAWC-WD China Lake and through a Cost Type contract with Boeing awarded through China Lake, CA.

The MPBR contract was awarded in March 2010. Subsequently, the unsuccessful vendor lodged a protest which placed the contract in a stop work status. The decision to continue with award occurred on 23 September 2010 and is currently executing.

E. Performance Metrics

FY10: EMD contract awarded.

FY11: Successfully complete milestones: System Readiness Review, System Functional Review, and Preliminary Design Review.

FY12: Successfully complete milestones: Critical Design Review

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	RAYTHEON:INDIANAPOLIS, IN	16.933	11.200	May 2011	12.007	Mar 2012	-		12.007	3.300	43.440	43.440
Subtotal			16.933	11.200		12.007		-		12.007	3.300	43.440	43.440

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCAD:LAKEHURST, NJ	-	-		0.212	Mar 2012	-		0.212	2.488	2.700	
Software Development	C/CPIF	BOEING:ST. LOUIS, MO	5.556	4.022	Apr 2011	3.882	Mar 2012	-		3.882	12.133	25.593	25.593
Subtotal			5.556	4.022		4.094		-		4.094	14.621	28.293	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NAWCAD:PATUXENT RIVER, MD	2.212	0.575	Nov 2010	0.894	Nov 2011	-		0.894	29.611	33.292	
Operational Test & Evaluation	WR	COTF:NORFOLK, VA	0.057	0.063	Dec 2010	-		-		-	2.676	2.796	
Wind Tunnel Testing	TBD	TBD:TBD	-	1.015	Sep 2011	2.583	Nov 2011	-		2.583	0.000	3.598	
Subtotal			2.269	1.653		3.477		-		3.477	32.287	39.686	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	SS/CPFF	SAIC:SAN DIEGO, CA	0.876	0.322	Nov 2010	0.657	Nov 2011	-		0.657	1.366	3.221	3.221

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD:PATUXENT RIVER, MD	2.897	0.750	Nov 2010	0.453	Nov 2011	-		0.453	3.502	7.602	
Government Engineering Support	WR	NAWCWD:CHINA LAKE, CA	3.945	1.000	Nov 2010	0.876	Nov 2011	-		0.876	3.397	9.218	
Program Management Support	WR	NAWCAD:PATUXENT RIVER, MD	2.079	0.645	Nov 2010	0.650	Nov 2011	-		0.650	0.000	3.374	
Program Management Support	C/FFP	EMA:PATUXENT RIVER, MD	0.229	0.231	Feb 2011	0.200	Nov 2011	-		0.200	0.000	0.660	0.660
Travel	Various	NAWCAD:PATUXENT RIVER, MD	0.400	0.200	Oct 2010	0.175	Oct 2011	-		0.175	0.700	1.475	
Subtotal			10.426	3.148		3.011		-		3.011	8.965	25.550	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		35.184	20.023		22.589		-	22.589	59.173	136.969	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>
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Multi-Purpose Bomb Racks	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016										
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q							
Acquisition Milestones																																			
Systems Development																																			
Hardware Development					Engineering and Manufacturing Development																														
Reviews						■	■				■																								
Contract Awards		●																																	
Delivery of Test Units																																			
Technical Evaluation																																			
Operational Evaluation																																			
Production Milestones																																			
Reviews																																			
Contract Awards																																			
Production Deliveries																																			

2012PB - 0205633N - 3190 The MPBR contract was awarded in March 2010. Subsequently, the unsuccessful vendor lodged a protest which placed the contract in a stop work status. The decision to continue with award occurred in September 2010, and EMD efforts began immediately. However, the schedule delays have pushed EMD efforts and initial LRIP award into FY15.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Multi-Purpose Bomb Racks				
Acquisition Milestones: Milestone C	2	2014	2	2014
Systems Development: Hardware Development: Development Phase - Engineering and Manufacturing Development (EMD)	1	2011	2	2014
Systems Development: Reviews: System Functional Review (SFR)	2	2011	2	2011
Systems Development: Reviews: Preliminary Design Review (PDR)	4	2011	4	2011
Systems Development: Reviews: Critical Design Review (CDR)	3	2012	3	2012
Systems Development: Reviews: Physical Configuration Audit (PCA)	2	2014	2	2014
Systems Development: Contract Awards: Engineering and Manufacturing Development Contract Award	2	2010	2	2010
Delivery of Test Units: Delivery of Test Assets (DT)	4	2013	4	2013
Delivery of Test Units: Delivery of Test Assets (OT)	4	2014	4	2014
Test & Evaluation Milestones: Technical Evaluation: Vendor Testing	4	2011	4	2013
Test & Evaluation Milestones: Technical Evaluation: Developmental Test and Evaluation (DT&E)	1	2014	4	2016
Test & Evaluation Milestones: Operational Evaluation: Integrated Test and Evaluation (IT&E)	2	2014	4	2016
Test & Evaluation Milestones: Operational Evaluation: Operational Assessment Readiness Review (OARR)	2	2015	2	2015
Test & Evaluation Milestones: Operational Evaluation: Operational Assessment (OA)	2	2015	3	2015
Test & Evaluation Milestones: Operational Evaluation: Operational Assessment (OA) Report	3	2015	3	2015
Production Milestones: Reviews: Production Readiness Review (PRR)	2	2015	2	2015
Production Milestones: Contract Awards: LRIP 1 Award, APN-7	2	2014	2	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 3190: <i>Multi-Purpose Bomb Racks</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestones: Contract Awards: LRIP 2 Award, APN-7	2	2015	2	2015
Production Milestones: Contract Awards: LRIP 3 Award, APN-7	2	2016	2	2016
Production Milestones: Production Deliveries: LRIP 1 Delivery, APN-7	2	2015	1	2016
Production Milestones: Production Deliveries: LRIP 2 Delivery, APN-7	2	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	7.808	-	-	-	-	-	-	-	-	0.000	7.808
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Add

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Highly Conductive Lightweight Aircraft Sealant <i>FY 2010 Accomplishments:</i> A proposal was received from the contractor in response to a Broad Agency Announcement, and the Navy has evaluated the proposal. Contract award is pending receipt of funds. Resolve the viscosity versus conductivity stalemate. Find ways to adjust viscosity or conductivity without adversely impacting the other. Resolve corrosion issues. Optimize processing and application methods.	0.956	-
Congressional Add: Laser Peening for P-3 Life Extension <i>FY 2010 Accomplishments:</i> A proposal was received from the contractor in response to a Broad Agency Announcement, and the Navy has evaluated the proposal. Contract is in negotiation. Funding will support technology development of processes to increase life expectancy of components, starting with the United States Navy's P-3 Orion fleet, thereby reducing maintenance costs and improving safety and reliability.	1.275	-
Congressional Add: Arc Fault Circuit Breaker With Arc Location System <i>FY 2010 Accomplishments:</i> Began creating inversion algorithm software to locate arc faults at distances closer than 10 feet. Continue creation of inversion algorithm software. Perform blind/functional test.	0.797	-
Congressional Add: Wireless Sensors For Navy Aircraft <i>FY 2010 Accomplishments:</i> Continued to demonstrate critical elements in laboratory setting. Proceed to limited system-level demonstration if full flight test is successful.	2.390	-
Congressional Add: Lightweight Composite Structure Dev For Aerospace <i>FY 2010 Accomplishments:</i> Manufactured component to demonstrate CH-53K cargo ramp. Awarded contract.	2.390	-
Congressional Adds Subtotals	7.808	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205633N: <i>Aviation Improvements</i>	PROJECT 9999: <i>Congressional Adds</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not required for Congressional Adds

E. Performance Metrics

Not required for Congressional Adds

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0205658N: <i>Navy Science Assistance Progr</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	3.639	3.535	1.957	-	1.957	3.478	3.555	3.626	3.697	Continuing	Continuing
0834: <i>LAB Fit Support</i>	3.639	3.535	1.957	-	1.957	3.478	3.555	3.626	3.697	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Naval Science Advisor Program ensures the Fleet/Force (F/F) helps shape the Department of the Navy (DoN) investment in Science and Technology (S&T), develops teaming relationships to rapidly demonstrate and transition technology, supports development of technology-based capability options for naval forces, and enables warfighting innovations based on technical and conceptual possibilities. This is accomplished through proactive connectivity and collaboration between DoN S&T and Joint, Navy, and Marine Corps commands worldwide. The program accomplishes this through several methods. It provides Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands. Science Advisors facilitate and disseminate Joint Capabilities Integration and Development System (JCIDS) requirements provided by the F/F Commanders to the Director of Navy Test and Evaluation and Technology Requirements (OPNAV N091). Science Advisors collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems. As a result, Science Advisors provide insight into issues associated with Naval Warfighting Capabilities that influence S&T program decision making. The program develops leaders among civilian scientists and engineers in the Naval Research Enterprise (NRE). Upon completion of their tours, Science Advisors return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making. The Office of Naval Research (ONR) Science Advisor program enables continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	3.701	3.535	3.605	-	3.605
Current President's Budget	3.639	3.535	1.957	-	1.957
Total Adjustments	-0.062	-	-1.648	-	-1.648
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-1.584	-	-1.584
• Section 219 Reprogramming	-0.061	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.064	-	-0.064
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>
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Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0834: <i>LAB Fit Support</i>	3.639	3.535	1.957	-	1.957	3.478	3.555	3.626	3.697	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Naval Science Advisor Program ensures the F/F helps shape the DoN investment in S&T, develops teaming relationships to rapidly demonstrate and transition technology, supports development of technology-based capability options for naval forces, and enables warfighting innovations based on technical and conceptual possibilities. This is accomplished through proactive connectivity and collaboration between DoN S&T and Joint, Navy, and Marine Corps commands worldwide. The program accomplishes this through several methods. It provides Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands. Science Advisors facilitate and disseminate JCIDS requirements provided by the F/F Commanders to the OPNAV N091. Science Advisors collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems. As a result, Science Advisors provide insight into issues associated with Naval Warfighting Capabilities that influence S&T program decision making. The program develops leaders among civilian scientists and engineers in the NRE. Upon completion of their tours, Science Advisors return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making. The Office of Naval Research (ONR) Science Advisor program enables continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

Decrease in funding from FY 2011 to FY 2012 is due to realignment of efforts to the appropriate S&T program elements.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: NAVAL SCIENCE ADVISOR PROGRAM	3.639	3.535	1.957
Articles:	0	0	0
FY 2010 Accomplishments:			
The Science Advisors are a conduit between the F/F, ONR and the NRE. Specific Fleet:			
- Science Advisor, Navy Warfare Development Command (NWDC), supported innovation of new warfighting strategies through the generation and development of advanced concepts to address Navy challenges and opportunities. Served as a major contributor to NWDC's pilot concept effort, Leveraging the Undersea Environment, leading formulation of concept ideas, technology solutions and associated technical analysis and studies. The Concept and associated action plan was approved and signed by CNO in Feb 2010. Provided technical support for the generation of other advanced warfighting concepts at NWDC in the areas of Irregular Warfare, Information Operations and Electro-magnetic Spectrum. Maintained an active involvement in Navy's development of undersea capabilities, including Distributed Netted Systems and Unmanned Undersea Vehicles, providing executive guidance and strategic development planning for the Command and senior leadership across key Navy and DoD organizations.			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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- Science Advisor, Commander Seventh Fleet (COMSEVENTHFLT) (C7F), continued engagement with the NRE as follows: briefed senior level audiences, participated in discussions on relevant technology and S&T gaps in the areas of Information Operations (IO), Electronic Warfare (EW), Computer Network Operations (CNO), Information Analysis & Communications, Survivability & Self Defense, Strike, and Anti-Submarine Warfare in the context of the Navy's 13 S&T Focus Areas and Sea Power 21 Pillars. Initiated projects, solicited and received over \$3M in project funds for the following efforts: Office of the Secretary of Defense Research Development Test & Evaluation (RDT&E) sponsored Project DogStar, a Command and Control and Combat Support (C2/CS) Protection effort for the Command & Control of Cyberspace fusing NetOps, Intel, and CNO. ONR TechSolutions sponsored EW Toolkit using Google Earth Commercial Off the Shelf (COTS) technology as applied to Tactical EW. Deputy Chief of Naval Operations for Communications Networks (OPNAV N6) sponsored Low Bandwidth Pilot to provide a proof of concept capability for Knowledge Management system replication between ship and shore. Technology and experiment prioritization were also staffed and provided to higher headquarters for Future Naval Capabilities (FNC), Rapid Technology Transitions (RTT), and Joint Capability Technology Demonstrations (JCTD).

- Science Advisor, Commander United States Fleet Forces Command (CUSFFC), facilitated integration and articulation of fleet warfighter and readiness requirements influencing Naval and Department of Defense RDT&E resourcing as follows: Led team from Operational Fleets, Force Providers and Naval Component Commands in articulation of fleet requirements to S&T community. Managed prioritization of proposed technical capabilities including FNC Program, RTT Program, Rapid Development and Deployment Program supporting Navy Urgent Operational needs, and Joint Concept Technology Demonstrator. Programs were prioritized in accordance with overarching Defense, Naval, and Fleet guidance (Combatant Command Integrated Priority List, Naval Strategic Plan, Warfighter Capability Plan, Integrated Capability Plan, etc.) and supported United States Fleet Forces (USFF) Flag Officer/Senior Executive Service (SES) voting member.

- Science Advisor, Commander U. S. Naval Forces Central Command (COMUSNAVCENT), developed, prioritized, and socialized COMUSNAVCENT Technology gaps based on prioritized threat with Chief of Naval Operations (CNO), OSD, National Reconnaissance Office (NRO), National Maritime Intelligence Center (NMIC), Naval Sea Systems Command (NAVSEA) and ONR. Developed and issued unclassified common operational picture Urgent Operational Need Statement (UONs) for Commander Task Force (CTF) 151- counters piracy efforts. Provided oversight to three previously issued UONs: 1) Counter surveillance; 2) Non Lethal Weapons; and 3) Counter Swarm. Coordinated with NAVCENT Force Protection, Naval Support Activity Security and Fleet Anti-Terrorism Security Team (FAST) company Marines to provide independent operational evaluation of counter surveillance technologies. Demonstrated 3D line of sight software tools to the National Geospatial Imagery Analysts and Naval Criminal Investigative Service (NCIS) agents on staff to optimize the use of these technologies. Influenced

FY 2010	FY 2011	FY 2012

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011							
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									
<p>TechSolutions investments in Rapid detection of contraband in voids and spaces by the Visit, Board, Search, and Seizure (VBSS) teams. Initiated the JCTD "Darkfusion" through the ONR, the JCTD is at the Joint Requirements Oversight Council (JROC).</p> <p>- Science Advisor, Commander Submarine Forces (COMSUBFOR), Defined the roles and responsibilities of the Undersea Enterprise (USE) Chief Technology Officer (CTO), facilitated the approval process through Commander, Submarine Forces on 09 NOV 2009. Initiated and actively supported the development of the Undersea Enterprise (USE) S&T strategic plan to articulate the enterprise's future capability needs (final plan approved by Commander, Submarine Forces on 10 FEB 2010). The Science and Technology Objectives (STOs) contained in the USE S&T strategic plan inform ONR's investment decisions. Evaluated, refined, and supported FY-12 FNC proposals, several were approved for new start: Sonar Automation (passive and active), Submarine Electronic Warfare, Air Independent Energy Storage System (Fuel Cell for AUV), and Corrosion. Provided TYCOM inputs to DARPA's RFP effort for the Blue Laser Communication source selection process. Coordinated TYCOM inputs to support Fleet Forces ranking of S&T and R&D proposals including FNC, RTT, and JCTD. Served as the TYCOM representative on the executive committee for the annual Submarine Technology Symposium (STS) sponsored by the Naval Submarine League and Commander Submarine Forces, facilitated all security aspects, reviewed and approved papers and presentations for technical contents and proper security markings.</p> <p>- Science Advisor, Commander Naval Surface Forces (SURFOR). Elevated Surface input for Improved Affordable Watertight Doors; evaluation and transition of an ONR/Program Executive Office Ships (PEO- SHIPS) Solid State Lighting project; Replaced Guided Missile Destroyer (DDG) Sonar fittings with quick-disconnects. Principal in Surface Ship Technology process (SURFTECH), providing the Command's perspective to the Chief Technology Officer's Team. SURFOR's advocate for Anti-Submarine Warfare (ASW) Improvement Program (ASWIP), Surface Warfare Improvement Program (SUWIP), and the Sea Trial experimentation working group. Supported commander, Naval Surface Forces for Littoral Combat Ship, Fleet requirements, and evaluation of candidate concepts of naval relevance. Managed and coordinated the Scientist at Sea Program.</p> <p>- Science Advisor, Commander Third Fleet (COMTHIRDFLT) (C3F), led the demonstration planning efforts for an Information Operations Technology Demonstration that was tasked by the Chief of Naval Operations. Also, completed a survey of game changing or disruptive Science and Technology (S&T) efforts throughout the Naval Research Enterprise and the several Universities. As a result of the survey, developed a Future Capabilities Needs List, which details desired areas of future S&T investment. Participated in the planning for the RIMPAC exercise, Trident Warrior 10, Terminal Fury, and C3F Sea Trial/Sea Shield Experimentation efforts. Prioritized Future Naval Capabilities (FNC), Rapid Technology Transitions (RTT), Deep Lightning Bolt Initiatives, and Joint Capability Technology Demonstrations (JCTD). Participated in Sea Shield Integrated Prioritized Capabilities List development, which focused on the areas of Anti-Submarine Warfare (ASW), Mine Warfare (MIW), Anti-Terrorism/Force Protection (AT/FP), and Integrated Air Missile Defense (IAMD). Worked with the Defense Advanced Research</p>			<table border="1"> <thead> <tr> <th>FY 2010</th> <th>FY 2011</th> <th>FY 2012</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	FY 2010	FY 2011	FY 2012			
FY 2010	FY 2011	FY 2012							

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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Project Agency (DARPA) on new technologies in anti-ship missiles, counter swarm weapons, counter submarine unmanned vehicles, and underwater sensors.

- Science Advisor, US Naval Forces Europe / Africa - US SIXTH Fleet managed the development of the Computer Aided Maritime Threat Evaluation System, a rules based information technology to aid SIXTH Fleet in assessing the risk of commercial shipping within the AOR. Chaired the SIXTH Fleet Science and Technology Board to conduct prioritization of ONR Future Naval Capabilities and OSD Joint Capabilities Technology Demonstration proposals. Conducted S&T engagements with the NATO Undersea Research Center (NURC) to facilitate greater interoperability and the transition of NURC technologies into Naval Forces Europe / Africa - SIXTH Fleet exercises and operations. Participated in the Command's Joint Force Maritime Component Commander (JFMCC) certification exercise onboard USS MOUNT WHITNEY during AUSTERE CHALLENGE 09, developing S&T capability needs as a result.
- Science Advisor, Commanding General 1st Marine Expeditionary Force and Marine Forces Central Command (CG I MEF/ MARCENT). Assisted in the expansion of the Infantry Immersion Trainer (IIT), helped establish the Close Combat Immersive Infantry Training (CCIIT) Working Group (WG) and the Irregular Warfare Training Community of Interest (IWT COI), and continued efforts with the Future Infantry Training Environment (FITE) JCTD. These efforts provided small unit infantry with the sensory inputs and stresses of the battle field in coordination with the need to make sound moral, ethical, and tactical decisions. Supported the Persistent Intelligence, Reconnaissance, and Surveillance (PISR) Capabilities based assessment. Helped establish the Expeditionary Power and Energy Working Group. Executed combat deployment in support of MARCENT to address requirements concerns expressed by MCCDC. In conjunction with II-MEF Science Advisor, conceived of the USMC Operational Force Science, Technology, and Experimentation (ST&E) Operational Advocacy Group (ST&E OAG) to consolidate the voices of charter members, (to include the three MEFs, MFP, MARFORCOM, MARFORRES, and MARSOC), in order to provide coordinated demand signals to the Science and Technology (S&T) Community and the Expeditionary Force Development System (EFDS).
- Science Advisor, Chief of Naval Operations (CNO) Strategic Studies Group (SSG) fully partnered in the generation of revolutionary warfighting concepts for the Navy of the future. Organized the CNO Fellows Tech Travel week and the Fall Program including: Researching and inviting lecturers to address the SSG, and oversaw and helped coordinate Mini Tech Travel for all SSG members. Engaged in the development of the 'Way Ahead Plan' which in SSG's annual research theme that is ultimately presented to CNO. Supported, and coordinated the Concept Teams in review of the various aspects and utility of unmanned vehicles systems. Participated in Plenary Sessions, CNO Executive Panel Sessions, and Concept Exploration Events. Aided in the development of the final brief and report of last year's focus topic to CNO and senior flag officer leadership and staffs throughout the Navy. Researched various topics related to unmanned systems, operations, deployment, and connectivity as presented by Admiral Hogg, the CNO Fellows, and Associate Fellows.

FY 2010	FY 2011	FY 2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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- Science Advisor, Commander, U.S. Marine Corps Forces Command (COMMARFORCOM), continued a cohesive and close teaming relationship with ONR Global Science Advisors at I MEF, II MEF, III MEF, and Marine Forces Pacific (MARFORPAC) that coordinated United States Marine Corps (USMC) operating force's voice on S&T matters. Performed continuous communication and collaboration with United States Joint Forces Command (USJFCOM) and United States Fleet Forces Command (USFFC) capability development communities to ensure development of technology-based capabilities are optimal to support naval forces. Facilitated the USMC operational force voice for prioritization of JCTD, RTT, and FNC. Performed continuing coordination with Marine Corps Combat Development Command (MCCDC) and Marine Corps Warfighting Lab (MCWL) to ensure operating force needs are represented in future naval expeditionary warfare capabilities. Reviewing USMC Urgent Needs Statement (UNS) requests for applicability to ONR S&T programs.

- Science Advisor, Commander, Naval Air Forces (COMNAVAIRFOR), continued the development and installation efforts of the North Atlantic Treaty Organization (NATO) Sea Sparrow Missile (NSSM) Electro-Optical/Infrared (EO/IR) upgrade on 2 Aircraft Carriers (CVNs), USS Dwight D. Eisenhower (CVN-69) and USS Harry S. Truman (CVN-75), for detection and identification of small boat threats to aircraft carrier strike groups. NSSM EO/IR was partially funded through ONR Code 31 and work continues to build this system capability into the CVN version of PMS-480 Ship Protection System Program of Record. Coordinated the first-ever Naval Aviation Enterprise (NAE) Day at ONR that was well attended by NAE Air Board & ONR leadership. Completed the development and installation of the Helicopter Control Officer (HCO) trainers on Naval Stations in Norfolk and San Diego. The HCO trainer is a low-cost, realistic, tower trainer for HCO operators using simulation scenarios. Completed the development and installation of the Tool Room Process Management System, an operator-level tool room process management, tracking, and accountability system. Completed the development of the non-pyrotechnic search and rescue (SAR) marker that eliminates the risk of starting brush fires when used in dry environments. Continued development efforts for the CVN Catapult Calculator to replace manual paper lookup tables. Initiated 2 Tech Solutions addressing: a) a Landing Signal Officer Database to collect landing data and evaluate pilot performance during CVN landings, b) a ALE-43 capability enhancement to improve the effectiveness of airborne electronic countermeasures.

- Science Advisor, CNO Executive Panel (CEP), serving as a member of CNO personal staff, provided support to the CEP as an action officer for CEP subcommittee meetings, plenary sessions and intelligence briefings. Performed as Principal Staff representative for two CEP subcommittees; (1) Improved Concept Generation and Development, and (2) Technical Diversity. Served as the Secondary Staff representative for two CEP subcommittees; (1) Unmanned Aerial Vehicles (UAV) and (2) Navy Personnel Costs. Provided direct support to another CEP subcommittee, Cyber Warfare, liaising between ONR/NRL and the CEP Principal Staff representative to ensure an optimal outcome for both parties. Worked for a subcommittee occasional includes a site visit, such as the UAV subcommittee's trip to Patuxent River NAS to meet with personnel from PEO-UMW, PMA-263 and

	FY 2010	FY 2011	FY 2012

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>NAVAIR. Intelligence briefings are conducted routinely here in the CNA facilities by subject matter experts on a variety of relevant topics. However, rather than bringing a bunch of folks here, we coordinated for briefings to a majority of the CEP members at CIA headquarters. Served as Principal Action Officer on CNO staff regarding the CNO's Strategic Studies Group (SSG) which requires origination of the annual theme and preparing read-ahead materials for the CNO prior to his visits with the SSG fellows. Also served as the Principal Staff representative for the CEP subcommittee that serves as a board of advisors for the SSG fellows annually.</p> <p>- Science Advisor, Commanding General II Marine Expeditionary Force (CG II MEF) assisted 2D Marine Expeditionary Brigade (MEB) S&T Officer in researching technology enablers during its deployment to Afghanistan. Developed a formal document listing II MEF Science and Technology Priorities, which was signed by the Commanding General to inform the Marine Corps S&T community. Worked with other USMC Science Advisors to develop an Operational Science, Technology and Experimentation (OST&E) Operational Advisory Group (OAG). The intent of the OST&E OAG is to provide a unified voice in presenting USMC Operational Force needs to the Combat Development Community. Established a local Science Advisor network with Science Advisor from Marine Special Operations Command at Stone Bay, NC and XVIII Airborne Corps at Fort Bragg, NC. The network was used to share information and input on S&T efforts across the Marine Corps, Army and Special Operations. II MEF Science Advisor established a working relationship with the Naval Counter Improvised Explosive Devices Knowledge Network in order to better inform them on CIED requirements coming from 2D MEB in Afghanistan. Assisted ONR and II MEF with coordination of the Operational Adaptation Developmental Test 2 (DT-1) at Bogue Field, NC.</p> <p>- Science Advisor, Commander, U.S. Marine Corps, Pacific (COMMARFORPAC), worked with the operating forces and S&T community to improve joint warfighting capabilities as well as highlight S&T issues unique to the Pacific Area of Responsibility (AOR). A prototype Graphic Operations Order project, created using a Hawaii based company, that can significantly improve the timeliness and accuracy of the development of mission plans was successfully demonstrated. Significant strides were made in development of renewable energy experiments for Hawaii that will have a long term benefit in the execution of energy and water security strategies critical to operations in the Pacific region as well as enablers for the relocation of Marines from Okinawa to Guam. Executed two successful experiments to prove that new airborne and space based hyper-spectral imaging sensors can be used to accurately map critical coastal parameters required for planning amphibious operations. The algorithms and hyper-spectral data libraries developed as a result of these experiments will be available to the operating forces by the end of the year. Worked with Navy researchers, industry and acquisition commands to develop requirements for new fire suppression systems for armored vehicles. Personnel riding in armored vehicles are facing new risks from incendiary-enhanced IEDs and studies showed that fire suppression systems being installed were inadequate and themselves dangerous when activated. New technologies for fire suppression systems and protective equipment will be developed and fielded. Engaged Okinawa Marines in the S&T process</p>			
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UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>to deal with issues unique to their missions in the western Pacific which resulted in the creation of a new science advisor position at the Third Marine Expeditionary Force (III MEF).</p> <p>- Science Advisor, Commander Pacific Fleet (COMPACFLT), improved capabilities across the Pacific Fleet AOR through rapid technology pull in various mission areas including Maritime Security Operations, ASW and Counter-Intelligence Surveillance Reconnaissance (ISR). Engaged S&T, Acquisition, Industry, University, Other Government Agencies and Coalition Partners to emphasize our warfighting gaps and identify possible long-term solutions and collaborative efforts. Finalized three Techsolution requests to address a critical warfighting gap associated with 1) Maritime Security Operations (MSO) to provide an Enhanced Maritime Intercept Operations (E-MIO) capability to support intelligent collection, dissemination, analysis and reachback, 2) Real-time assessment of ASW operational performance during exercises to enhance operator training and 3) threat surveillance situational awareness tool. The EMIO capability was tested during Talisman Sabre and results were transitioned into PEO Command, Control, Communications, Computers, and Intelligence (C4I's) E-MIO program of record. Acted as Operational Manager and project oversight lead at COMPACFLT for a JCTD. Worked with the Navy's S&T and Acquisition communities to identify advanced technologies for PACFLT's Maritime Operations Center (MOC) to improve our capability to Command and Control associated with Joint Task Force responsibilities. Continued Shipyard Innovation, formulated a project regarding application of Nanotechnologies for coatings and paints in an effort to reduce maintenance of shipboard equipment and possibly improve anti-fouling bottom coatings. Continued to engage leadership involved in improving ASW and Surface Warfare capabilities to support Pacific AOR wartime contingency plans. Emphasis has been in non-traditional ASW technologies, Fleet Synthetic Training and Distributed Netted Sensors for ASW and Over-the-horizon targeting and improve weapons for Surface Warfare. Naval Post Graduate School (NPGS) established significant research proposals/experiments, in support of PACFLT, focused on Cooperative Operations and Applied Science & Technologies Study (COASTS), Littoral Combat Ship (LCS) Platform Logistics support and asymmetric Ballistic Missile Defense concepts.</p> <p>- Science Advisor, Naval Supply Systems Command (NAVSUP) is the Research and Development manager, technology requirement and technology facilitator and Naval Research Enterprise conduit for NAVSUP. Generated NAVSUP's first listing of capability gaps, which will help to direct R&D investments at NAVSUP. Developed a prioritized listing of NAVSUP R&D initiatives, and executed a portion of those with NAVSUP's first allotment of discretionary RDT&E funds. Initiated collaborative projects with the Defense Logistics Agency. Continued execution of a Technology Insertion Program for Savings (TIPS) funded project for Retail Operations Management Enterprise Support (ROM-ES) that will automate ship retail sales and inventory. Managed Navy Logistics Program (NLP) projects: Navy Integrated Lifecycle Product Support Center (NILPSC) and National Item Identification Number (NIIN) Validation and Correction. Managed NAVSUP's Small Business Innovation Research (SBIR) program. Served as the NAVSUP representative to the Navy SYSCOMs' Systems Engineering Stakeholders Group (SESG) and Corrosion Prevention</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>and Control (CPC) Working Group. Served as coordinator for the NAVSUP Technical Authority Board and as the manager of internal NAVSUP documentation necessary to implement Technical Authority within the command.</p> <p>- Science Advisor, U. S. Pacific Command (USPACOM), developed a Command-wide S&T strategy to address operational shortfalls and synchronize S&T engagement with the USPACOM Theater Campaign Plan. Established and executing multi-phase action plan to inform Service RDT&E enterprise of Command war fighting shortfalls and identify candidate mitigation capabilities via USPACOM S&T Integrated Priority List. Planned and executed S&T board to support exercises TERMINAL FURY and NORTHERN EDGE augmenting USPACOM personnel with representatives from National Agencies, Service Laboratories, and Defense Advanced Research Project Agency. Established tactics, techniques, and procedures to synchronize S&T discovery of mitigating capabilities to emerging shortfalls and insertion of disruptive technology into Command planning and execution cycle during crisis and contingency operations. Continued and extended cooperative technology development to build interoperability and coalition operational military capabilities with India, Singapore, and Korea. Extended and improved outreach to Japan, Australia, Malaysia, Indonesia, and Thailand by building cooperative relationships with Department of Defense S&T and International Cooperation activities located in each host nation. Developed and implemented plan to build Global Technology Awareness program for professional development of USPACOM staff, providing opportunity to ONR scientists for increased understanding of roles and relevance of S&T to Combatant Commands.</p> <p>- Science Advisor, Chief of Naval Operations Code N81 (OPNAV N81), focused on disseminating the Navy's warfighting capability/risk analysis products to the broader S&T community resulting in an improved influence of requirements pull on S&T. The N81 Science Advisor was the project lead on the Next Generation Naval Obscurants Study with JHU/APL, which was a Program Objective Memorandum (POM)-12 decision assessment for a CNO/N00X related tasker based on previous Naval Warfare Development Command (NWDC) experimentation. Provided N81 pillar engagement for POM-13 Future Naval Capability (FNC) gap development efforts. Other continual tasks include monitoring, interacting, and providing influence when required to the FNCs, Innovative Naval Prototype (INP), Naval Research Advisory Committee (NRAC), Defense Science Board (DSB), and Sponsor Program Proposal for S&T N80/N091. In addition, the N81 Science Advisor is the owner of the S&T risk/capability card in support of N81's POM-12 Front End Assessment (FEA).</p> <p>- Science Advisor, Commander Submarine Forces Pacific Fleet (COMSUBPAC) continues to expand the capabilities of the Unmanned Aerial System (UAS, aka SOTHOC, Submarine Over-The-Horizon Organic Capability). After a successful first-ever launch and control of a Unmanned Aerial Vehicle (UAV) from a submerged platform in FY09, a realistic tactical exercise is scheduled for the summer of 2010. This exercise will utilize UAS for over-the-horizon targeting of High-Valued Units (HVU) in a multi-ship formation, culminating in a weapons launch. In ASW, continued refinement and testing of the Non-Traditional Sensor System (NTSS) will culminate in deployment of the system to the Western Pacific later this year. CSP SA raised the</p>			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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visibility of UAS and NTSS efforts within COMSUBPAC, COMSUBFOR, COMPACFLT, N87, and elsewhere to secure ongoing support for future development work. CSP SA has also been working with ONR Code 32 and NSWC Panama City to demonstrate UUV capability, using the Collection Delivery Vehicle (CDV). Other efforts have been focused on influencing the ONR FNC and UnderSea Enterprise S&T processes to ensure COMSUBPAC priorities are understood and funded.

- Science Advisor, Naval Mine and Anti-Submarine Warfare Command (NMAWC), provided continuous engagement with ONR, fellow Science Advisors, and Fleet and Systems Command senior leaders in the creation, modification, and promulgation of Anti-Submarine Warfare (ASW) and Mine Warfare (MIW) warfighting gaps used as the basis for the development of Future Naval Capabilities (FNC) Enabling Capability (EC) products. Additionally, served as the NMAWC subject matter expert for C4I systems and presented the command's mission requirements to the OPNAV-led Range of Warfare Command and Control (ROW C2) Task Force to enable command and control of ASW and MIW forces in a challenging, degraded communications environment. Created briefing materials detailing Science and Technology program transition status for the Commander that were included in the ASW Readiness brief provided to the CNO. Key participant in the Fleet Collaborative Teams' (FCT) annual assessment of ASW and MIW Integrated Prioritized Capabilities List (IPCL).

- Science Advisor, OPNAV N2N6 advised the Deputy Chief of Naval Operations for Information Dominance (DCNO N2N6) and his staff on decisions regarding critical technology issues addressed through S&T and RDT&E initiatives. Efforts focused on the development of S&T investments to transition the U.S. Navy to an information-centric force. In conjunction with these efforts, the N2N6 Science Advisor worked across the Navy Information Dominance Enterprise to develop roadmaps to achieve Information Dominance in the areas of Maritime Domain Awareness, Networks, Intelligence Surveillance and Reconnaissance, and Cyber for the next decade and beyond. As part of the Network roadmap development, highlighted game-changing technologies to assist in the convergence to a single Navy network and architecture. To enhance coalition partnerships, and in cooperation with OSD-Policy, developed a project agreement between the US and French Navy to collaborate on future Maritime Intelligence and Surveillance capabilities.

- Science Advisor, Commander, Navy Expeditionary Combat Command (COMNECC). Updated the NECC Science and Technology Strategy Plan as the warfighters demand signal to the Navy Expeditionary Combat Enterprise (NECE). Initiated efforts to establish an Expeditionary Technology Group similar to SUBTECH and SURFTECH to support the NECE execution of efforts in response to the S&T plan. Conducted initial requirements definition for the system in support of the Riverine and Intercoastal Operations (RIO) JCTD. Conducted successful testing of the selected suite prior to systems integration efforts. Developed a number of initiatives under the Rapid Technology Transition program in support of EOD, the Sea Bees and Maritime Civil Affairs. Continued to develop strategic partnerships with Navy Special Warfare and the USMC requirements efforts to provide common approaches to shared gaps. Developed and integrated FY 12 Future Naval Capability gaps in support of NECC mission

FY 2010	FY 2011	FY 2012

UNCLASSIFIED

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>requirements within the construct of the Naval Expeditionary Maneuver Warfare pillar. Initiated discussions for an FY 13 gap for Human Social Cultural Behavior. Developed plans for execution of NECC testing under the Sea Trial program for FY 11.</p> <p>- Science Advisor, Commander, Naval Network Warfare Command (NNWC), led study to identify top five S&T issues for the Command (i.e., Computer Network Defense, Afloat Network Management, Persistent Intelligence, Surveillance & Reconnaissance /Fusion Correlation, Operational Level Command and Control, and Maritime Domain Awareness), participated in NNWC prioritization for FY10 FNCs proposals. Led effort to adapt Joint Test and Evaluation methods to measure non-material contributions from Naval experimentation efforts. Coordinated and led investigations into maritime requirements for space based laser communication and sensing capabilities.</p> <p><i>FY 2011 Plans:</i> Continue all efforts of FY 2010 less those noted as completed above.</p> <p><i>FY 2012 Plans:</i> Continue all efforts of FY 2011.</p>				
Accomplishments/Planned Programs Subtotals		3.639	3.535	1.957
C. Other Program Funding Summary (\$ in Millions)				
N/A				
D. Acquisition Strategy				
Not Applicable.				
E. Performance Metrics				
Goal: Provide leadership with timely S&T advice on issues.				
Metric: Monthly reports by Science Advisors to the Office of Naval Research and senior leadership within their assigned commands.				

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>

FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Proj 0834	
Naval Science Advisor Program	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205658N: <i>Navy Science Assistance Progr</i>	PROJECT 0834: <i>LAB Fit Support</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 0834</i>				
Naval Science Advisor Program	1	2010	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0205675N: <i>Operational Nuclear Power Sys</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	71.730	74.229	82.705	-	82.705	86.291	111.403	100.732	96.236	Continuing	Continuing
1303: <i>Operational Nuclear Power System</i>	71.730	74.229	82.705	-	82.705	86.291	111.403	100.732	96.236	Continuing	Continuing

A. Mission Description and Budget Item Justification

The details of this program element are classified CONFIDENTIAL and are submitted annually to Congress in the classified budget justification books.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	71.732	74.229	75.551	-	75.551
Current President's Budget	71.730	74.229	82.705	-	82.705
Total Adjustments	-0.002	-	7.154	-	7.154
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	7.266	-	7.266
• Rate/Misc Adjustments	-	-	-0.112	-	-0.112
• Congressional General Reductions Adjustments	-0.002	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0205675N: <i>Operational Nuclear Power Sys</i>	PROJECT 1303: <i>Operational Nuclear Power System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1303: <i>Operational Nuclear Power System</i>	71.730	74.229	82.705	-	82.705	86.291	111.403	100.732	96.236	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The details of this program element are classified CONFIDENTIAL and are submitted annually to Congress in the classified budget justification books.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Operational Nuclear Power System	71.730	74.229	82.705
Articles:	0	0	0
Description: N/A			
FY 2010 Accomplishments: N/A			
FY 2011 Plans: N/A			
FY 2012 Plans: N/A			
Accomplishments/Planned Programs Subtotals	71.730	74.229	82.705

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	268.815	245.298	320.864	1.500	322.364	325.943	286.068	300.078	205.413	Continuing	Continuing
2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>	22.782	25.747	24.024	-	24.024	35.881	34.624	31.666	30.601	Continuing	Continuing
2273: <i>Air Ops Cmd & Control (C2) Sys</i>	62.832	68.465	65.963	1.500	67.463	116.544	79.435	81.075	36.708	Continuing	Continuing
2274: <i>Command & Control Warfare Sys</i>	10.927	19.633	26.174	-	26.174	25.470	21.112	18.145	16.097	Continuing	Continuing
2275: <i>Joint Tactical Radio System</i>	5.294	2.038	5.018	-	5.018	5.069	2.260	2.295	2.318	Continuing	Continuing
2276: <i>Comms Switching and Control Sys</i>	4.239	4.293	4.071	-	4.071	3.371	1.738	1.662	1.706	Continuing	Continuing
2277: <i>System Engineering and Integration</i>	6.509	5.580	9.650	-	9.650	9.752	9.936	9.997	7.680	Continuing	Continuing
2278: <i>Air Defense Weapons System</i>	5.025	5.938	2.171	-	2.171	2.271	3.404	3.519	3.578	Continuing	Continuing
2510: <i>MAGTF CSSE & SE</i>	64.774	33.538	43.185	-	43.185	51.778	52.956	44.401	21.054	Continuing	Continuing
3099: <i>Radar System</i>	18.184	24.893	33.887	-	33.887	34.483	8.022	8.640	8.797	Continuing	Continuing
9999: <i>Congressional Addds</i>	6.374	-	-	-	-	-	-	-	-	0.000	6.374
9C89: <i>Marine Ground-Air Radar</i>	61.875	55.173	106.721	-	106.721	41.324	72.581	98.678	76.874	Continuing	Continuing

Note

Ground/Air Task Oriented Radar (G/ATOR) (formerly known as the Multi-Role Radar System (MRRS) was funded under project C30999D prior to FY2010.

A. Mission Description and Budget Item Justification

This program element provides funding to develop the command and control (C2) support and information infrastructures for the Fleet Marine Force and supporting establishment. Doctrinally, the C2 support system and the information infrastructure form two parts of a triad of capabilities which permits command and control systems to be transformed into a complete operating system. The third element of the triad is command and control organization and is not covered in this program element. USMC command and control is divided into seven functional areas and one supporting functional area as follows: intelligence C2, fire support C2, air operations C2, radio systems C2, combat service support C2, warfare C2, radar systems C2, and C2 support (information processing and communications).

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>
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Within this program element, subprojects have been grouped by C2 functional area for more efficient planning. Air defense weapons systems have been added to facilitate planning and a separate project is used for systems assigned to the supporting establishment. Subprojects which support the commander's decision processes have been collected into the Command Post Systems project since these systems must work in close cooperation to ensure effective C2 of Marine Air Ground Task Forces.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	279.222	245.298	195.723	-	195.723
Current President's Budget	268.815	245.298	320.864	1.500	322.364
Total Adjustments	-10.407	-	125.141	1.500	126.641
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.881	-			
• SBIR/STTR Transfer	-9.675	-			
• Program Adjustments	-0.001	-	128.535	1.500	130.035
• Rate/Misc Adjustments	-	-	-3.394	-	-3.394
• Congressional General Reductions Adjustments	-0.150	-	-	-	-
• Congressional Directed Reductions Adjustments	2.300	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: *Media Exploitation Tool Integration with Intelligence C2 Systems*

Congressional Add: *Battlefield Sensor Netting*

Congressional Add: *M2C2*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	1.195	-
	2.391	-
	2.788	-
Congressional Add Subtotals for Project: 9999	6.374	-
Congressional Add Totals for all Projects	6.374	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206313M: <i>Marine Corps Comms Systems</i>

Change Summary Explanation

The entire increase in FY12 in this PE is accounted for by program adjustments to the G/ATOR Radar (\$84M), GCSS-MC (\$28M), and the G-BOSS program (\$17M). The G/ATOR increase is associated with restructure of the program, resulting in resourcing in accordance with the new schedule and cost estimate. The GCSS-MC increase is due to R&D funding to support the scheduled start of Block 2 in FY12. The G-BOSS increase is associated with the new requirement for integration of UAS data.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>				PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>	22.782	25.747	24.024	-	24.024	35.881	34.624	31.666	30.601	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Advanced Field Artillery Tactical Data System (AFATDS) - The Advanced Field Artillery Tactical Data System (AFATDS) is an automated fire support command and control (C2) system consisting of fire support application software operating on common hardware platforms, which provides the MAGTF with the ability to rapidly integrate all supporting arms assets into maneuver plans via a digital data communications links. The AFATDS program includes AFATDS software and hardware, the Effects Management Tool (EMT) (a C2PC injector), the Back-up Computer System (BUCS), and the Battery Mobile Tactical Shelter (MTS).

Tactical Command Operations System (TCO) - TCO is the principle tool within the Marine Air Ground Task Force (MAGTF) for situational awareness through distribution of the Common Tactical Picture (CTP). It supports tactical operations providing information via high speed computer systems in a timely manner and includes the Intel Operations Workstations/Servers. R&D funds provide science and technology advanced concepts to be applied to the system for an increase in functional capabilities to the warfighter, to include JC2 development efforts.

Target Location Designation and Handoff System (TLDHS) - Provides the ability for Forward Observers (FOs) and Forward Air Controllers (FACs) to: observe their area of interest, quickly and accurately locate ground targets, receive and display Blue Force Situational Awareness information and Fire Support Coordination Measures (FSCMs) on map displays interfaced with C2PC. TLDHS can digitally request and provide digital terminal control for target engagements by field artillery (FA) through AFATDS, close air support (CAS) aircraft, and naval surface fire support (NSFS), and the machine-to-machine interface of the system reduces the potential for fratricide due to human error and by displaying friendly positions and target locations to the terminal controller. TLDHS Block II also provides the capability to designate targets for laser-guided munitions and laser spot trackers. TLDHS Block II is comprised of and integrates two major subsystems: the Targeting Subsystem and the Target Hand-Off Subsystem. USMC Milestone C for TLDHS Block II was June 2005 and Fielding and Full rate Production Decisions were October 2006. Fluctuations of R&D across the FYDP are due to the nature of a spiral development approach.

Marine Air Ground Task Force (MAGTF) Command and Control (C2) Systems Applications - MAGTF C2 SA merges the development, integration and testing of 45 existing C2 systems and applications into one common enterprise capability. They reside in all Combat Operations Centers (COCs) and related USMC C2 platforms. This effort provides greater economies of scale/affordability with system developers, technical design agents, integration agents and individual program offices. MAGTF C2 SA efforts are in alignment with the combat developers requirements for: Net-Centric systems, Development of reusable Open Architecture components, Data exposure, Enhancing the war-fighter's Situational Awareness and Increasing/Maximizing the Commander's decision space.

Joint Battle Command - Platform (JBC-P) - will provide a single integrated Joint Blue Force Situational Awareness (JBFSA) capability solution for C2, Position Location Information (PLI), Mapping, Messaging, Overlays, and Routes, as required by Joint Requirements Oversight Council Memoranda 163-04, and 161-03. JBC-P will replace the BFT family of systems.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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BFSA/Blue Force Tracker (BFT) - The BFT System is a commercial L-Band satellite-based Tracking and Communication System. USMC was directed to converge to the BFT Family of Systems (FoS) by Joint Requirements Oversight Council (JROC) Memorandum 163-04 direction based on OIF/OEF lessons learned. The BFT FoS is comprised of the BFT, Mounted Refresh Computer (MRC) and Tactical Operations Center (TOC) Kit. BFT provides the near real time capability to identify vehicle/squad/rotary aircraft position, track progress, and communicate with other operators of these tactical "platforms" in OIF, OEF, other OCONUS operations and CONUS training for wartime deployment.

Identity Dominance System (IDS) - will provide a user friendly biometric authentication technology that will be employed to deny the enemy freedom of movement within the populace and positively identify known insurgents within an Area of Responsibility (AOR). It will enable Marine Corps and host-nation security personnel to detain, apprehend or deny entry to unwanted individuals in critical areas. The capability will enhance overall Force Protection and High-Value Target Identification by providing a means to rapidly ascertain whether or not a detained individual is wanted for criminal or terrorist activity, badge local workers and support post incident investigation by allowing collected evidence to be compared to available biometrics to identify likely suspects. Specifically, these items will enable enhanced perimeter security for high-visibility events such as national elections on foreign soil; high profile dignitary meetings between U.S. military officials and host nation political and military leaders; and U.S. military demonstrations. This capability will also enable enhanced prisoner management for the efficient administration of detainees, and improve Civil Action of DoD personnel by providing a means to track payments to host-nation workers and managed local labor who support/access facilities where military/Marines are located. Finally, this capability will enhance available intelligence by allowing "link analysis" on individuals to reveal criminal or terrorist associations not readily apparent when records are reviewed individually.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *JBC-P: Software Development/Integration.	0.676	3.611	1.492	-	1.492
Articles:	0	0	0		0
FY 2010 Accomplishments:					
Requirements identification/decomposition as well as funding a position in Huntsville, AL to serve as a liaison and integrated team member in the development of the JBC-P Core software. Federally Funded Research Center (FFRDC) software engineering support funded to provide appropriate government direction in design and development of software. Contract support funded to assist and serve as subject matter experts in this effort, as well as SPAWAR in later integration efforts.					
FY 2011 Plans:					
This effort will focus mainly on systems engineering of the next increments of this spiral/incremental acquisition including requirements analysis, documentation review and participation in Army-led engineering efforts. Requirements identification/decomposition as well as funding a position in Huntsville, AL to serve as a liaison and integrated team member in the development of the JBC-P Core software. Federally Funded Research Center (FFRDC) software engineering support funded to provide appropriate government direction in design and					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
development of software. Contract support funded to assist and serve as subject matter experts in this effort, as well as SPAWAR in later integration efforts. FY 2012 Base Plans: Personnel integrated into the software development team at the Software Engineering Directorate in Huntsville, AL in order to assist in the development and integration of the JBC-P capability. Federally Funded Research Center (FFRDC) software engineering support funded to provide appropriate government direction in design and development of software. Contract support funded to assist and serve as subject matter experts in this effort, as well as SPAWAR in later integration efforts. Existing documentation and logistics support will be analyzed for supportability of JBC-P and follow on increments of the capability and if necessary, amended or re-written					
Title: *JBC-P: Training Development. Articles:	0.285 0	0.250 0	0.150 0	-	0.150 0
FY 2010 Accomplishments: User juries and update of the existing JCR training efforts in support of the evolution to JBC-P. FY 2011 Plans: User juries and update of the existing JCR training efforts in support of the evolution to JBC-P. FY 2012 Base Plans: Existing documentation will be evaluated for re-use and updated as as JBC-P evolves. Utilizing Game-like software and Smartphone-like hardware is expected to reduce the amount of user training required for the system.					
Title: *JBC-P: Developmental Test (DT)/Operational Test (OT) Articles:	0.040 0	0.500 0	0.250 0	-	0.250 0
FY 2010 Accomplishments: Test planning and development as well participation and evaluation of s/w and some h/w test events. FY 2011 Plans: Test planning and development as well participation and evaluation of s/w and some h/w test events. FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Laboratories integrated with Huntsville Software Engineering Division (SED) and Software Engineering Institute laboratories in order to facilitate RRT, SSAT and concurrent network integration test events.						
Title: *JBC-P: System Engineering, Programmatic, and Logistics Program Support						
	Articles:	0.185 0	0.306 0	0.307 0	-	0.307 0
FY 2010 Accomplishments: Support personnel and travel.						
FY 2011 Plans: Support personnel and travel.						
FY 2012 Base Plans: Support personnel and travel.						
Title: *MAGTF C2: Engineering, research, development, integration and testing support for MAGTF release						
	Articles:	4.266 0	4.560 0	-	-	-
FY 2010 Accomplishments: Completed Preliminary Design review for System of Systems; competed technical design review of individual software components; completed coding, Unit Testing, Software Qualification Testing, integration, and initial integration of initial Service Oriented Infrastructure software build; completed initial Human Systems Interface evaluation and analysis; completed engineering testing on initial Service Oriented Infrastructure software build. Conducted initial baseline performance testing of the Service Oriented Infrastructure. Completed the development JTCW software components and began integration of build for 2011 release. Completed JITC Conformance to Standards testing. Began planning for formal testing to occur in FY11.						
FY 2011 Plans: Complete developmental of Service Oriented Infrastructure initial release; complete Information Assurance, JITC and Developmental Testing of the Service Oriented Infrastructure. Integrate into host platform and complete developmental testing. Continue decoupling of services and applications from legacy systems in order to integrate to work with the Service Oriented Infrastructure. complete systems integration and conduct developmental/operational testing. Complete developmental testing, certification and accreditation of JTCW software in order to release subsequent version during FY11.						
Title: *MAGTF C2: Engineering, research, and software development for MAGTF capability release						
	Articles:	4.092 0	3.068 0	11.759 0	-	11.759 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p><i>FY 2010 Accomplishments:</i> Initiated initial architectural development for future release; initiated requirements definition and decomposition for 2013 release; initiated efforts to begin rapid prototyping for 2013 release.</p> <p><i>FY 2011 Plans:</i> Focus of effort is initiating adaptation, development and integration of entity, task and presentation services from multiple programs of record to operate with the Service. Initiated activities to incorporate functionality from the Fires, Logistics and Intelligence communities. Funds support a completion of TSOA Build 2 and 3.</p> <p><i>FY 2012 Base Plans:</i> Focus of effort is initiating adaptation, development and integration of entity, task and presentation services from multiple programs of record to operate with the Service. Initiated activities to incorporate functionality from the Fires, Logistics and Intelligence communities. Initiate and build TSOA builds 4 and 5, with development of the MCTSSA hosted Application Store and new IA services. Builds 4 and 5 introduce the enhanced Warfighter capability, and include interfaces with other Service SOA efforts, such as SOSCOE (Army) and CANES (Navy). Also funds the C2PC PDSS contract.</p>					
<p><i>Title:</i> *MAGTF C2: Program Support. Software engineering program support</p> <p align="right"><i>Articles:</i></p>	0.900 0	1.050 0	1.050 0	-	1.050 0
<p><i>FY 2010 Accomplishments:</i> Federally Funded Research Center (FFRDC) software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight.</p> <p><i>FY 2011 Plans:</i> Federally Funded Research Center (FFRDC) software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight.</p> <p><i>FY 2012 Base Plans:</i> Federally Funded Research Center (FFRDC) software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight.</p>					
<p><i>Title:</i> *BFSA: Joint Interoperability Testing</p> <p align="right"><i>Articles:</i></p>	0.050 0	0.056 0	-	-	-
<p><i>FY 2010 Accomplishments:</i></p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued joint interoperability Certification with U.S. Army.						
FY 2011 Plans: Continue joint interoperability certification with U.S. Army.						
Title: *BFSA: Software Development and Integration.						
	Articles:	1.910 0	1.010 0	2.186 0	-	2.186 0
FY 2010 Accomplishments: Continued URN Database integration, JCR testing and integration on unique USMC platforms, SW developmental efforts for USMC specific requirements, Information Assurance activities and installation kit integration evaluation on USMC platforms.						
FY 2011 Plans: Continue URN Database integration, JCR testing and integration on unique USMC platforms, SW field user evaluation, Information Assurance activities and installation kit integration evaluation on USMC platforms. Conduct JCR SW operational test.						
FY 2012 Base Plans: Continue URN Database integration and SW developmental efforts for USMC specific requirements.						
Title: *BFSA: Test support						
	Articles:	0.074 0	0.260 0	1.134 0	-	1.134 0
FY 2010 Accomplishments: Continued engineering efforts for C2CE SW interoperability testing, DACT and JCR certification. Also, supported software (JCR) developmental testing efforts.						
FY 2011 Plans: JCR software operational testing efforts.						
FY 2012 Base Plans: JCR software operational testing efforts.						
Title: *TCO: System testing and integration to develop additional functional capabilities.						
	Articles:	0.126 0	2.140 0	2.175 0	-	2.175 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue testing as required.					
FY 2012 Base Plans: Test proof of concept.					
Title: *IDS: Concept and Technology Development Description: Background information: On 6 July 2009, USD AT&L issued an ADM in which he emphasized the ACAT 1 - Special Interest designation for all DoD biometrics activities. The USD AT&L also tasked the Army, as the DoD Executive Agent for Biometrics, to conduct an Analysis of Alternatives (AoA) for the Biometric Enterprise Capability and the Biometrics Tactical Collection Devices, as well as developing an architecture into which all services and components can fit. The Army is to return to the Office of the Secretary of Defense (OSD) Biometrics Overarching Integrated Product Team (OIPT) for a review to present the initial AoA findings and a description of the biometrics enterprise architecture no later than February 2010. Based on the results of this review, the USD AT&L will consider service recommendations for new ACAT designations, milestone point of entry and delegation of MDA responsibility. FY 2010 Accomplishments: The IDS acquisition process for the Marine Corps was streamlined by basing their approach on the Army Analysis of Alternatives (AoA) for the majority of the market research required for a hardware platform solution, followed by additional testing, and a limited FUE to ensure system operational suitability prior to fielding. Integration efforts focused on integrating COTS and NDI hardware, and COTS and GOTS software for a robust open system architecture, fully compliant with Common Operating Environment standards and requirements. To the maximum extent possible, the Marine Corps utilized the same procurement solution as the Army and, where necessary, evaluated and integrated COTS/NDI systems to satisfy unique USMC requirements. Future IDS upgrades will be based on commercial technology to the maximum extent possible. At this time, there is no material solution defined.	0.991 Articles: 0	-	-	-	-
Title: *IDS: System Development and Testing FY 2011 Plans:	-	1.508 Articles: 0	0.949 0	-	0.949 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Provide system integration, testing, program support documentation and the development of a Life Cycle Cost Estimate (LCCE) FY 2012 Base Plans: Provide system integration, testing, and program support documentation.					
Title: *AFATDS: Development of BackUp Computer System (BUCS) & Software (SW) Articles:	0.200 0	0.200 0	-	-	-
FY 2010 Accomplishments: Improvements to data computations for USMC Expeditionary Fire Support System (EFSS). Improvements to survey and meteorological software and new technical manuals. FY 2011 Plans: Improvements to data computations for new munitions for EFSS. Communications improvements to incorporate new radios procured by USMC.					
Title: *AFATDS: Software Development, Testing, and Integration Articles:	3.506 0	3.579 0	-	-	-
FY 2010 Accomplishments: Continued development of Increment I capabilities. Improved data computations for new munitions for EFSS. Incorporated Ground Counter Fire System (GCFS) acoustic sensor and Ground/Air Task Oriented Radar (G/ATOR) parameters. Modified schedule of fires processing for Smart Cannons (M777A2). Implemented AN-PRC117F/148/1532 radio configurations. Continued AFATDS Mobile Tactical Shelter (MTS) integration testing. FY 2011 Plans: Continue development of Increment I capabilities. Implement AN-PRC117G radio configurations. Develop "Ease-of-Use" features to improve user-interface.					
Title: *AFATDS: Program Management, Engineering. Information Assurance Support Articles:	0.572 0	0.900 0	-	-	-
FY 2010 Accomplishments:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Information Assurance Certification and Accreditation to ensure confidentiality, integrity, and availability of AFATDS as well as obtain Authority to Operate (ATO) and Authority to Connect (ATC) to the Marine Corps Enterprise Network (MCEN). FY 2011 Plans: Information Assurance Certification and Accreditation to ensure confidentiality, integrity, and availability of AFATDS as well as obtain Authority to Operate (ATO) and Authority to Connect (ATC) to the Marine Corps Enterprise Network (MCEN).					
Title: *AFATDS: MCTSSA/MCOTEA testing new Software (SW) Articles:	0.250 0	0.250 0	-	-	-
FY 2010 Accomplishments: Conducted Engineering User Evaluations and software test support. FY 2011 Plans: Continue Engineering User Evaluations and software test support.					
Title: *AFATDS: USMC and Joint Systems. Enhancement to EMT and C2PC interface. Articles:	0.304 0	0.308 0	-	-	-
FY 2010 Accomplishments: Interoperability testing with Joint Tactical Common Operational Picture (COP) Workstation (JTCW) software. FY 2011 Plans: Continued interoperability testing with JTCW software and explore solution for AFATDS JTCW interface when U.S. Army integrates EMT into Command Post Of the Future (CPOF) system.					
Title: *TLDHS: Software Development, New Functionality and Sustainment Articles:	3.471 0	0.878 0	0.831 0	-	0.831 0
FY 2010 Accomplishments: Commercial Joint Mapping Tool Kit (CJMTK)/ Situational Awareness Data Link (SADL), LINK16, 6017A message implementation. True North Laser Range Finder software integration and Combat Net Radio (CNR) timing studies. FY 2011 Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Net Enabled Weapons (NEW) implementation/ AODB and TBMCS implementation/ Assault Support implementation/ Additional Link16 message implementation, Variable Message Format (VMF) implementation, Digital Aided Close Air Support (DACAS) messaging implementation, and Short Range Tomahawk software integration. FY 2012 Base Plans: Continuation of Net Enabled Weapons (NEW) implementation/ AODB and TBMCS implementation/ Assault Support implementation/ Additional Link16 message implementation, Variable Message Format (VMF) implementation, Digital Aided Close Air Support (DACAS) messaging implementation, and Short Range Tomahawk software integration.					
Title: *TLDHS: Test Development and Integration Support Articles:	0.342 0	0.108 0	0.216 0	-	0.216 0
FY 2010 Accomplishments: Commercial Joint Mapping Tool Kit (CJMTK)/ Situational Awareness Data Link (SADL), Link16, 6017A, True North Laser Range Finder, and Combat Net Radio (CNR)software testing. FY 2011 Plans: Net Enabled Weapons (NEW), AODB and TBMCS, Assault Support, Link16, Variable Message Format (VMF), Digital Aided Close Air Support (DACAS), and Short Range Tomahawk software testing. FY 2012 Base Plans: Continue Net Enabled Weapons (NEW), AODB and TBMCS, Assault Support, Link16, Variable Message Format (VMF), Digital Aided Close Air Support (DACAS), and Short Range Tomahawk software testing.					
Accomplishments/Planned Programs Subtotals	22.782	25.747	24.024	-	24.024

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/4631001: <i>AFATDS</i>	15.685	12.057	2.487	0.000	2.487	22.661	24.022	2.667	2.712	Continuing	Continuing
• PMC/4631002: <i>BFSA</i>	18.800	13.730	57.092	94.472	151.564	56.950	57.561	55.466	55.791	Continuing	Continuing
• PMC/4631003: <i>TCO</i>	0.772	30.262	15.079	0.000	15.079	13.686	8.658	9.355	9.513	Continuing	Continuing
• PMC/4631005: <i>TLDHS</i>	10.149	5.298	7.093	0.000	7.093	3.041	2.119	2.187	2.224	Continuing	Continuing
• PMC/4631006: <i>JBCP</i>	0.000	0.000	1.125	0.000	1.125	27.242	28.451	0.000	0.000	Continuing	Continuing

UNCLASSIFIED

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012	FY 2012	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC/643800: <i>IDS</i>	0.000	0.000	1.808	0.000	1.808	3.633	4.452	4.335	4.409	Continuing	Continuing

D. Acquisition Strategy

TLDHS: The acquisition of components (software/hardware) for the TLDHS initiative will maximize the use of existing COTS, GOTS, NDI and GFE. Software development is conducted utilizing a sole source small-business contract. Software must maintain compatibility with 5 POR and 7 Operational Flight Programs (OFP).

AFATDS: AFATDS is a Cost Plus Award Fee contract through Army CECOM, Ft. Monmouth, NJ. R&D efforts will be a combined effort between the software developer (Raytheon), the Army PM and the USMC of software enhancements for the next planned versions of AFATDS.

TCO: Contracting is done with various vendors for software test and integration, COTS evaluation and documentation to develop advanced concepts and additional functional capabilities. The PMO conducts quarterly performance reviews. Specific hardware is also procured for test purposes which include environmental, shock, compatibility and interoperability testing.

MAGTF C2 SA: MAGTF C2 SA is delivering command and control capabilities through tri-annual software releases (with major releases in FY11, FY13, and FY15) through multiple programs of record. Currently the initial focus is on modifying JTCW software and providing a common software infrastructure through which services and applications from other programs of record can begin the process of interfacing with in order to maximize software commonality across echelons and missions. The long term goal is a software capability that will enable data discovery and data sharing across mission areas, a common standards-based viewer, core services and applications, and access to the GIG and other Joint networks, data and services.

BFSA: The BFT FoS is leveraging an Army (Force Battle Command XXI Brigade and Below (FBCB2)) ACAT 1C program to deliver a critical battlefield command and control system to the operating forces. These systems operate on both a terrestrial and celestial network and enable tactical units to move more effectively by providing friendly unit identification and location, as well as friendly intent and status. The current focus is on testing and evaluating improved SW which will make possible type-1 encryption and a greater bandwidth network. The long term goal is a secured reduced latency system that will greatly improve the battlefield commander's situational awareness and reduce the potential of fratricide.

JBC-P: Currently, PM FBCB2/BFT is using a broadly defined projected schedule for JBC-P. The Marine Corps' program office will continue to work with the FBCB2 program office in the development of a detailed program schedule. PM FBCB2/BFT will fund research and development for JBC-P unless there are Service unique requirements, which the Marine Corps program office will fund. The Marine Corps' program office will participate in all design and readiness reviews and a joint IOT&E will be conducted.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TLDHS	C/CPFF	Stauder Tech:St. Louis, MO	14.533	0.878	Feb 2011	1.047	Jan 2012	-		1.047	Continuing	Continuing	Continuing
AFATDS	C/CPAF	Raytheon:Fort Wayne, IN	18.887	3.767	Mar 2011	-		-		-	Continuing	Continuing	Continuing
C2PC	C/CPIF	NGMS:San Diego	16.173	-		-		-		-	0.000	16.173	
MAGTF C2	C/CPIF	NGMS:San Diego	12.212	-		-		-		-	0.000	12.212	
MAGTF C2	MIPR	SPAWAR:Charleston, SC	26.394	4.380	Mar 2011	3.276	Nov 2011	-		3.276	Continuing	Continuing	Continuing
MAGTF C2	WR	NSWC:Panama City, FL	0.460	-		-		-		-	Continuing	Continuing	Continuing
MAGTF C2	C/CPFF	GD:Scottsdale, AZ	18.160	-		-		-		-	0.000	18.160	
MAGTF C2	C/CPFF	Viecore:NJ	0.402	-		-		-		-	0.000	0.402	
MAGTF C2	C/CPFF	MCSC:Quantico, VA	6.146	0.948	Feb 2011	1.303	Feb 2012	-		1.303	Continuing	Continuing	Continuing
MAGTF	C/CPFF	TBD:TBD	-	1.500	Mar 2011	6.330	Dec 2011	-		6.330	0.000	7.830	
BFSA	WR	SPAWAR:Charleston, SC	3.343	1.016	Mar 2011	0.800	Nov 2011	-		0.800	Continuing	Continuing	Continuing
BFSA	MIPR	CECOM:Ft. Monmouth, NJ	1.004	-		2.420	Jan 2012	-		2.420	0.000	3.424	
TCO	MIPR	SPAWAR:Charleston, S.C.	4.653	2.345	Mar 2011	2.630	Dec 2011	-		2.630	Continuing	Continuing	Continuing
JBC-P	WR	SPAWAR:Charleston, SC	0.200	0.600	Mar 2011	0.600	Dec 2011	-		0.600	Continuing	Continuing	Continuing
IDS	WR	SPAWAR:Charleston, SC	0.991	1.508	Nov 2010	0.949	Jan 2012	-		0.949	0.000	3.448	
Subtotal			123.558	16.942		19.355		-		19.355			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	WR	MCTSSA:Camp Pendleton, CA	1.445	0.200	Oct 2010	0.400	Oct 2011	-		0.400	Continuing	Continuing	Continuing
JBC-P	C/FFP	MCSC:Quantico, VA	1.578	2.761	Mar 2011	0.542	Mar 2012	-		0.542	Continuing	Continuing	Continuing
AFATDS	C/CPFF	MCSC:Quantico	1.935	0.320	Mar 2011	-		-		-	0.000	2.255	
Subtotal			4.958	3.281		0.942		-		0.942			

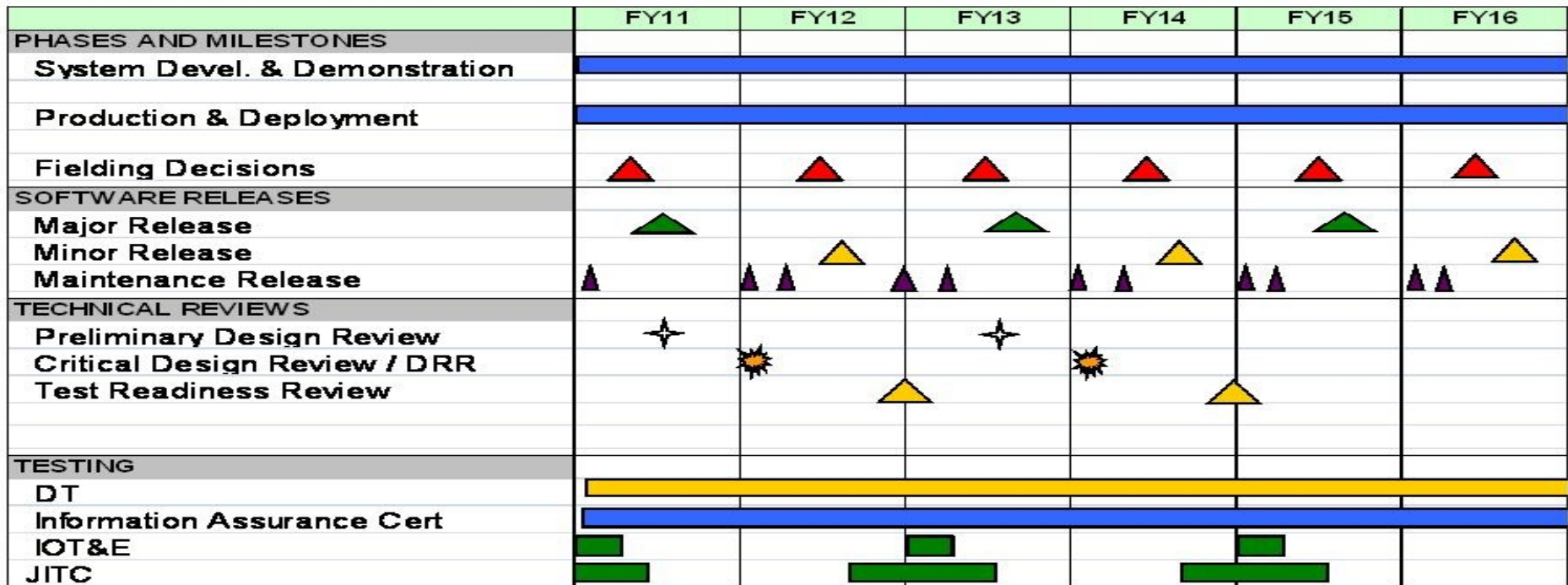
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TLDHS	WR	MCOTEA:Quantico, VA	1.527	0.108	Mar 2011	-		-		-	Continuing	Continuing	Continuing
AFATDS	WR	MCTSSA:Camp Pendleton, CA	2.431	0.150	Mar 2011	-		-		-	Continuing	Continuing	Continuing
AFATDS	WR	MCOTEA:Quantico, VA	0.580	0.100	Mar 2011	-		-		-	Continuing	Continuing	Continuing
AFATDS	WR	SPAWAR:Charleston, SC	1.778	0.900	Dec 2010	-		-		-	0.000	2.678	
MAGTF C2	WR	MCOTEA:Quantico, VA	0.657	0.100	Oct 2010	0.100	Oct 2011	-		0.100	Continuing	Continuing	Continuing
MAGTF C2	WR	MCTSSA:Camp Pendleton, CA	1.984	0.400	Nov 2010	0.200	Feb 2012	-		0.200	Continuing	Continuing	Continuing
MAGTF C2	MIPR	JITC:Ft. Huachuca, AZ	0.300	0.100	Feb 2011	0.150	Feb 2012	-		0.150	Continuing	Continuing	Continuing
BFSA	WR	MCTSSA:Camp Pendleton, CA	0.274	0.100	Jan 2011	0.100	Jan 2012	-		0.100	Continuing	Continuing	Continuing
BFSA	WR	MCOTEA:Quantico, VA	1.135	0.160	Nov 2010	-		-		-	Continuing	Continuing	Continuing
BFSA	MIPR	DISA:Ft. Huachuca, AZ	-	0.050	Jan 2011	-		-		-	Continuing	Continuing	Continuing
DACT	WR	MCOTEA:Quantico, VA	0.468	-		-		-		-	0.000	0.468	
JBC-P	C/CPFF	MCOTEA:Quantico, VA	-	0.250	Mar 2011	0.100	Dec 2011	-		0.100	Continuing	Continuing	Continuing
JBC-P	WR	MCTSSA:Camp Pendleton, CA	-	0.250	Mar 2011	0.150	Dec 2011	-		0.150	Continuing	Continuing	Continuing
TCO	MIPR	SPAWAR:Charleston, SC	0.232	1.000	Mar 2011	1.070	Dec 2011	-		1.070	0.000	2.302	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

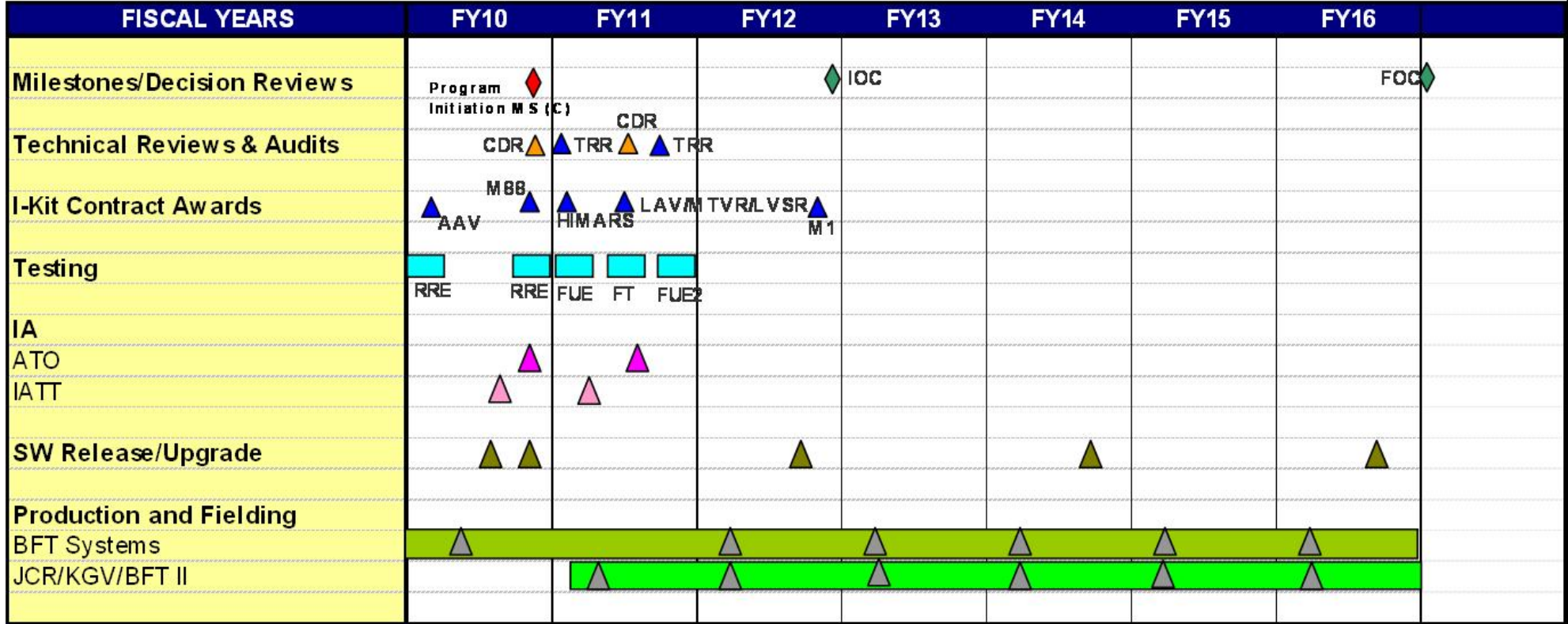
MAGTF C2 SA Program Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

BFSA Project Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

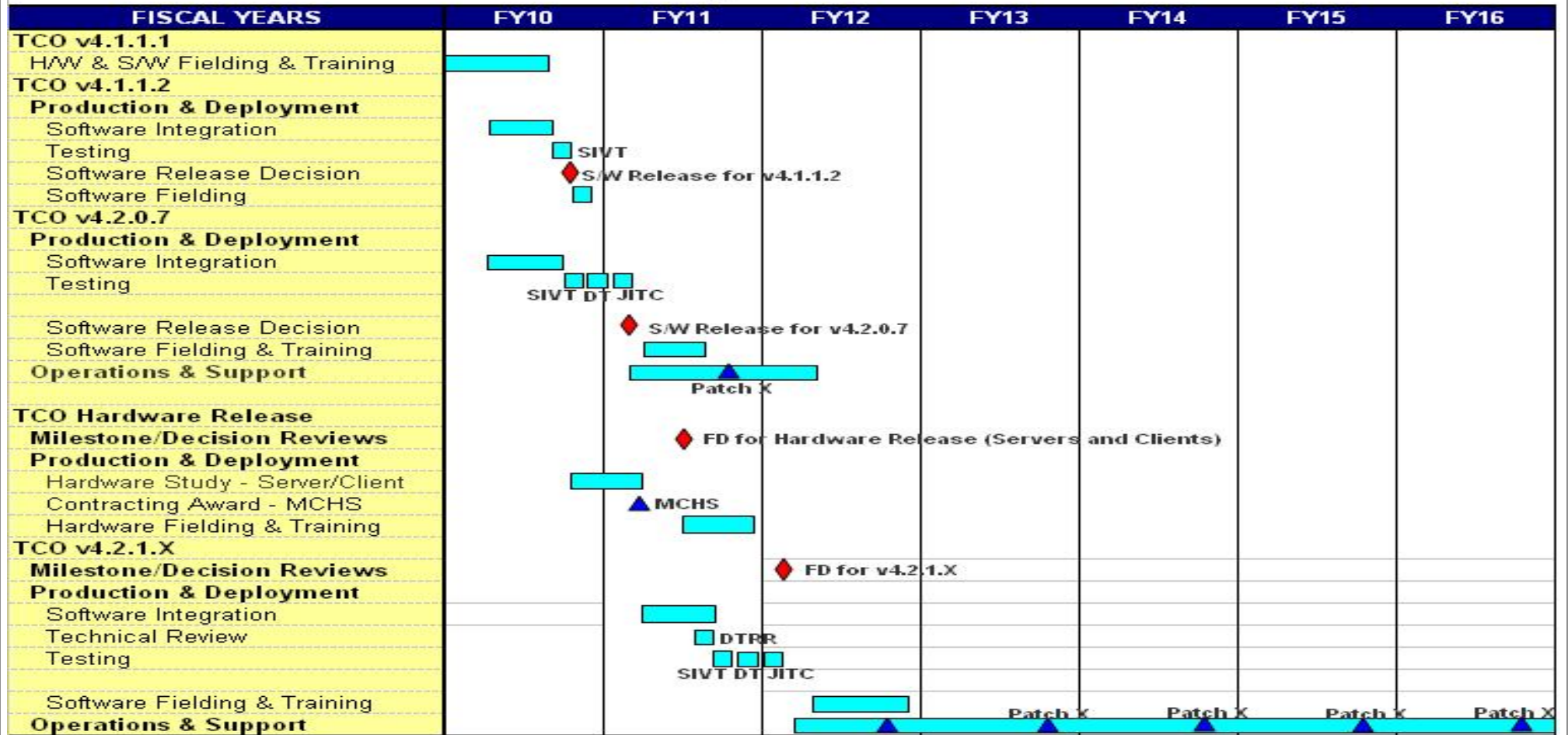
DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 2270: Exp Indirect Fire Gen Supt Wpn Sys

TCO Program Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

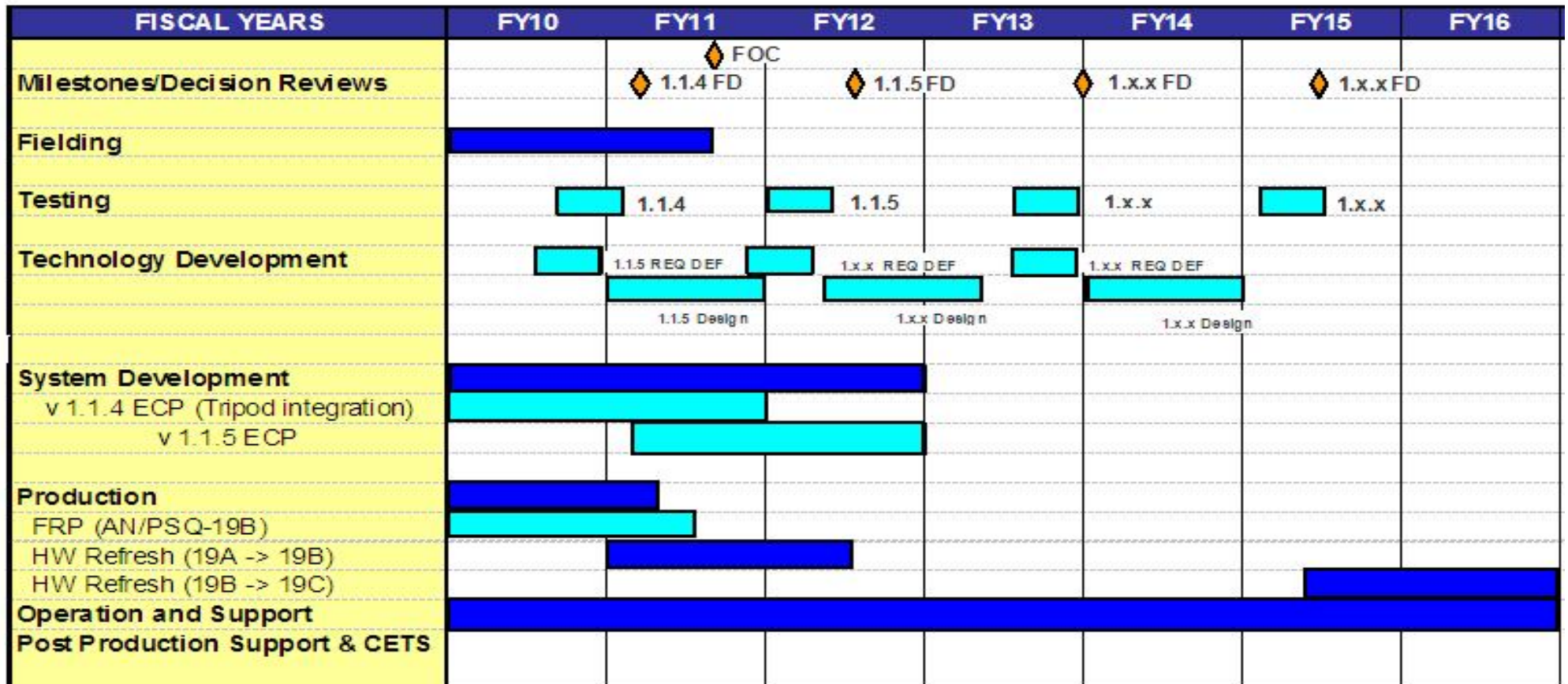
DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 2270: Exp Indirect Fire Gen Supt Wpn Sys

TLDHS Program Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

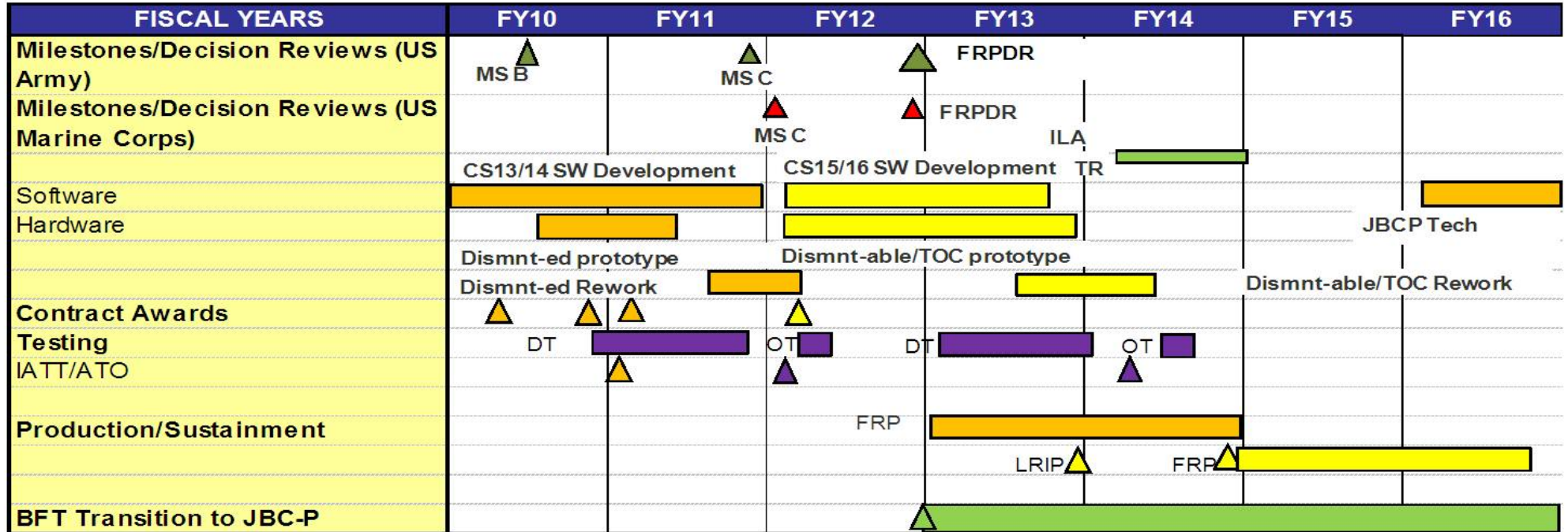
DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 2270: Exp Indirect Fire Gen Supt Wpn Sys

JBC-P Schedule



Dark Green: Army
 Red: USMC
 Orange: CS 13/14
 Yellow: CS 15/16
 Purple: External Interdependency

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2270				
MAGTF C2 SA Capability Block 2010 Release	3	2011	3	2011
JBC-P CS 13/14 S/W Development	1	2010	4	2011
JBC-P Handheld Prototype Analysis	3	2010	2	2011
JBC-P Vehicle H/W Prototype/Test/Integration	4	2010	1	2012
JBC-P MS C	1	2012	1	2012
JBC-P LRIP Handheld	2	2012	2	2012
JBC-P CS 15/16 S/W Development	1	2012	3	2013
JBC-P FRPDR	4	2012	4	2012
JBC-P DT/OT Beacons	1	2013	3	2014
TCO 4.2 S/W Fielding	4	2010	3	2011
TCO NET S/W Training & Site Support	4	2010	3	2013
TCO Replenish the Fleet (RTF)	2	2011	2	2011
TCO Contract Award (MCHS)	3	2012	3	2012
TCO IA	4	2012	1	2013
TCO Hardware Refresh/SW Fielding 1	1	2013	3	2013
TCO Hardware Refresh/SW Fielding 2	2	2016	4	2016
MAGTF C2 SA Capability Block 2012 Release	3	2013	3	2013
MAGTF C2 SA Capability Block 2015 Release	3	2015	3	2015
AFATDS BCI0 (6.6) SW Delivery	2	2010	3	2010
AFATDS BC11(6.7) Development/Testing	1	2010	3	2011
AFATDS BC13(6.8) Development/Testing	1	2010	1	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AFATDS BC15(6.9) Development/Testing	1	2012	1	2015
AFATDS Increment 2 Development/Testing	1	2014	4	2016
AFATDS MTS Fielding	4	2011	4	2015
BFSA JCR Developmental Test	4	2010	4	2010
BFSA JCR Field Test	2	2011	2	2011
BFSA JCR Field User Evaluation 1	1	2011	1	2011
BFSA JCR Field User Evaluation 2	4	2011	4	2011
BFSA BFT-II FRP	2	2012	2	2013
TLDHS Testing 1.1.4	3	2010	1	2011
TLDHS Testing 1.1.5	1	2012	2	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2273: <i>Air Ops Cmd & Control (C2) Sys</i>	62.832	68.465	65.963	1.500	67.463	116.544	79.435	81.075	36.708	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Common Aviation Command and Control System (CAC2S) is a coordinated modernization effort to replace the existing aviation command and control equipment of the Marine Air Command and Control System (MACCS) and to provide the Aviation Combat Element with the necessary hardware, software, equipment, and facilities to effectively command, control, and coordinate aviation operations. The CAC2S system will accomplish the MACCS missions with a suite of operationally scalable modules to support the Marine Air Ground Task Force (MAGTF), Joint, and Coalition Forces. The CAC2S integrates the functions of aviation command and control into an interoperable system that will support the core competencies of all Marine Corps warfighting concepts. The CAC2S, in conjunction with MACCS organic sensors and weapons systems, supports the tenets of Expeditionary Maneuver Warfare and fosters joint interoperability. CAC2S Increment I will replace legacy aviation command and control systems in the following Marine aviation agencies: Direct Air Support Center (DASC), Tactical Air Command Center (TACC), and Tactical Air Operations Center (TAOC).

Theater Battle Management Core System (TBMCS) - Joint mandated Air War planning tool for the generation, dissemination and execution of the Air Tasking Order (ATO). TBMCS is an Air Force lead program, which provides the automated tools necessary to manage tactical air operations, execute area air defense and airspace management in the tactical area of operation, and coordinate operations with components of other military services. TBMCS is located at the Tactical Air Command Center (TACC), with remotes located throughout the Marine Air Ground Task Force (MAGTF). It is scalable, allowing for joint, coalition and service specific operations. It is an evolutionary acquisition program. Funds are for New Equipment training and On-Site fielding reps to support updated software and hardware fieldings, and to procure new hardware for TBMCS to leverage new technology and maintain relevance and capability.

The Composite Tracking Network (CTN) - will provide the Marine Air Ground Task Force (MAGTF) Commander a ground based sensor netting solution that significantly improves situational awareness by correlating sensor measurement data (target position, speed, heading, Identification Friend and Foe (IFF), etc.) from local and remote radars in the Cooperative Engagement Capability (CEC) network, which is then provided to the warfighter in the form of composite, real-time, air surveillance tracks.

The Marine Air Command and Control System (MACCS) Sustainment - consists of various command and control agencies designed to provide the Aviation Combat Element (ACE) commander with the ability to monitor, supervise and influence the application of Marine aviation assets in support of MAGTF operations. The MACCS Sustainment provides funding to keep these fielded systems ready, relevant and capable until their functions are replaced by the Common Aviation Command and Control System (CAC2S).

Single Integrated Air Picture (SIAP) - is the product of fused, common, continual, unambiguous tracks of airborne objects within the surveillance area. A SIAP will be achieved through the use of a model-based architecture computerized specification (the Integrated Architecture Behavior Model, or IABM). The IABM provides the

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

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common architectural standard (Platform-Independent Model, or PIM) for systems that make up the joint SIAP SoS. Each of the Services, through their respective SIAP program offices, develops Platform-Specific Models (PSM) of the IABM that are used to develop SIAP solutions for incorporation into Service-designated platforms.

Joint Cooperative Target ID Ground (JCTI-G), formerly known as Battlefield Target Identification Device (BTID) has been re-focused per DEPSECDEF guidance. The program has been changed from vehicle-vehicle Cooperative Target ID (CTI) to Fires on Dismounts CTI and Air-Ground CTI to meet the needs of the current fight. To support this direction, an Analysis of Alternatives (AoA) was initiated during FY10 based on guidance provided by the Vice Chief of Staff of the Army (VCSA) and Assistant Commandant of the Marine Corps (ACMC) and is being led by Joint Forces Command (JFCOM). Simultaneous efforts will include: Dismount CTI technology development/technology maturation and technology down-select and preparing acquisition documentation to support an FY12 MS A decision.

Combat Operations Center (COC) AN/TSQ-239 (V)2/3/4 is a deployable, self-contained, modular, scalable and centralized facility which provides digital, shared Command and Control/Situational Awareness functionalities to enhance the Common Operational Picture (COP) for the Command Element, Ground Command Element, Air Combat Element, and Logistics Combat Element. It is a commercial-off-the-shelf integrated hardware solution using unit provided radios, re-hosted tactical data systems, and available Marine Corps prime movers to transport the system. FY10 funds required for H/W refresh. Funding also supports 2 MEB Urgent Universal Needs Statement (UUNS) (Mar 09) to include OEF supplemental kits of various configurations, Tactical Collaboration Work Station (TCWS) integration (MCCDC) LOC and OIF Force retrograde. FY11 and FY12 funds support testing and IA certification activities of MODEL G, (V)1 and OTM capabilities.

Remote Video Viewing Terminal (RVVT) - Provides warfighter with video connectivity to multiple types of aerial platforms (Pioneer, Dragon Eye, Raven B, Shadow, Predator, Fire Scout, and Litening Pod on P-3, AV8-B, and F/A-18). Data is displayed to Regimental Combat Teams and Forward Air Controller operators who coordinate with higher headquarters for fires. This is a New Start for FY10. Program Office is pursuing a MS B in FY11. Product is intended to fit into the cargo pocket of the uniform in order to reduce the size of the receivers.

Joint Interface Control Office (JICO) Support System (JSS) - will provide net-centric services through a transformational management system to enable internet protocol-based networks of the future to operate efficiently with current tactical networks. It will manage complex tactical networks through an automated toolset and information repository that enables planning, management and analysis of tactical data link communications before, during and after operations.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *JICO Support System: Software Sustainment & Integration Support	0.090	-	-	-	-
Articles:	0				
FY 2010 Accomplishments: Funding sent to the Joint program office to support production software integration for USMC systems					
Title: *JICO Support System: Program Management Support	0.387	0.489	0.498	-	0.498
Articles:	0	0	0		0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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<i>FY 2010 Accomplishments:</i> Program Office travel, MCTSSA and MCOTEA supported Multi-Surface Operational Test and Evaluation, and Information Assurance.					
<i>FY 2011 Plans:</i> Program Office travel. MCTSSA support for Increment 2 development.					
<i>FY 2012 Base Plans:</i> Program Office travel as an active participant "seat at the table" at USAF to support Increment 2 development.					

<i>Title:</i> *BTID: System Product Development	-	16.500	17.373	-	17.373
<i>Articles:</i>		0	0		0

<i>FY 2011 Plans:</i> Per DEPSECDEF (DSD) guidance, refocus JCTI-G from vehicle-vehicle Cooperative Target ID (CTI) to Fires on Dismounts CTI and Air-Ground CTI to meet the needs of the current fight. To support this direction, efforts will include: Dismount CTI technology development/technology maturation to and technology down-select and preparing acquisition documentation to support an FY12 MS A decision.					
<i>FY 2012 Base Plans:</i> Continue Technology Development and the maturing process with multiple contractors providing systems that support DSD guidance and objectives. This effort will require a minimum of six to eight contractors whose products can meet Technology Readiness Assessment goals that will define a maturity level required in a field evaluation under realistic conditions in FY12.					

<i>Title:</i> *BTID: Management Services	-	3.874	3.874	-	3.874
<i>Articles:</i>		0	0		0

<i>FY 2011 Plans:</i> Conducted Pre-Milestone A activities and conducted Phase 1 of the AoA Study. Per DEPSECDEF (DSD) guidance, refocus JCTI-G from vehicle-vehicle Cooperative Target ID (CTI) to Fires on Dismounts CTI and Air-Ground CTI to meet the needs of the current fight. To support this direction, efforts will include: Dismount CTI technology development/technology maturation to and technology down-select and preparing acquisition documentation to support an FY12 MS A decision.					
<i>FY 2012 Base Plans:</i>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue development/technology maturation and prepare for MS A decision. Title: *COC: Continued Capability Solution					
Articles:	8.359 0	0.707 0	5.857 0	-	5.857 0
FY 2010 Accomplishments: Complete Model G design, and ECP documentation.					
FY 2011 Plans: Complete Model G design, documentation, and testing.					
FY 2012 Base Plans: Complete (V)1 and OTM design, documentation, and testing.					
Title: *COC: Test and Evaluation	-	0.340 0	0.340 0	-	0.340 0
Articles:					
FY 2011 Plans: Funded MCOTEJA/JTIC for initial planning of Model G testing.					
FY 2012 Base Plans: Funded MCOTEJA/JTIC for initial planning of (V)1 and OTM testing.					
Title: *CTN: Engineering Development Model (EDM).	4.995 0	0.380 0	0.200 0	-	0.200 0
Articles:					
FY 2010 Accomplishments: Funds used for CEC WASP Development and AC2, GATOR, Remote Sensor Controls over DDS, & Mode 5 Adaptive Layer Development.					
FY 2011 Plans: Funds to be used for CEC WASP Development.					
FY 2012 Base Plans: Funds to be used for CEC WASP Development.					
Title: *CTN: Certification of Interfaces	5.219 0	2.792 0	4.605 0	-	4.605 0
Articles:					
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Funds used for MTAOM, MCOTEA, Test Asset upgrade, COE Demo, 3 DELRR, Configuration Design Study, Data Collection Analysis, JITC and FOT&E.</p> <p>FY 2011 Plans: To be used for Data Collection Analysis, SW Configuration Management, FOT&E.</p> <p>FY 2012 Base Plans: To be used for Data Collection Analysis, SW Configuration Management, FOT&E.</p>					
<p>Title: *CTN: Program Management Support.</p> <p align="right">Articles:</p>	1.420 0	1.020 0	1.916 0	-	1.916 0
<p>FY 2010 Accomplishments: Funds used for MCSC Travel, System Engineering Support, Testing & Evaluation Support, Information Analysis Support, CM Support, and Logistics.</p> <p>FY 2011 Plans: Funds to be used for MCSC Travel, TSC support, Operational Test support, CM support, and SW support.</p> <p>FY 2012 Base Plans: Funds to be used for MCSC Travel, TSC support, Operational Test support, CM support, and SW support.</p>					
<p>Title: *MACCS SUSTAINMENT: TAOM, ADCP and CDLS.</p> <p align="right">Articles:</p>	1.157 0	1.158 0	3.707 0	1.500 0	5.207 0
<p>FY 2010 Accomplishments: Design and prototype modification kits for Commercial Item Technology Refresh for TAOM, SAAWF, TIU and MCIU.</p> <p>FY 2011 Plans: Design and prototype modification kits for Commercial Item Technology Refresh for TAOM, SAAWF, TIU and MCIU.</p> <p>FY 2012 Base Plans: Conduct SFT and field 4 new CDLS to each TACC; test and field ADSI v.15; integrate Mode5/S into the TAOM; monitor the DSAN Life Cycle Support (LCS) contract; and repair/replace MERWS and 3:1 shelters as required.</p> <p>FY 2012 OCO Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>		PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Migrate the TAOM/MTAOM software baseline from CMS to C++, conduct test and field software baseline as v.7.0.					
Title: *RVVT: Preparation of MS C and Full Rate Production and Fielding activities	0.614	0.467	0.740	-	0.740
Articles:	0	0	0		0
FY 2010 Accomplishments: Continued Pre-Milestone B activities (Acquisition Plan, Source Selection Plan, FRP). Material Development Decision (AOA Study Plan and Statement of Need).					
FY 2011 Plans: Continue Pre-Milestone B activities (Acquisition Plan, Source Selection Plan, FRP).					
FY 2012 Base Plans: Complete Pre-Milestone B activities (Acquisition Plan, Source Selection Plan, FRP). Start preparation of Milestone C.					
Title: *TBMCS: Program management support.	0.617	0.454	0.463	-	0.463
Articles:	0	0	0		0
FY 2010 Accomplishments: Program Management support.					
FY 2011 Plans: Program Management support.					
FY 2012 Base Plans: Program Management support.					
Title: *TBMCS: Test and Evaluation for TBMCS Upgrades Joint Interoperability.	0.150	0.100	0.120	-	0.120
Articles:	0	0	0		0
FY 2010 Accomplishments: Test and Evaluation for TBMCS Upgrades Joint Interoperability.					
FY 2011 Plans: Test and Evaluation for TBMCS Upgrades Joint Interoperability.					
FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Test and Evaluation for TBMCS Upgrades Joint Interoperability.					
Title: *CAC2S: Program Management Support. <div style="text-align: right;">Articles:</div>	3.900 0	4.200 0	2.500 0	-	2.500 0
FY 2010 Accomplishments: Program management support which includes business/financial, engineering and logistical support for Phase 1 efforts.					
FY 2011 Plans: Program management support which includes business/financial, engineering and logistical support for Phase 1 and 2 efforts.					
FY 2012 Base Plans: Program management support which includes business/financial, engineering and logistical support for Phase 1 and 2 efforts.					
Title: *CAC2S: Test and Evaluation and Information Assurance Certification. <div style="text-align: right;">Articles:</div>	2.320 0	1.950 0	2.542 0	-	2.542 0
FY 2010 Accomplishments: CAC2S: System development testing, operational assessment, and live interface testing in accordance with continued Processing and Display Subsystem interface/integration, communications subsystem interface/ interoperability validation. Additionally, regression testing following DT & OT system corrections; as well as, Information Assurance certification test scans.					
FY 2011 Plans: CAC2S: This funding will focus mainly on Information Assurance certification test scans and Phase 1 IOT&E efforts.					
FY 2012 Base Plans: CAC2S: This funding will focus mainly on Information Assurance certification test scans.					
Title: *CAC2S: EDM, TR, Gov't DT <div style="text-align: right;">Articles:</div>	13.056 0	12.542 0	4.635 0	-	4.635 0
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Design, Development and Testing of Engineering Developmental Models (EDM) for Phase 1. Funding used to fund MCOTEA, NSWC Crane and Dahlgren and IOT&E.</p> <p>FY 2011 Plans: Design, Development and Testing of Engineering Developmental Models (EDM) for Phase 2. This will be accomplished by awarding multiple contracts. Contractors will be required to produce a Sensor Data Subsystem prototype to be demonstrated to the government. Support integration testing and DT with G/ATOR and AC2. Will fund support activities NSWC Crane and Dahlgren and many other support activities.</p> <p>FY 2012 Base Plans: Once a contractor is selected from the demonstration as described under the FY11 funding, Phase 2 development and integration of the Sensor Data Subsystem into Phase 1 assets continues. Most of the funding will be expended by Phase 2 SDS contractor.</p> <p>Title: *CAC2S: Software development, DT, FUE, OA.</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Data and information fusion component hardware and software development and support of Phase 1 EDM"s, including developmental testing, field user evaluations and operational assessments.</p> <p>FY 2011 Plans: Data and information fusion component hardware and software development and support of Phase 2 EDM"s, including field user evaluations and operational assessments.</p> <p>FY 2012 Base Plans: Continued Phase 2 EDM data and information fusion component hardware and software development.</p>	15.012 0	18.170 0	12.072 0	-	12.072 0
<p>Title: *CAC2S: Engineering, Management and Logistics Support</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Engineering, Management & Logistics Support</p> <p>FY 2011 Plans: Engineering, Management & Logistics Support</p> <p>FY 2012 Base Plans:</p>	2.750 0	3.322 0	4.521 0	-	4.521 0

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Engineering, Management & Logistics Support					
Title: *SIAP: Develop Joint SIAP capability.	2.786	-	-	-	-
Articles:	0				
FY 2010 Accomplishments: Develop Joint SIAP capability.					
Accomplishments/Planned Programs Subtotals	62.832	68.465	65.963	1.500	67.463

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/4640001: CTN	24.752	15.808	7.016	0.000	7.016	0.000	0.000	0.000	0.000	Continuing	Continuing
• PMC/4640002: MACCS Sustainment	5.547	36.887	11.769	5.236	17.005	8.084	10.883	0.910	0.838	Continuing	Continuing
• PMC/4640003: TBMCS	3.455	5.986	6.580	0.000	6.580	5.859	5.215	3.881	3.947	Continuing	Continuing
• PMC/464000: BTID	0.000	1.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PMC/4190005: COC	19.028	123.200	16.755	0.000	16.755	16.454	19.912	17.385	17.685	Continuing	Continuing
• PMC/4640007: RVVT	6.305	5.643	2.923	0.000	2.923	3.068	0.000	0.000	0.000	Continuing	Continuing
• PMC/4640008: CAC2S	4.086	42.675	15.864	0.000	15.864	4.476	21.245	32.490	85.490	Continuing	Continuing
• PMC/4630001: COC	1.996	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.996	3.992
• PMC/4630002: MACCS	0.265	0.033	2.554	0.000	2.554	3.714	1.760	1.808	1.839	Continuing	Continuing

D. Acquisition Strategy

CAC2S will employ an evolutionary acquisition strategy utilizing an incremental and phased approach for development and fielding of the CAC2S. The CPD identifies two increments to achieve the full requirements of CAC2S. The current acquisition strategy addresses Increment I of the CAC2S development process and focuses on the requirements that will modernize the assault and air support, air defense and control, and ACE battle management capabilities of the MACCS. Increment I of the CAC2S will be accomplished through a two phased approach. Phase 1 will address the requirements to establish the baseline CAC2S capabilities for the MACCS and improve AC2 performance and effectiveness. Phase 2 will address the requirements for remaining ACE BMC2 requirements

Theater Battle Management Core Systems (TBMCS) - TBMCS is an ACAT III, USAF Program with joint interest/oversight. It was mandated by the Chairman, Joint Chiefs of Staff in July 93 for Air Tasking Order (ATO) Interoperability among all services. The USMC will not be letting any competitive contracts for TBMCS, but following the USAF lead, utilizing USAF TBMCS contracts and fielding only the joint modules of TBMCS. As USMC unique requirements are identified and funded,

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206313M: <i>Marine Corps Comms Systems</i>	2273: <i>Air Ops Cmd & Control (C2) Sys</i>

they will be provided to the USAF (to include funding) for inclusion within TBMCS utilizing the USAF delivery order (fixed price) contract. Over the course of the FYDP, the USMC will leverage USAF software support activities vice funding strictly USMC software support.

MACCS SUSTAINMENT - The family of systems that comprise the MACCS Sustainment program include all of the currently fielded Air Command and Control assets. These include the Tactical Air Operations Module (TAOM), Communications Data Link System (CDLS), Sector Anti-Air Warfare Facility (SAAWF), Air Defense Communication Platform (ADCP), Direct Air Support Central Airborne (DASCA), Direct Air Support Central Airborne System (DASCAS), TAOM Interface Unit (TIU), Multi-Channel Interface Unit (MCIU), Communication Interface System (CIS), Joint Tactical Information Distribution System (JTIDS), and Joint Range Extension (JRE).
CTN - The USMC's CTN acquisition strategy is to participate in the USN's program procurement and testing, making necessary modifications to support the Marine Corps' requirement.

JCTI-G - An Acquisition Strategy will be developed during FY11 with the establishment of a Joint Program Office.

RVVT - Program initiation in FY10 with entrance into the acquisition process at MS B. Anticipate MS B and initial contract award in early FY11. The program office expects to utilize a competitive acquisition approach to quickly field a capability with limited development.

COC - The Combat Operations Center (COC) AN/TSQ-239 (V)2/3/4 is the foundation of USMC C2, meeting near term communications and network requirements in OEF, OIF and GWOT. There is a continuing developmental effort to evolve the COC into a fully integrated MAGTF C2 capability. FY11 funds Model G H/W ECP kit fielding to entire AAO of 298 systems; funds three (V)1 CAPSETS in support of MEF Level COC requirement; funds procurement of 16 COC OTM kits in support of C2 OTM requirements; support H/W refresh and S/W upgrade releases. FY12 funds procurement of two additional (V)1 and H/W refresh and S/W upgrade releases.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTN	WR	NSWC:Crane, IN	3.736	-		-		-		-	0.000	3.736	
CTN	WR	NAVSEA PEO IWS:Not Specified	4.115	0.380	Jan 2011	0.200	Jan 2012	-		0.200	0.000	4.695	
MACCS Sustainment	Reqn	NGES:Woodland Hills, CA	16.436	0.979	Jun 2011	1.500	Jun 2012	-		1.500	Continuing	Continuing	Continuing
MACCS Sustainment 1	WR	NSWC:Crane, IN	1.648	0.016	Sep 2011	1.257	Oct 2011	-		1.257	0.000	2.921	
COC	WR	SPAWAR:Charleston, SC	12.279	-		-		-		-	Continuing	Continuing	Continuing
COC	Reqn	General Dynamics:Not Specified	27.811	-		-		-		-	Continuing	Continuing	Continuing
COC	Reqn	Coherent:Johnstown, PA	0.299	-		-		-		-	0.000	0.299	
COC	WR	NSWC:Crane, IN	0.220	-		1.000	Mar 2012	-		1.000	0.000	1.220	
COC	C/CPIF	TBD:Not Specified	-	0.707	Jun 2011	4.857	Jun 2012	-		4.857	0.000	5.564	
BTID	WR	NSWC:Crane, IN	3.242	2.000	Nov 2010	2.873	Nov 2011	-		2.873	Continuing	Continuing	Continuing
BTID1	WR	NAVAIR:Pax River, MD	0.145	-		-		-		-	0.000	0.145	
BTID2	Reqn	NAVAIR:Pax River, MD	1.830	-		-		-		-	0.000	1.830	
BTID	MIPR	CERDIC Army Contractor:Ft Monmouth, NJ	-	14.500	Apr 2011	14.500	Apr 2012	-		14.500	0.000	29.000	
CAC2S	WR	NSWC:Crane, IN	17.403	5.122	Oct 2010	0.750	Oct 2011	-		0.750	0.000	23.275	
CAC2S	C/CPIF	General Dynamics:Quantico, VA	8.103	0.500	Jan 2011	-		-		-	0.000	8.603	
CAC2S	C/FFP	Phase 2 Contractor:Quantico, VA	5.145	15.248	Feb 2011	15.710	Feb 2012	-		15.710	0.000	36.103	
CAC2S	WR	NSWC:Dahlgren, VA	14.943	10.576	Jan 2011	5.210	Nov 2011	-		5.210	0.000	30.729	
Subtotal			117.355	50.028		47.857		-		47.857			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTN	WR	NSWC:Dahlgren, VA	0.200	0.500	Jan 2011	0.500	Jan 2012	-		0.500	0.000	1.200	
CTN	WR	NSWC:PHD	0.224	-		-		-		-	0.000	0.224	
CTN	WR	NSWC:Crane, IN	-	0.400	Dec 2010	1.375	Dec 2011	-		1.375	0.000	1.775	
CTN	MIPR	MACCS:Quantico, VA	0.140	-		-		-		-	0.000	0.140	
CTN	WR	NAVSEA:Wallops Island, VA	0.316	-		-		-		-	0.000	0.316	
CTN	Various	Travel-TAD:Not Specified	0.105	0.120	Oct 2010	0.070	Oct 2011	-		0.070	0.000	0.295	
CTN	WR	SPAWAR:Charleston, SC	0.435	-		-		-		-	0.000	0.435	
MACCS Sustainment 1	WR	NSWC:Crane, IN	0.089	-		-		-		-	0.000	0.089	
MACCS Sustainment	Reqn	Northrop Grumman:Woodland Hills, CA	-	-		-		1.500	Nov 2011	1.500	0.000	1.500	
COC	MIPR	NUWC:Newport, RI	0.200	-		-		-		-	0.000	0.200	
BTID	Reqn	Tecolote:Arlington, VA	1.942	0.150	May 2011	0.150	May 2012	-		0.150	Continuing	Continuing	Continuing
JSS	WR	MCTSSA:Camp Pendleton Ca	0.090	0.093	Nov 2010	0.093	Nov 2011	-		0.093	0.000	0.276	
CAC2S	WR	Travel-TAD:Not Specified	0.500	0.500	Oct 2010	0.500	Oct 2011	-		0.500	0.000	1.500	
CAC2S	WR	NSWC Carderock:Carderock, MD	0.250	-		0.150	Dec 2011	-		0.150	0.000	0.400	
CAC2S	WR	JITC:Fort Huachuca, AZ	0.671	0.290	Jan 2011	-		-		-	0.000	0.961	
CAC2S	MIPR	MITRE:Boston, MA	4.063	0.800	Nov 2010	0.500	Nov 2011	-		0.500	0.000	5.363	
CAC2S	WR	MACCS-X:Camp Pendleton	1.464	0.100	Jan 2011	-		-		-	0.000	1.564	
CAC2S	WR	MCTSSA:Camp Pendleton	2.106	0.500	Jan 2011	0.500	Jan 2012	-		0.500	0.000	3.106	
CAC2S	WR		1.955	0.948	Jan 2011	0.750	Jan 2012	-		0.750	0.000	3.653	

UNCLASSIFIED

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		NSWC Corona:Corona, CA											
CAC2S	C/FP	BAH:Stafford, VA	2.003	-		-		-		-	0.000	2.003	
SIAP	C/FP	RNB Technologies:Stafford VA	5.374	-		-		-		-	0.000	5.374	
TBMCS	Various	Travel:Not Specified	-	0.050	Oct 2010	0.027	Oct 2011	-		0.027	0.000	0.077	
Subtotal			22.127	4.451		4.615		1.500		6.115			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTN	WR	MACS-24:Not Specified	0.025	-		0.025	Dec 2011	-		0.025	0.000	0.050	
CTN	WR	PEO IWS 6:St. Petersburg, FL	2.846	1.171	Dec 2010	1.993	Dec 2011	-		1.993	0.000	6.010	
CTN	WR	NSWC Corona:Corona, CA	0.714	0.400	Jan 2011	0.390	Jan 2012	-		0.390	0.000	1.504	
CTN	WR	NSWC DD:Dahlgren, VA	0.822	0.120	Jan 2011	-		-		-	0.000	0.942	
CTN	WR	Fort Huachuca:JITC	0.008	-		-		-		-	0.000	0.008	
CTN	WR	MCOTEA:Quantico VA	0.919	0.225	Feb 2011	0.309	Feb 2012	-		0.309	0.000	1.453	
CTN	WR	MCSC:Quantico, VA	3.876	-		-		-		-	0.000	3.876	
CTN	WR	NSWC:Crane, IN	0.188	0.876	Dec 2010	1.859	Dec 2011	-		1.859	0.000	2.923	
MACCS Sustainment	WR	Aberdeen Test Center:Aberdeen, MD	0.160	0.113	Nov 2010	0.100	Mar 2012	-		0.100	0.000	0.373	
MACCS Sustainment 2	Various	MCOTEA:Quantico, VA	0.630	-		0.600	Dec 2011	-		0.600	0.000	1.230	
MACCS Sustainment 1	WR	NSWC:Crane, IN	-	0.050	Dec 2010	-		-		-	0.000	0.050	
RVVT	MIPR	MCOTEA Testing:Not Specified	-	-		0.125	Nov 2011	-		0.125	0.000	0.125	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
COC	MIPR	MCOTEA:Quantico, VA	0.528	0.200	Oct 2010	0.200	Oct 2011	-		0.200	0.000	0.928	
COC	MIPR	JTIC:Not Specified	-	0.140	Mar 2011	0.140	Mar 2012	-		0.140	0.000	0.280	
BTID	WR	MCOTEA:Quantico, VA	0.180	-		-		-		-	Continuing	Continuing	Continuing
TBMCS	WR	MCOTEA:Quantico, VA	0.460	0.100	Jan 2011	0.120	Nov 2011	-		0.120	0.000	0.680	
CAC2S	WR	MCOTEA:Quantico, VA	4.950	1.400	Jan 2011	0.450	Nov 2011	-		0.450	0.000	6.800	
Subtotal			16.306	4.795		6.311		-		6.311			

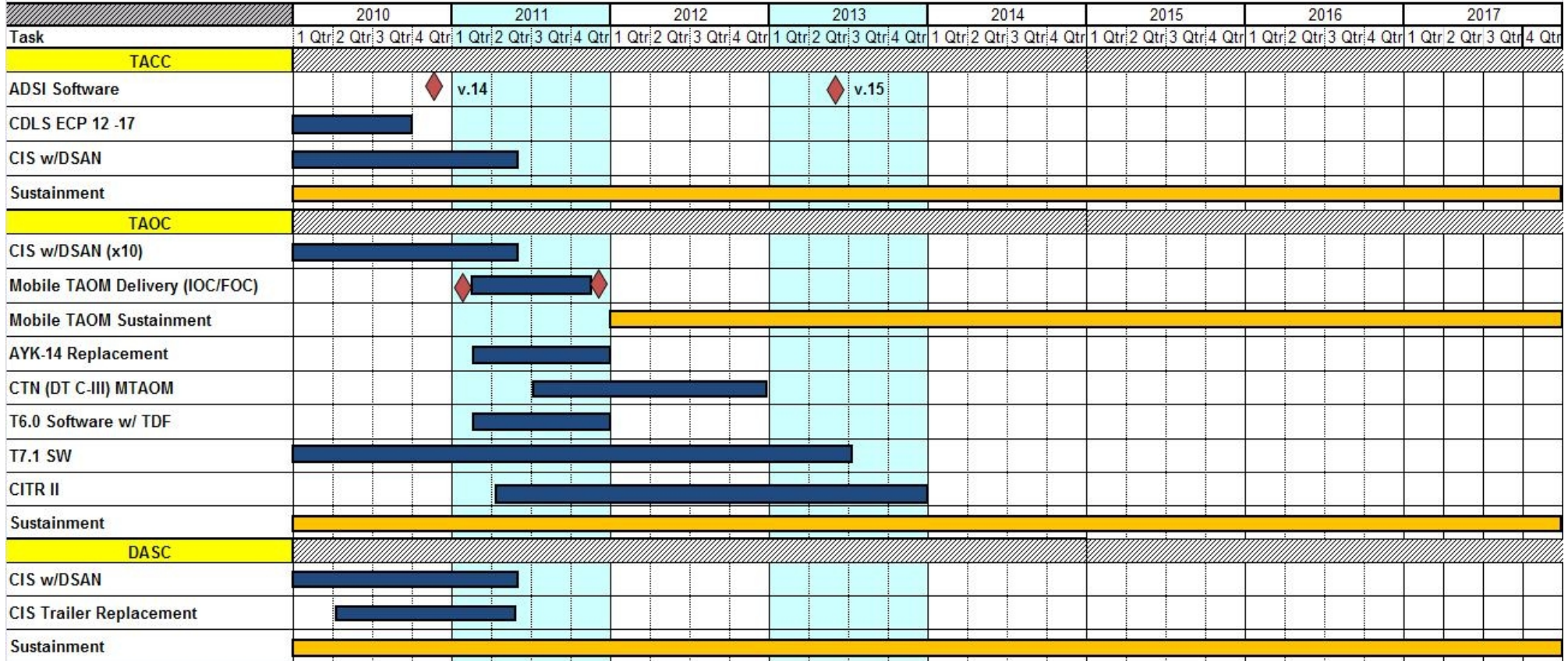
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTN	WR	MCSC:Quantico, VA	0.882	-		-		-		-	0.000	0.882	
MACCS Sustainment	C/FFP	MCSC:Quantico, VA	0.100	-		0.250	Mar 2012	-		0.250	0.000	0.350	
COC	Reqn	MCSC:Quantico, VA	0.057	-		-		-		-	0.000	0.057	
COC	Reqn	NGMS:Stafford, VA	4.053	-		-		-		-	0.000	4.053	
BTID	C/FFP	QNA:Stafford, VA	0.479	1.300	Mar 2011	1.300	Mar 2012	-		1.300	Continuing	Continuing	Continuing
BTID	C/FFP	MCSC:Quantico, VA	0.335	2.424	Mar 2011	2.424	Mar 2012	-		2.424	Continuing	Continuing	Continuing
RVVT	Various	QNA:Stafford, VA	0.447	0.467	Feb 2011	0.622	Feb 2012	-		0.622	0.000	1.536	
RVVT	Various	NAVAIR:Pax River	0.216	-		-		-		-	0.000	0.216	
CAC2S	C/FFP	QNA:Stafford, VA	9.596	4.200	Nov 2010	1.750	Nov 2011	-		1.750	0.000	15.546	
JSS	WR	Travel TAD:Not Specified	0.094	0.016	Oct 2010	0.022	Oct 2011	-		0.022	Continuing	Continuing	Continuing
JSS	Reqn	TASC:Stafford, VA	0.300	0.132	Mar 2011	0.138	Mar 2012	-		0.138	Continuing	Continuing	Continuing
JSS	WR	SPAWAR Chas:Charleston, SC	-	0.150	Mar 2011	0.150	Mar 2012	-		0.150	0.000	0.300	
JSS	WR	Hanscom AFB:Boston, MA	-	0.098	Feb 2011	0.095	Feb 2012	-		0.095	0.000	0.193	
TBMCS	C/FFP	QNA:Stafford VA	1.573	0.404	Nov 2010	0.429	Nov 2011	-		0.429	0.000	2.406	
Subtotal			18.132	9.191		7.180		-		7.180			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>

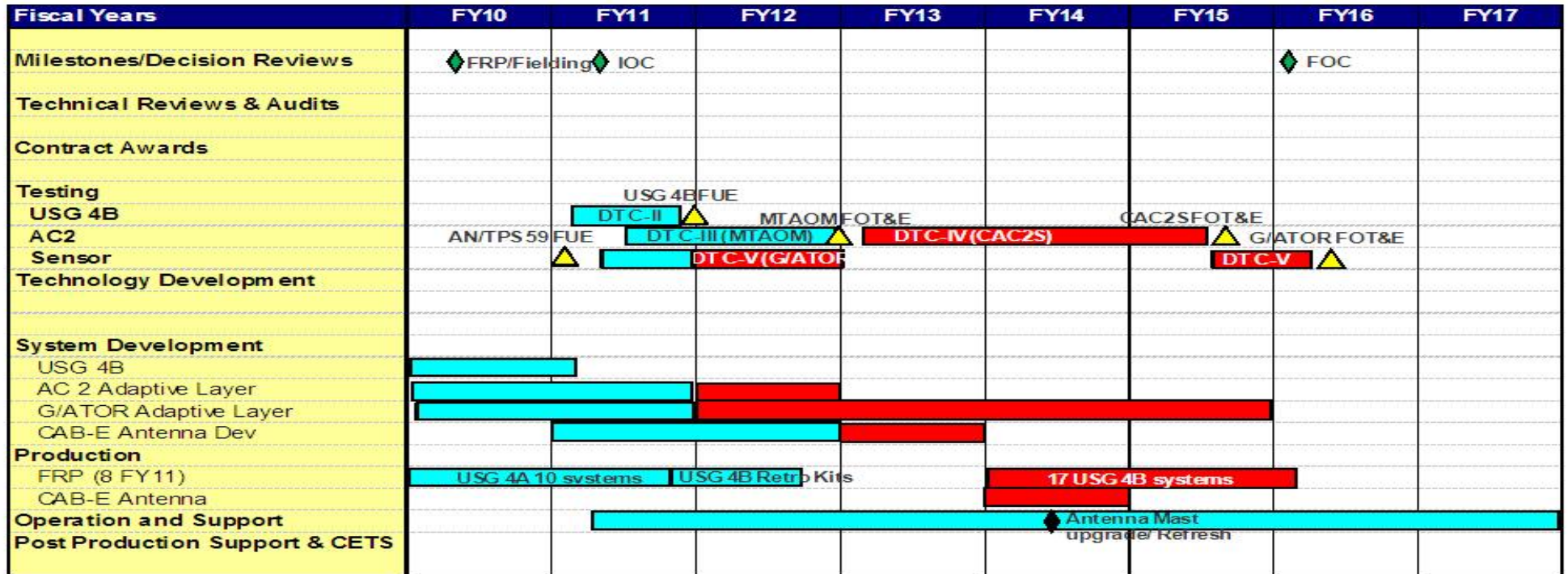
MACCS Project Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>

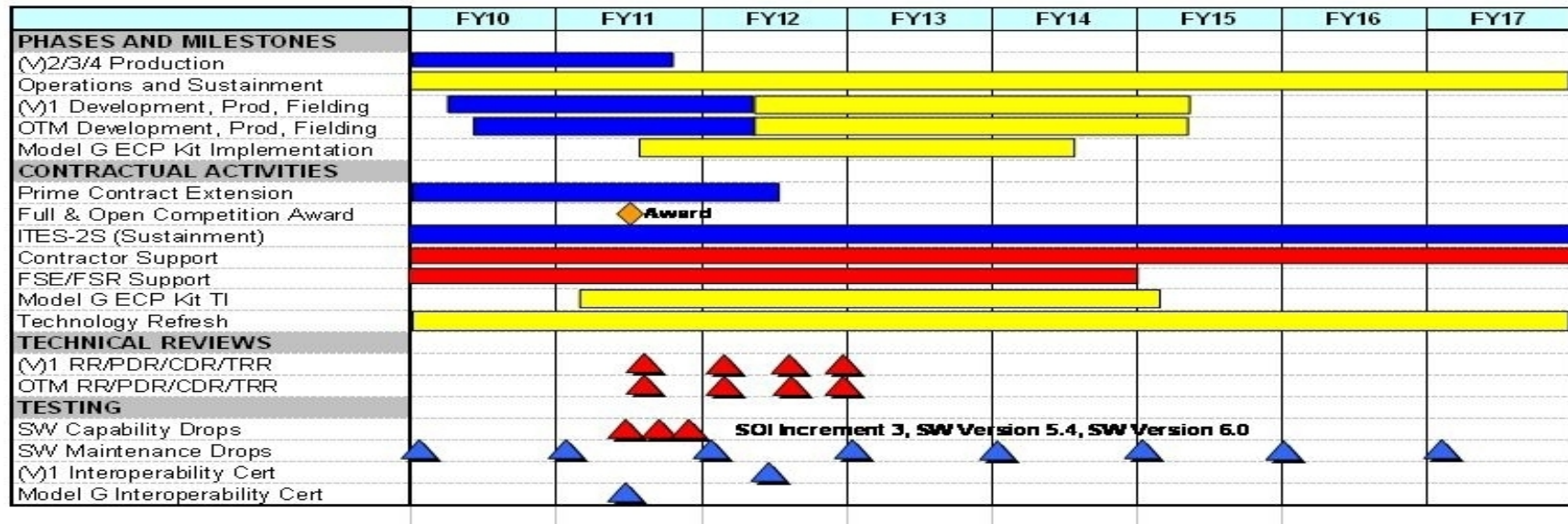
Composite Tracking Network (CTN) Program Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0206313M: Marine Corps Comms Systems	PROJECT 2273: Air Ops Cmd & Control (C2) Sys

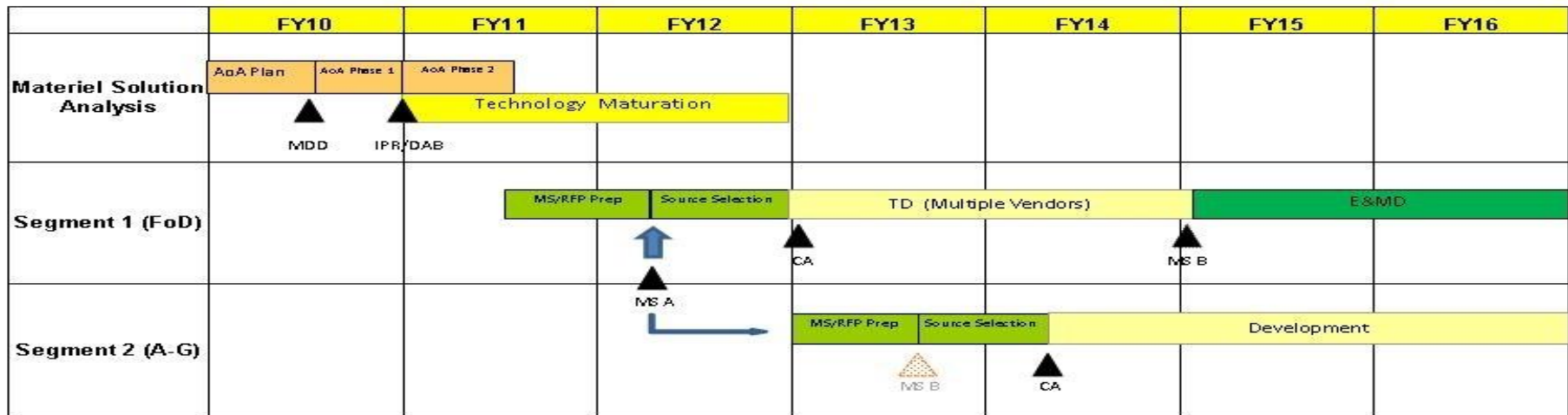
COC Program Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>

JCTI-G Schedule



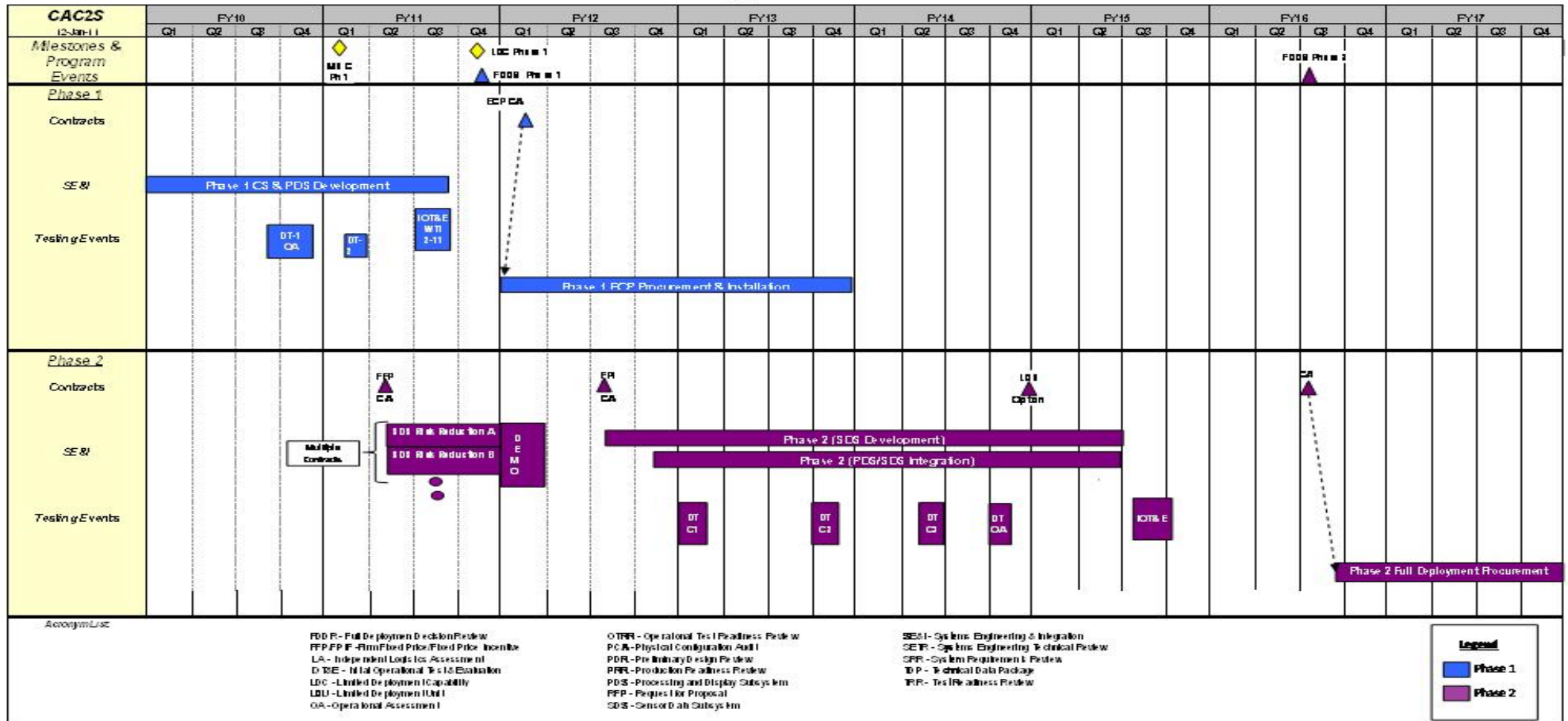
- IPR DAB following AoA Phase 1 to review recommendations and to enable continuation of appropriate technology maturation
- MS A to address Segments 1 and 2, and determine the appropriate acquisition entry point for Segment 2
- FY13 A-G MS B Dependent on Technology Maturity

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 2273: Air Ops Cmd & Control (C2) Sys

CAC2S Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2273: <i>Air Ops Cmd & Control (C2) Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2273				
MACCS Sustainment	1	2010	4	2014
MACCS - TACC ADSI Software v. 14	4	2010	4	2010
MACCS - TACC ADSI Software v. 15	2	2013	2	2013
CTN IOC	2	2011	2	2011
CTN FOC	1	2016	1	2016
CAC2S Milestone C (completed 1st Qtr FY08; rescinded as of Dec 2009)	1	2011	1	2011
CAC2S Phase 1 IOT&E	3	2011	3	2011
CAC2S Phase 1 LDC	4	2011	4	2011
CAC2S Phase 2 IOT&E	3	2015	3	2015
CAC2S Phase 2 LDU	4	2014	4	2014
BTID Fires on Dismount Increment I MS A	1	2012	1	2012
BTID Fires on Dismount Increment I MS B	1	2015	1	2015
BTID Air to Ground Increment II MS B	3	2013	3	2013
COC FOC	3	2010	4	2010
COC Operational Sustainment	1	2010	4	2016
COC Version 2	1	2010	1	2010
COC Version 3/4 Model F	1	2010	3	2010
COC Model G Developmental testing	2	2011	2	2011
COC Model G Production/Fielding	2	2011	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2274: <i>Command & Control Warfare Sys</i>	10.927	19.633	26.174	-	26.174	25.470	21.112	18.145	16.097	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

COUNTER RCIED ELECTRONIC WARFARE (USMC CREW) Systems are modular, programmable, multi-band radio-frequency jammers designed to deny enemy use of selected portions of the radio frequency spectrum to counter Radio-Controlled IEDs. CREW mounted systems are capable of being integrated into all Marine Corps Tactical Ground Vehicles. Increments 2.1 CVRJ mounted and 3.1 THOR III man portable systems are being fielded to meet current threats in all theaters of operation. The 2.1 mounted systems will be upgraded to a Band C capability beginning in FY11. Increment 3.3 (mounted, man portable and fixed site) systems shall function as a single integrated system with common architecture that will counter the continued evolution of enemy threats FY13 - FY16. This program is an ongoing effort to develop new techniques, improve capabilities, enhance software and develop waveform loadsets to counter evolving threats and prevent technology obsolescence.

GROUND-BASED OPERATIONAL SURVEILLANCE SYSTEM (GBOSS). Ground-Based Operational Surveillance System (G-BOSS) is a ground-based persistent surveillance sensor package with multiple detection and assessment capabilities comprised of four main components: trailer-mounted elevation platform, multi-spectral sensor suite, ground control station and remote ground control station. Daylight color imagery and Infrared imagery (StarSafire III and T-3000), Unattended ground sensors (UGS), (TRSS), Radar (MSTAR), Communication suite (WPPL) and Unmanned aerial vehicle interface (VideoScout).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *USMC CREW - Product Development	3.454	3.608	4.039	-	4.039
Articles:	0	0	0		0
FY 2010 Accomplishments: Development of Waveform/loadsets to support CREW 2.1 CVRJ (mounted) and CREW 3.1 THOR III (dismounted) systems and vehicle installation kits for additional platform variants.					
FY 2011 Plans: Planned Development of Waveform/loadsets to support CREW 2.1 CVRJ (mounted) and CREW 3.1 THOR III (dismounted) systems and vehicle installation kits for additional platform variants.					
FY 2012 Base Plans: Continued Development of Waveform/loadsets to support CREW 2.1 CVRJ (mounted) and CREW 3.1 THOR III (dismounted) systems and vehicle installation kits for additional platform variants.					
Title: *USMC CREW - Support	1.278	1.310	1.334	-	1.334

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p align="right">Articles:</p> <p>FY 2010 Accomplishments: Systems engineering and integration support for CVRJ 2.1 continued system enhancements and initial THOR III support.</p> <p>FY 2011 Plans: Planned systems engineering and integration support required for continued system enhancements, the planned Band C Upgrade, THOR III Support and transition to JCREW 3.3</p> <p>FY 2012 Base Plans: Systems engineering and integration support required for continued system enhancements, for CVRJ with Band C, THOR III and transition to JCREW 3.3.</p>	0	0	0		0
<p>Title: *USMC CREW - Test and Evaluation</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Testing in support of CREW 2.1 CVRJ loadset enhancements and CREW 3.1 THOR III initial testing.</p> <p>FY 2011 Plans: Planned Testing required to support enhancements to CREW 2.1, 3.1 and transition to JCREW 3.3</p> <p>FY 2012 Base Plans: Continue test efforts to support enhancements to CREW 2.1, 3.1 and transition to JCREW 3.3</p>	1.776 0	2.190 0	2.265 0	-	2.265 0
<p>Title: *USMC CREW - Management</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Program oversight, task scheduling, reports and study analysis</p> <p>FY 2011 Plans: Program oversight, task scheduling, reports and study analysis</p> <p>FY 2012 Base Plans: Program oversight, task scheduling, reports and study analysis</p>	0.908 0	1.542 0	1.614 0	-	1.614 0
<p>Title: *GBOSS - Product Development</p> <p align="right">Articles:</p>	2.000 0	5.000 0	10.079 0	-	10.079 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p><i>FY 2010 Accomplishments:</i> Completed 3.0 Design/Integration of all G-BOSS variants, COC integration, Empire Challenge 2010 planning and execution, FY10 Test Plan and Configuration Management variants.</p> <p><i>FY 2011 Plans:</i> Continued efforts for the engineering design for net centric capability (Cross Domain Solution, COC integration and DCGS-MC/DIB interface) and Technology Readiness Assessments, and integration of sensor enhancements per Acquisition Program CDD requirements (sniper detection, Short Wave IR, anomalous activity, etc.).</p> <p><i>FY 2012 Base Plans:</i> Continue Technology Readiness Assessments and integration of sensor enhancements per Acquisition Program CDD requirements (sniper detection, Short Wave IR, anomalous activity, etc.)</p>					
<p><i>Title:</i> *GBOSS - Support</p> <p align="right"><i>Articles:</i></p>	0.652 0	2.000 0	1.713 0	-	1.713 0
<p><i>FY 2010 Accomplishments:</i> Completed FY10 IA accreditation efforts, IA and software management, adjudication of fleet/user change requests and associated engineering for incorporation as system enhancements.</p> <p><i>FY 2011 Plans:</i> Continue IA accreditation as required, IA and software management, adjudication of fleet/user change requests and associated engineering for incorporation as system enhancements.</p> <p><i>FY 2012 Base Plans:</i> Continue IA accreditation efforts, IA and software management, adjudication of fleet/user change requests and associated engineering for incorporation as system enhancements.</p>					
<p><i>Title:</i> *GBOSS - Test and Evaluation.</p> <p align="right"><i>Articles:</i></p>	0.370 0	0.900 0	4.274 0	-	4.274 0
<p><i>FY 2010 Accomplishments:</i> Completed DT Events and participation in Empire Challenge 2010 for technology evaluation, design validation and CONOPS development.</p> <p><i>FY 2011 Plans:</i></p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue work on testing GBOSS version upgrades and key participation in Empire Challenge 2011 for technology evaluation, design validation and CONOPS development. FY 2012 Base Plans: Continue testing for new GBOSS version and participate in Empire Challenge 2012 for technology evaluation, design validation. and CONOPS development.					
Title: *GBOSS - Management. FY 2010 Accomplishments: Completed CO Site mitigation and system integration support continued. FY 2011 Plans: Continue CO Site mitigation and system integration support. FY 2012 Base Plans: Planned design oversight, task scheduling, estimate development, reports and test support.	0.489 0	3.083 0	0.856 0	-	0.856 0
Articles:					
Accomplishments/Planned Programs Subtotals	10.927	19.633	26.174	-	26.174

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012			FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC 6520: <i>USMC CREW</i>	11.181	185.449	8.662	0.000	8.662	115.586	116.542	119.891	76.124	Continuing	Continuing
• PMC 6438: <i>GBOSS</i>	110.603	0.000	6.782	42.900	49.682	4.711	25.056	33.723	33.831	Continuing	Continuing
• PMC 7000: <i>USMC CREW SPARES</i>	0.000	0.000	0.000	0.000	0.000	11.147	11.197	11.503	11.698	Continuing	Continuing

D. Acquisition Strategy
Counter RCIED Electronic Warfare (USMC CREW). Designated an ACAT II program (Feb 2007). Increment 2.1 mounted and 3.1 dismounted systems provide enhanced protection to combat elements in vehicle platforms and on foot. These systems replace Increment 2.0 (Chameleon and Hunter). Increment 3.3 mounted, dismounted and fixed site systems will replace the 2.1 and 3.1 systems to counter the continued evolution of enemy threats FY12 - 16. The program will continue to develop new techniques, improve capabilities, enhance software and develop upgrades to counter evolving threats and prevent technology obsolescence. Activities include waveform development, non-recurring engineering for system enhancements and capability upgrades, integration of the enhancements and the tests/ government studies required to support these changes.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>

GBOSS. The acquisition approach has been to use existing government contracts (US Army/US Air Force) for Commercial-Off-the-Shelf (COTS) and Government-Off-the-Shelf (GOTS) material and services that meet the basic requirements of the UUNS and give priority to materials and services already integrated into an existing or similar architecture. In FY12, the acquisition approach will be to maintain NSWC Crane as the system integrator to leverage their engineering and contracting vehicles for product development and test and evaluation. This approach is the most expeditious to deliver equipment and services to the forces in theater.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	SS/FFP	NAVSEA:BALTIMORE, MD	2.206	2.800	Mar 2011	3.600	Mar 2012	-		3.600	0.000	8.606	
USMC CREW	C/FFP	MCSC:QUANTICO, VA	0.751	1.657	Sep 2011	1.270	Sep 2012	-		1.270	0.000	3.678	
GBOSS	WR	NSWC:CRANE, IN	2.115	5.000	Jan 2011	8.915	Jan 2012	-		8.915	0.000	16.030	
GBOSS	SS/FP	General Dynamics: MULTIPLE LOCATIONS	-	-		0.500	Mar 2012	-		0.500	0.000	0.500	
GBOSS	C/CPFF	MCOTEA:QUANTICO, VA	-	-		0.051	Dec 2011	-		0.051	0.000	0.051	
GBOSS	WR	NSWC:DAHLGREN, VA	-	-		0.500	Nov 2011	-		0.500	0.000	0.500	
GBOSS	MIPR	CECOM:STAFFORD, VA	-	-		0.300	Jan 2012	-		0.300	0.000	0.300	
Subtotal			5.072	9.457		15.136		-		15.136	0.000	29.665	

Remarks
 USMC CREW NAVSEA: CREW will utilize Johns Hopkins University Applied Physics Laboratories to develop waveform load sets for all CREW Increment systems to continue to counter the evolving RCIED Threat.
 USMC CREW MCSC: In FY10 USMC CREW utilized the Product Support Integrator for the non-recurring engineering and design of the mounting solutions for CVRJ CREW 2.1 systems.
 USMC CREW: MCSC - FY10 - FY12 will utilize the Prime Vendor/OEM of the CVRJ and THOR III and JCREW 3.3 systems for non-recurring engineering for capability enhancements, Engineering Change Proposals and mounting solutions.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	C/FFP	MCSC:QUANTICO, VA	1.317	1.600	Mar 2011	0.875	Mar 2012	-		0.875	0.000	3.792	
GBOSS	Various	NSWC:CRANE, IN	0.652	2.000	Jan 2011	1.226	Nov 2011	-		1.226	0.000	3.878	
USMC CREW	WR	SSC-Atlantic:CHARLESTON, SC	0.748	0.477	Mar 2011	0.800	Jan 2012	-		0.800	0.000	2.025	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	WR	NSWC:CRANE, IN	0.927	0.798	Mar 2011	0.500	Jan 2012	-		0.500	0.000	2.225	
GBOSS	C/FFP	DEMA:STAFFORD, VA	-	-		0.300	Apr 2012	-		0.300	0.000	0.300	
Subtotal			3.644	4.875		3.701		-		3.701	0.000	12.220	

Remarks
 USMC CREW MCSC: CEOss contracts for a Business Case Analysis in FY10, and an LCCE in FY11 (to be competed in Jun 2011)
 USMC CREW MCSC: CEOss contracts for acquisition support in FY10,11 and 12
 USMC CREW SSC-Atlantic: Systems Engineering and Integration for all Increment Systems
 USMC CREW CRANE: Systems Engineering, RF Modeling and Simulation and Independent Verification and Validation (IV&V) support for all Increment Systems

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GBOSS	Various	MCOTEA:QUANTICO, VA	0.370	0.900	Jan 2011	0.450	Dec 2011	-		0.450	0.000	1.720	
USMC CREW	C/CPFF	MCOTEA:QUANTICO VA	0.327	-		0.617	Mar 2012	-		0.617	0.000	0.944	
USMC CREW	PO	YPG:YUMA, AZ	0.991	0.630	Mar 2011	0.700	Jan 2012	-		0.700	0.000	2.321	
USMC CREW	WR	NSWC:DAHLGREN, VA	0.150	0.100	Apr 2011	0.150	Apr 2012	-		0.150	0.000	0.400	
GBOSS	Various	NSWC:CRANE, IN	-	-		3.524	Jan 2012	-		3.524	0.000	3.524	
GBOSS	MIPR	CECOM:STAFFORD, VA	-	-		0.300	Jan 2012	-		0.300	0.000	0.300	
Subtotal			1.838	1.630		5.741		-		5.741	0.000	9.209	

Remarks
 USMC CREW MCOTEA - Provides OT/DT Oversight and support for Increment 3.3 systems (FY10 and FY12)
 USMC CREW YPG - Provides test ranges and results analysis for all increment Systems
 USMC CREW NSWC Dahlgren - provides RADHAZ Safety Studies for all increment systems

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	Various	TBD:VAR	-	0.588	Jun 2011	0.740	Jun 2012	-		0.740	0.000	1.328	
GBOSS	Various	NSWC:CRANE, IN	0.652	3.083	Jan 2011	0.856	Dec 2011	-		0.856	0.000	4.591	
Subtotal			0.652	3.671		1.596		-		1.596	0.000	5.919	

Remarks
 USMC CREW VAR: Provides oversight and management support to USMC CREW program
 USMC CREW MCSC: Provides EOD Engineering and Program Management Support to USMC CREW Program

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.206	19.633		26.174		-		26.174	0.000	57.013	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

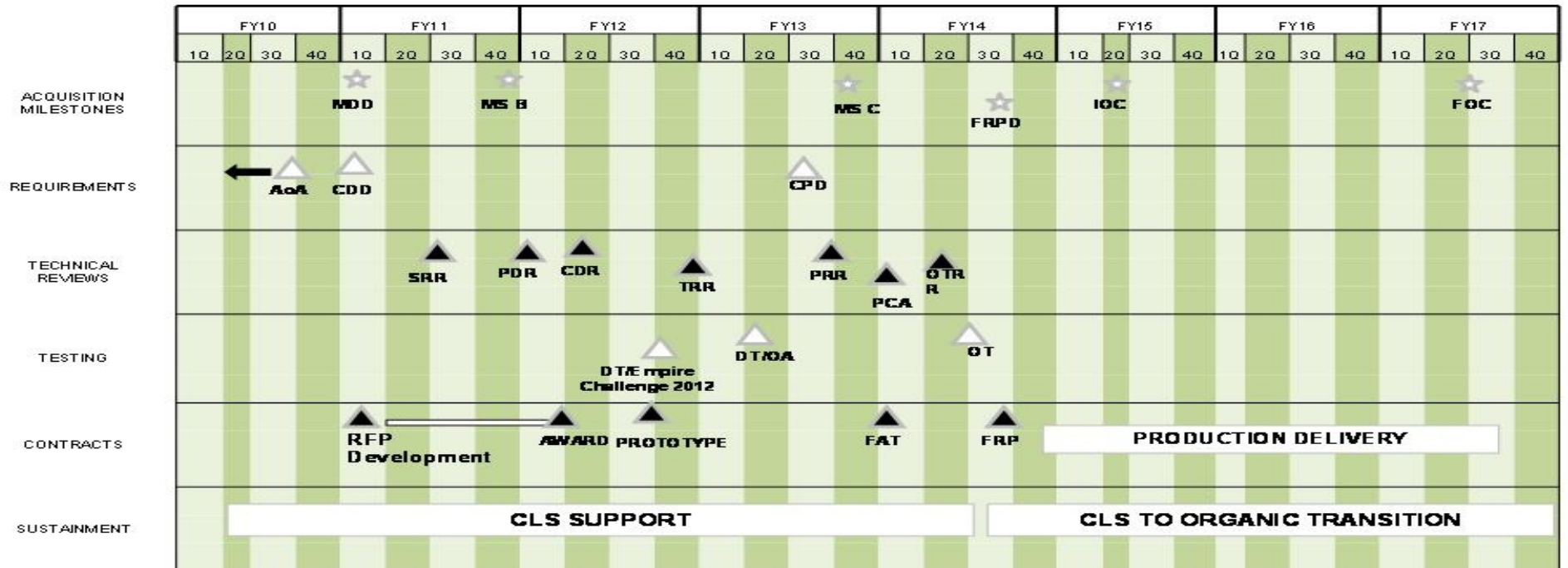
APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0206313M: *Marine Corps Comms Systems*

PROJECT
 2274: *Command & Control Warfare Sys*



G-BOSS Schedule



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0206313M: Marine Corps Comms Systems	PROJECT 2274: Command & Control Warfare Sys
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	Prior				FY10				FY11				FY12				FY13				FY14				FY15				FY16			
	FY6	FY7	FY8	FY9	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
INCREMENT I - CREW 2.0 (MCSC)																																
Production and Deployment																																
Chameleon					8,947																											
Hunter					1,142																											
INCREMENT II - CREW 2.1 (PMS 408)																																
Production and Deployment																																
Current Contract					CA				6,754 CVRJ																							
Band C Upgrade (ECP Award)													BAND C UPGRADE																			
Milestones					MS C		IOC	FRP	FOC																							
MAN PORTABLE VARIANT																																
Operations and Support																																
Quick Reaction Dismount/Guardian					QRD 423																											
Production and Deployment																																
JCREW 3.1									JCREW 3.1 - 893 THOR III																							
Milestones									IOC	FOC																						
INCREMENT III JCREW 3.3 (PMS 408)																																
Production and Deployment																																
Contract Award													CA				LRIP (27)															
Mounted																					JCREW 3.3 - 3,100 MOUNTED											
Fixed Site																									JCREW 3.3 - 7 FIXED SITE							
Dismounted																									JCREW 3.3 - 790 DISMOUNTED							
Program Reviews					IBR				PDR	CDR							FRPDR				USMC PROCUREMENT DECISION											
Milestones					MS B								MS C																			
PRODUCT SUPPORT INTEGRATOR																																
Operations and Support																																
Contract Award					CA				CLS/PSI SUSTAINMENT CONTRACT - ALL INCREMENTS																							
WAVEFORM DEVELOPMENT - ALL INCREMENTS																																
WAVEFORM UPDATES TO MEET FUTURE RCIED THREATS - ALL INCREMENTS																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2274: <i>Command & Control Warfare Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2274				
GBOSS Empire Challenge 2012	3	2012	4	2012
GBOSS DT/OA	2	2013	2	2013
GBOSS Operational Testing	2	2014	3	2014
GBOSS MILESTONE B	4	2011	4	2011
GBOSS MILESTONE C	4	2013	4	2013
GBOSS IOC	2	2015	2	2015
GBOSS FULL RATE PRODUCTION DECISION	3	2014	3	2014
USMC CREW 2.1 Waveform Development	1	2010	4	2016
USMC CREW JCREW 3.3 Milestone C	4	2011	4	2011
USMC CREW 2.1 and JCREW 3.3 Program Support	1	2010	4	2014
USMC CREW JCREW 3.3 Procurement Decision	3	2013	3	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
<i>2275: Joint Tactical Radio System</i>	5.294	2.038	5.018	-	5.018	5.069	2.260	2.295	2.318	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) Tactical Satellite Comm Terminal (TSCT) - LIGHTWEIGHT MULTIBAND SATELLITE TERMINAL (LMST)/PHOENIX are quad-band Super High Frequency (SHF) satellite terminals mounted in transit cases and High Mobility Multipurpose Wheeled Vehicles (HMMWVs). The LMST and Phoenix terminals will be the primary provider of SHF connectivity to Marine Air-Ground Task Forces (MAGTF) operations. SATCOM Joint Interoperability as defined in Mil-Std-188-165B and DoD Policy "Transmission of Internet Protocol (IP) over DoD-Leased and DoD-owned transponded Satellite Communications Systems" of 10 Feb 06, are driving the requirement to update the TSCTs. The Mil-Std and DoD policy deal with interoperability of Satellite Radio Frequency (RF) Modems and require modems with Transmission Security (TRANSEC) and IP capabilities, respectively. R&D funds are needed to perform the development, test, and certification of terminal configurations that support these requirements.

(U) High Capacity Communications Capability (HC3): was intended to replace Super High Frequency (SHF) wideband and be the Marine Air-Ground Task Force (MAGTF) Commanders' primary Satellite Communication (SATCOM) method of transmitting and receiving wideband voice, video, and data. The HC3 program has been cancelled by OSD.

(U) Legacy Communications/Electronics Modifications and Sustainment (LEGACY): encompass post production sustainment of fielded tactical communication and networking systems and Service Life Extension Programs (SLEP) of aging communications equipment reaching the end of their life cycle. The post production sustainment provides necessary engineering and logistic support to maintain the existing operational capability above threshold operational readiness. The support provides equipment specialists, configuration management, supply support coordination and control, depot maintenance control and warranty administration. The AN/TSQ-227 Digital Technical Control (DTC) is undergoing a major refresh driven by Department of Defense (DoD)/Joint Interoperability Test Command (JITC) mandated interoperability and security requirements, which includes technology insertion and evolutionary equipment improvements as part of the SLEP effort. Additionally, the AN/TSC-170A Troposcatter Communications System is also undergoing a refresh/product improvement which brings the system from 1980s technology to the 21st century. R&D funds are required to certify the antenna replacement, and future funds are required to develop, test, and certify the movement of the current HMMWV-mounted radio shelter into a transit case solution.

(U) Command & Control On-the-move Network, Digital Over-the-horizon Relay (CONDOR): CONDOR capabilities material solution will be a coordinated effort with the Army's WIN-T program. A Marine Corps variant called Networking on the Move (NOTM) is currently being developed. The CONDOR funding line is funding the capability to allow tactical forces extended Beyond Line-of-Sight (BLOS) to maintain situational awareness by extending data network connectivity regardless of distance while on-the-move (OTM).

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>
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(U) Networking on the Move (NOTM): NOTM, a new start in FY 2012, is a Marine Corps variant of the Army's WIN-T program. NOTM will integrate commercially available routers, encryption devices, and OTM satellite and terrestrial terminals to provide high-bandwidth line-of-sight and SATCOM connectivity across the battlefield. Production variants will be integrated as a kit into existing armored tactical wheeled vehicles without degrading their inherent protection.

(U) Very Small Aperture Terminal (VSAT) - VSAT provides beyond line-of-sight (BLOS), low-cost satellite communications to MAGTF commands at the Major Subordinate Commands to the Battalion levels. VSAT enables critical voice, video, and data for Command and Control (C2), Fires, Logistics, and Intelligence. VSAT fills a void of BLOS, high bandwidth capability throughout the Marine Air-Ground Task Force (MAGTF). The VSATs are currently Ku-band only, which requires commercial satellite connectivity. Future upgrades will utilize the military's Wideband Global Satellites to save on long-term O&M costs. Research and development work will need to be done to ensure that VSAT can transition from Ku to Ka-band.

Additionally, SATCOM Joint Interoperability as defined in Mil-Std-188-165B and DoD Policy "Transmission of Internet Protocol (IP) over DoD-Leased and DoD-owned transponded Satellite Communications Systems" of 10 Feb 06, is driving the requirement to update the VSATs. The Mil-Std and DoD policy deal with Satellite RF Modem Interoperability and require modems with Transmission Security (TRANSEC) and IP capabilities, respectively. R&D funds are needed to perform the development, test, and certification of terminal configurations that support these requirements. The Capabilities Production Document identifies the need for a lighter, more mobile satellite terminal for all echelons. This fact, coupled with the cancellation of the HC3 program, is driving the need to reduce terminal weight and to add X-band capability.

(U) Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): SMART-T provides tactical users with protected data and voice via Extremely High Frequency (EHF) satellite communications. The SMART-T system is transported on High Mobility Multipurpose Wheeled Vehicles (HMMWVs), providing MAGTF Commanders a secure, survivable, long-haul, low/medium data rate communications link not subject to terrain masking and horizon limitations. The SMART-T is also capable of operation when removed from the HMMWV. SMART-T will be undergoing an upgrade to be interoperable with the new Advanced Extremely High Frequency (AEHF) constellation and will require certification testing and a Multi-service Operational Test and Evaluation (MOT&E).

(U) Tactical Communications Modernization (TCM): TCM was established as an interim solution to the Warfighter due to urgent communications requirements and schedule delay of JTRS. It represents procurement and upgrades of over 140,000 tactical radio systems. TCM radio systems are commercial off-the-shelf items procured on existing contracts. R&D funds are required for testing of the next generation Integrated Intra-Squad Radio (IISR) systems to determine the most desirable solution for lifecycle replacement of the current IISR inventory.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *TCM - Next Generation IISR	-	-	0.445	-	0.445
Articles:			0		0
FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funding to support the procurement and testing of the next generation Integrated Intra-Squad Radio (IISR) to determine the most desirable solution for the lifecycle replacement of the current IISR in the Marine Corps inventory.					
Title: *Networking on the Move - Development Articles:	-	-	1.277 0	-	1.277 0
FY 2012 Base Plans: Networking on the Move development efforts to include prototype hardware development.					
Title: *CONDOR: Warfighter Information Network - Expeditionary (WIN-X) Development Articles:	0.500 0	-	-	-	-
FY 2010 Accomplishments: Continued Warfighter Information Network - Expeditionary (WIN-X) Development efforts					
Title: *CONDOR: Technical, Engineering Support and Contract Advisory, Assistance Services Articles:	1.018 0	0.224 0	-	-	-
FY 2010 Accomplishments: Continued Technical, Engineering Support and Contract Advisory, Assistance Services.					
FY 2011 Plans: Technical, Engineering Support and Contract Advisory, Assistance Services.					
Title: *CONDOR: Legacy Interoperability Development Articles:	0.500 0	-	-	-	-
FY 2010 Accomplishments: Continued Interoperability Development of on-the-move capabilities and at-the-halt network and legacy communications equipment.					
Title: *Very Small Aperture Terminal (VSAT): Development and integration Articles:	0.407 0	0.043 0	0.411 0	-	0.411 0
FY 2010 Accomplishments: Continued development and integration efforts. Includes preparations for Joint Interoperability Testing for certification for Ka-band Upgrade, Marine Corps Operational Test and Evaluation Activity (MCOTEA) support					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011																			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>		PROJECT 2275: <i>Joint Tactical Radio System</i>																			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)																							
for Ka-band testing and certification, Defense Information Systems Agency (DISA) Modem certification, Marine Corps Combat Development Center (MCCDC) Operational Architecture development.																							
FY 2011 Plans: Continue Development and integration efforts along with Science & Technology engineering support for very small aperture terminal (VSAT).																							
FY 2012 Base Plans: Continue Development and integration efforts, including DISA Modem Certification and engineering support for VSAT.																							
Title: *Very Small Aperture Terminal (VSAT): Antenna Development																							
Articles:																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">FY 2010</th> <th style="width: 10%;">FY 2011</th> <th style="width: 10%;">FY 2012 Base</th> <th style="width: 10%;">FY 2012 OCO</th> <th style="width: 10%;">FY 2012 Total</th> </tr> </thead> <tbody> <tr> <td>0.190</td> <td align="center">0.190</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> </tr> <tr> <td>0</td> <td align="center">0</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> </tr> </tbody> </table>							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	0.190	0.190	-	-	-	-	0	0	-	-	-	-
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total																		
0.190	0.190	-	-	-	-																		
0	0	-	-	-	-																		
FY 2010 Accomplishments: Continued efforts to develop a lightweight inflatable satellite communications antenna.																							
Title: *High Capacity Communications Capability (HC3): USMC Integration efforts.																							
Articles:																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>1.024</td> <td align="center">1.024</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> </tr> <tr> <td>0</td> <td align="center">0</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> </tr> </tbody> </table>						1.024	1.024	-	-	-	-	0	0	-	-	-	-						
1.024	1.024	-	-	-	-																		
0	0	-	-	-	-																		
FY 2010 Accomplishments: USMC Integration efforts for the HC3 Satellite Communication (SATCOM) primary method of transmitting and receiving wideband voice, video, and data.																							
Title: *TSCT (LMST): Test and Evaluation Support																							
Articles:																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>0.288</td> <td align="center">0.288</td> <td align="center">0.265</td> <td align="center">2.687</td> <td align="center">-</td> <td align="center">2.687</td> </tr> <tr> <td>0</td> <td align="center">0</td> <td align="center">0</td> <td align="center">0</td> <td align="center">-</td> <td align="center">0</td> </tr> </tbody> </table>						0.288	0.288	0.265	2.687	-	2.687	0	0	0	0	-	0						
0.288	0.288	0.265	2.687	-	2.687																		
0	0	0	0	-	0																		
FY 2010 Accomplishments: MCOTEA test and evaluation support.																							
FY 2011 Plans: Continue Science & Technology engineering support.																							
FY 2012 Base Plans: Develop IP Modem with Transmission Security (TRANSEC) capability. Test and certify IP Modem with Transmission Security (TRANSEC) capability.																							
Title: *Legacy Comm/Elec (Networks): Engineering Support for DTC																							
Articles:																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>0.473</td> <td align="center">0.473</td> <td align="center">0.460</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> </tr> <tr> <td>0</td> <td align="center">0</td> <td align="center">0</td> <td align="center">-</td> <td align="center">-</td> <td align="center">-</td> </tr> </tbody> </table>						0.473	0.473	0.460	-	-	-	0	0	0	-	-	-						
0.473	0.473	0.460	-	-	-																		
0	0	0	-	-	-																		

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<i>FY 2010 Accomplishments:</i> Continued Engineering Support for Digital Technical Control (DTC).					
<i>FY 2011 Plans:</i> Continue Engineering Support for Digital Technical Control.					
<i>Title:</i> *Legacy Comm/Elec (Networks): Operational Support Test/Support for DTC <div style="text-align: right;"><i>Articles:</i></div>	0.313 0	0.293 0	-	-	-
<i>FY 2010 Accomplishments:</i> Continued Operational Support Test/Support for DTC.					
<i>FY 2011 Plans:</i> Continued Operational Support Test/Support for DTC.					
<i>Title:</i> *Legacy Comm/Elec: TRC-170 Certification <div style="text-align: right;"><i>Articles:</i></div>	0.581 0	0.753 0	-	-	-
<i>FY 2010 Accomplishments:</i> Continued effort to obtain Joint Interoperability Certification.					
<i>FY 2011 Plans:</i> Continue Engineering support to research a transit case troposcatter capability for TRC-170, MCOTEA Test and Evaluation Support. Obtain Joint interoperability certification.					
<i>Title:</i> *SMART-T - Program Support <div style="text-align: right;"><i>Articles:</i></div>	-	-	0.198 0	-	0.198 0
<i>FY 2012 Base Plans:</i> Provide Science & Technology Engineering support for Secure, Mobile, Anti-jam, Reliable Tactical Terminal (SMART-T).					
Accomplishments/Planned Programs Subtotals	5.294	2.038	5.018	-	5.018

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012			FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC/4633001: <i>Tactical Satellite LMST</i>	1.350	4.631	1.389	16.000	17.389	1.423	1.448	1.476	1.501	0.000	30.631
• PMC/4633002: <i>Legacy Communications Electronics</i>	4.334	31.208	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	39.578
• PMC/4633003: <i>Very Small Aperture Terminal (VSAT)</i>	9.140	24.778	0.000	16.000	16.000	0.000	0.000	0.000	0.000	0.000	111.518
• PMC/4633004: <i>TCM</i>	51.174	61.017	54.580	41.402	95.982	55.522	56.055	59.339	60.586	0.000	548.377
• PMC/4633005: <i>SMART-T</i>	1.413	0.000	1.665	0.000	1.665	1.388	0.794	0.887	0.912	0.000	16.280
• PMC/700000: <i>SMART-T Spares</i>	2.020	0.178	0.000	0.000	0.000	0.188	0.192	0.197	0.200	0.000	2.975
• PMC/4633006: <i>AN/TRC-170</i>	0.000	0.000	0.136	25.000	25.136	0.000	0.000	0.000	0.000	0.000	25.136

D. Acquisition Strategy

(U) D. ACQUISITION STRATEGY:

(U) Tactical Satellite Comm Terminal (TSCT) - LIGHTWEIGHT MULTIBAND SATELLITE TERMINAL (LMST)/PHOENIX: The acquisition strategy for the Lightweight Multi-band Satellite Terminal (LMST) and Phoenix program is to upgrade terminals to maintain joint interoperability and to sustain those terminals.

(U) Legacy Communications/Electronics Modifications and Sustainment (LEGACY): Provide continuous sustainment support to fielded equipment and implemented Service Life Extension Programs for equipment reaching its end of life supportability.

(U) Command & Control On-the-move Network, Digital Over-the-horizon Relay (CONDOR): Evaluate prototype hardware.

(U) Networking on the Move (NOTM): Develop on-the-move capabilities and integrate with at-the-halt network and legacy communications equipment.

(U) Very Small Aperture Terminal (VSAT): provides beyond line-of-sight (BLOS) satellite communications throughout the MAGTF. Multiple VSAT configurations provide the capability to tailor satellite communications to the lowest echelon. The VSATs are currently Ku-band only which requires commercial satellite connectivity. Future upgrades will utilize the military's Wide-band Global Satellites Ka-band capability to reduce long term O&M costs associated with commercial bandwidth. R&D work is necessary to ensure the successful transition from Ku to Ka-band. Additional R&D funding will allow for further development of more capable modems which will provide higher capacity through-put and Transmission Security (TRANSEC).

(U) Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): AEHF capability upgrade requires MCSC to modify SMART-T terminals with AEHF upgrade kits and replace the AN/PSQ-17 planning tool by purchasing the Tactical Computer Digital Mission Planner, AN/PYQ-19, through PM WIN-T.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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(U) Tactical Communications Modernization (TCM): Provides support for the procurement and testing of the next generation Integrated Intra-Squad Radio (IISR) systems to determine the most desirable solution for the lifecycle replacement of the current IISR in the Marine Corps inventory.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LMST IP and TRANSEC Modem Upgrade	MIPR	CECOM:Ft. Monmouth, NJ	-	-		2.687	May 2012	-		2.687	0.000	2.687	
CONDOR Development	SS/FFP	MITRE ,CECOM:Ft. Monmouth, NJ	6.746	0.224	Dec 2010	-		-		-	0.000	6.970	
NOTM Development	SS/FFP	MITRE, CECOM:Ft. Monmouth, NJ	-	-		0.440	Dec 2011	-		0.440	0.000	0.440	
Subtotal			6.746	0.224		3.127		-		3.127	0.000	10.097	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
VSAT Development and Integration	SS/FFP	MITRE:Stafford, VA	4.337	-		0.411	Dec 2011	-		0.411	0.000	4.748	
LMST Contractor Support	SS/FFP	MITRE:Stafford, VA	-	0.265	Dec 2010	-		-		-	0.000	0.265	
LCE (Networks) Support	C/FFP	QNA:Stafford, VA	1.916	0.460	Mar 2011	-		-		-	0.000	2.376	
NOTM Contract Support	C/FFP	QNA:Stafford, VA	-	-		0.837	Mar 2012	-		0.837	0.000	0.837	
VSAT Contractor Support	C/FFP	QNA:Stafford, VA	-	0.043	Mar 2011	-		-		-	0.000	0.043	
LCE (TRC-170A) Support	SS/FFP	MITRE, CECOM:Fort Monmouth, NJ	-	0.500	Dec 2010	-		-		-	0.000	0.500	
SMART-T Contractor Support	C/FFP	QNA:Stafford, VA	-	-		0.198	Mar 2012	-		0.198	0.000	0.198	
Subtotal			6.253	1.268		1.446		-		1.446	0.000	8.967	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LCE (Networks) Test Support	MIPR	MCOTEA/ JITC:Quantico, VA	0.685	0.293	Mar 2011	-		-		-	0.000	0.978	
TCM Next Generation IISR	C/FFP	MCSC:Quantico, VA	-	-		0.445	Mar 2012	-		0.445	0.000	0.445	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>

Legacy Communications/Electronics (LCE) / TRC-170							
EVENTS/MILESTONES	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Antenna Procurement	▲						
Testing and Reviews							
- Transportation		▲					
- Sling Lift		▲					
Production and Fielding							
- Antenna			▲				

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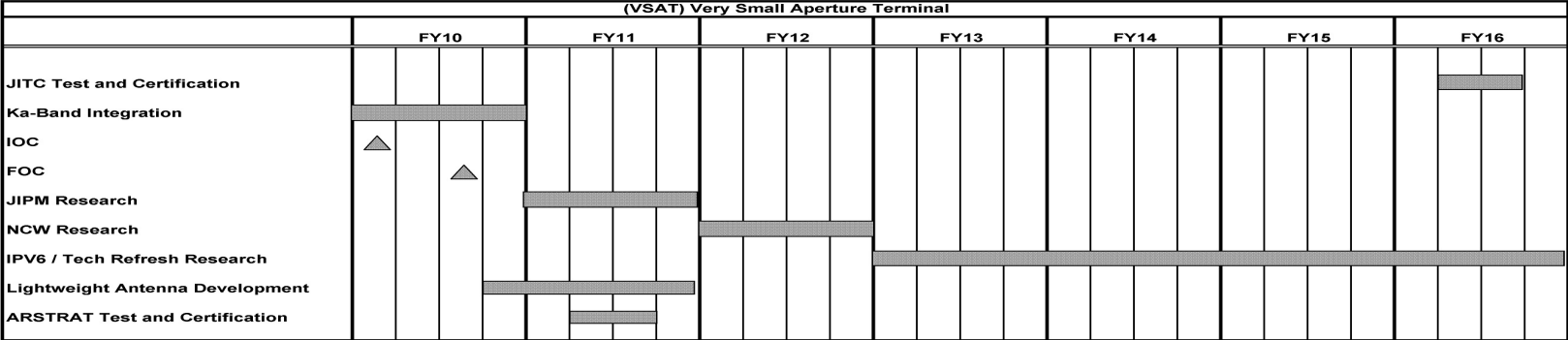
Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>

**Command & Control On-The-Move Network, Digital Over-The Horizon Relay/Network On The Move
CONDOR/NOTM**

	FY10	FY11	FY12	FY13	FY14	FY15	FY16
AoA Study							
Integration Studies							
Research							

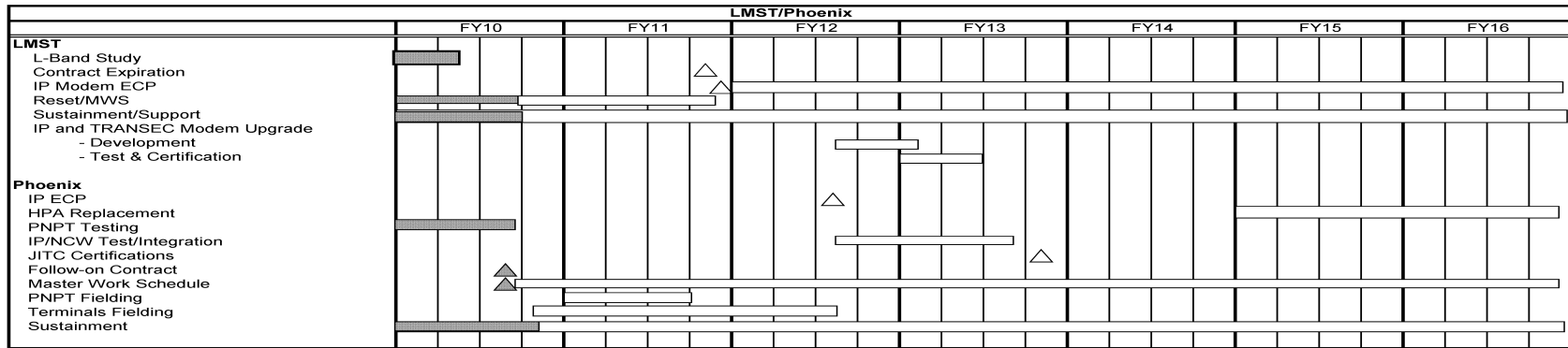
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2275				
LMST L-Band Study	1	2010	2	2010
LMST Contract Expiration	4	2011	4	2011
LMST IP Modem ECP	4	2011	4	2016
LMST Reset/MWS	1	2010	4	2011
LMST Sustainment/Support	1	2010	4	2016
LMST: IP and TRANSEC Modem Upgrade Development	3	2012	1	2013
LMST: IP and TRANSEC Modem Upgrade Test and Certification	1	2013	2	2013
LMST (Phoenix) IP ECP	3	2012	3	2012
LMST (Phoenix) HPA Replacement	1	2015	4	2016
LMST (Phoenix) PNPT Testing	1	2010	3	2010
LMST (Phoenix) IP/NCW Test/Integration	3	2012	3	2013
LMST (Phoenix) JITC Certifications	4	2013	4	2013
LMST (Phoenix) Follow-on Contract	3	2010	3	2010
LMST (Phoenix) Master Work Schedule	3	2010	4	2016
LMST (Phoenix) PNPT Fielding	1	2011	3	2011
LMST (Phoenix) Terminals Fielding	4	2010	3	2012
LMST (Phoenix) Sustainment	1	2010	4	2016
VSAT JITC Test and Certification	2	2016	3	2016
VSAT Ka-band Integration	1	2010	4	2010
VSAT IOC	1	2010	1	2010
VSAT FOC	3	2010	3	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2275: <i>Joint Tactical Radio System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
VSAT JIPM Research	1	2011	4	2011
VSAT NCW Research	1	2012	4	2012
VSAT IPV6 / Tech Refresh Research	1	2013	4	2016
VSAT Lightweight Antenna Development	4	2010	4	2011
VSAT ARSTRAT Test and Certification	2	2011	3	2011
LCE/TRC-170 Antenna Procurement	3	2010	3	2010
LCE/TRC-170 Transportation Test	1	2011	1	2011
LCE/TRC-170 Sling Lift Test	1	2011	1	2011
LCE/TRC-170 Antenna Production and Fielding	3	2011	4	2012
CONDOR AoA Study	1	2010	1	2010
CONDOR Integration Studies	1	2011	4	2011
NOTM Research	1	2012	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2276: <i>Comms Switching and Control Sys</i>	4.239	4.293	4.071	-	4.071	3.371	1.738	1.662	1.706	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) Network Planning & Management (NPM), formerly Joint Network Management System (JNMS), is a portfolio of communications planning and Network Management applications for use throughout the Marine Air-Ground Task Force (MAGTF). NPM includes the Systems Planning Engineering and Evaluation Device (SPEED). NPM provides the MARFOR (Marine Forces) component planners with the ability to conduct high-level planning; detailed planning and engineering; monitoring; control and reconfiguration; and spectrum planning and management in support of Combatant Commander (COCOM) and Commander, Joint Task Force (CJTF) operations. SPEED provides High Frequency (HF) predictions, Line of Site (LOS) propagation, Radio Coverage Analysis (RCA), Satellite planning, Command and Control Personal Computer (C2PC) track interface, interference and de-confliction analysis, spectrum management, Radio Guard Charts, Comm-On-The-Move (COTM), and T/E (training & education) and force structure management.

(U) Transition Switch Module (TSM): consists of three systems that provide a flexible Unit Level Switch that replaces legacy Tri-Tac switches with current commercial technology, providing maneuver elements with improved voice/data switching, data transport and bandwidth management capabilities. This program maintains USMC joint interoperability as all Services transition to Commercial Off-The-Shelf (COTS) switching technologies.

(U) Expeditionary Command and Control Suite (ECCS): Will provide reach back capability to the Global Information Grid (GIG) to access the Defense Switch Network (DSN), Defense Information System Network (DISN) Secret Internet Protocol Router Network (SIPRNET), Non-secure Internet Protocol Router Network (NIPRNET), and DISN Video Services (DVS), enabling a small advance force/liaison team to communicate with a Marine Air-Ground Task Force (MAGTF), Joint Task Force (JTF) or other Joint Force Commander, and to maintain situational awareness.

(U) Tactical Data Network (TDN) Gateway (GW): The TDN GW is a shelter system mounted on a Heavy-High Mobility Multipurpose Wheeled Vehicle (H-HMMWV) and is the data communication connection between external and internal Marine Air-Ground Task Force (MAGTF) networks. It provides the Wide Area Network (WAN) connection point and is the hub of the Local Area Network (LAN) architecture. The LAN is extended via the Data Distribution System (DDS), which is the TDN server variant of the TDN GW. TDN GWs and DDSs provide data transfer and switching services, subscriber access and mobile host support. A GW can operate from the SENSITIVE BUT UNCLASSIFIED (SBU) up to the SECRET level and contains an integral NSA Type 1 Inline Network Encryption (INE) device capable of supporting tunneling.

(U) Tactical Data Network (TDN) Data Distribution System - Modular (DDS-M): The DDS-M provides the commander a modular, integrated, and interoperable Internet Protocol (IP)- based LAN and WAN data networking capability that forms the data communications backbone and data communications support to organizations within a MAGTF. The DDS-M provides extension of the Defense Information System Network (DISN), Secret Internet Protocol Router Network (SIPRNet), and Sensitive But Unclassified (SBU) Non-secure Internet Protocol Router Network (NIPRNet) as well as a Coalition networking capability and access to strategic, supporting

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>
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establishments, joint, and other service component tactical data networks for Marine Corps Tactical Data Systems (TDSs) and other DDS-Ms. The DDS-M provides Marine Corps maneuver elements with a modular and scalable IP data transport capability that will replace, supplement and be used with existing legacy data systems through the integration of computers, routers, data switches and cabling, Enhanced Position Location and Reporting System (EPLRS) radio net interface units, MODEMS, link encryption devices, and patch panels. Uninterrupted Power Supplies (UPS) provide for emergency power and continuity of operations. The DDS-M can operate from the SBU up to the TOP SECRET (TS)/SENSITIVE COMPARTMENTED INFORMATION (SCI) level and contains integral In-line Network Encryption (INE) device supporting IP Security (IPSec) and Virtual Private Networking (VPN).

(U) Warfighter Network Tactical (WFN-T): WFN-T is a portfolio of systems of tactical network programs. Starting In FY 2012, WFN-T is broken out into three separate programs: TDN DDS-M, TDN Gateway, and Joint Enhanced Core Communications System (JECCS). WFN-T provides a standard data and voice architecture for voice, Secret Internet Protocol Router Network (SIPRNet), Non-Classified Internet Protocol Router Network (NIPRNet), coalition, data, and video services that is interoperable with Joint communications systems. Specifically, it provides interoperability with Defense Information Systems Agency (DISA) net-centric Global Information Grid (GIG) convergence architecture, provides network optimization (accelerators) to best utilize precious satellite and terrestrial bandwidth, replaces copper and fiber optic cable infrastructure assemblies that are outdated, provides Voice over Internet Protocol (VoIP) that efficiently shares the IP transport data, and provides multi-level security cross-domain solutions mandated by the DISA GIG IP convergence (black core).

(U) Joint Enhanced Core Communications System (JECCS): Formerly known as First In Command and Control System (FICCS). JECCS is the Joint Task Force (JTF) enabler "first in" integrated, processor-controlled communications and management system that provides C2 capabilities supporting a Marine Expeditionary Unit (MEU) deployment ashore of the early phases of a deployment by a larger command element such as a Marine Air-Ground Task Force (MAGTF) or JTF Commander's mission into an Area of Operation. The JECCS is easily scalable and capable of "fly-away" deployment. It is a system of systems composed of Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) equipment. It provides the primary interface between subscriber equipment/systems and the long-haul multi-channel transmission systems. The JECCS facilitates secure and non-secure voice and data communications, switching functions, network routing, and management functions. The JECCS augments the current and planned communications architectures and provides technical control and network management services for the broad range of switching and radio connectivity requirements.

(U) Digital Technical Control (DTC): DTC and other communications are a switch network infrastructure which provides voice, SIPR, NIPR, coalition, data, and video services. DTC provides the deployed warfighter with a standard data and voice architecture that is interoperable with joint and other services' communications systems. Prior to FY 2012, funding for DTC was included in PU C2275, Legacy Communications/Electronics.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *TSM: Engineering and Program Support	0.093	0.100	0.500	-	0.500
Articles:	0	0	0		0
FY 2010 Accomplishments: Continued FY09 effort of engineering and program support.					
FY 2011 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue FY10 effort of engineering and program support.						
FY 2012 Base Plans: Continue FY11 effort of engineering and program support.						
Title: *TSM: Technology Insertion	Articles:	0.186 0	0.215 0	0.804 0	-	0.804 0
FY 2010 Accomplishments: Technology insertion development initial increment.						
FY 2011 Plans: Technology insertion continued development, increment II.						
FY 2012 Base Plans: Technology insertion continued development, increment III.						
Title: *WFN-T: Engineering Support and Prototype Development	Articles:	1.991 0	2.146 0	-	-	-
FY 2010 Accomplishments: Provided for engineering support and prototype development to modify existing programs to add emerging capabilities for interoperability, increments I and II; TDN developmental efforts continue under the WFN-T program.						
FY 2011 Plans: Continue FY10 efforts, increments III and IV.						
Title: *Data Distribution System - Modular (DDS-M): T&E Program support	Articles:	-	-	2.210 0	-	2.210 0
FY 2012 Base Plans: JITC Joint Interoperability Testing and MCOTEA participation in DT events; First Article Testing (FAT) and Systems Integration Testing (SIT) in support of independent user evaluations.						
Title: *NPM: SPEED, CEOI development and Pub 8 compliance	Articles:	1.521 0	1.403 0	0.517 0	-	0.517 0
FY 2010 Accomplishments:						

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued Systems Planning, Engineering, and Evaluation Device (SPEED) software enhancements. FY 2011 Plans: Continue with SPEED v11.X testing, release, fielding and award. FY 2012 Base Plans: Continue future enhancements to software to maintain relevancy with emerging communication technology.					
Title: *ECCS: Test and Evaluation and Program Support Articles:	0.448 0	0.429 0	0.039 0	-	0.039 0
FY 2010 Accomplishments: Continued program support for T&E efforts. FY 2011 Plans: Continue program support for T&E efforts. FY 2012 Base Plans: Continue program support for T&E efforts.					
Title: *DTC: T&E support Articles:	-	-	0.001 0	-	0.001 0
Accomplishments/Planned Programs Subtotals	4.239	4.293	4.071	-	4.071

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/4634-1: <i>TSM</i>	33.676	1.850	0.000	15.780	15.780	0.000	0.000	0.000	0.000	0.000	124.248
• PMC/4634-2: <i>ECCS</i>	9.864	8.308	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.172
• PMC/4634-3: <i>TDN</i>	0.000	0.000	1.000	0.000	1.000	0.016	0.000	0.000	0.000	0.000	56.003
• PMC/4634-4: <i>WFN-T</i>	63.762	31.384	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	117.546
• PMC/4634-5: <i>DDS-M</i>	0.000	0.000	14.191	33.962	48.153	36.713	36.559	30.764	18.855	0.000	171.044
• PMC/4634-6: <i>DTC</i>	0.000	0.000	0.134	0.000	0.134	0.138	0.142	0.146	0.000	0.000	0.560

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/4634-7: JECCS	0.000	0.000	0.000	0.000	0.000	7.647	11.208	1.466	13.922	0.000	34.243

D. Acquisition Strategy

(U) Transition Switch Module (TSM): calls for the use and integration of proven commercial switching technologies of sufficient maturity for production with level of effort RDT&E at this stage of the program for developmental efforts related to option year engineering. Seeks commercial solutions that are fully compatible and interoperable with other Communication Networking Systems (CNS) programs that are fielded and/or being fielded e.g., DTC, TDN, Joint Enhanced Core Communication System (JECCS) etc.

(U) Network Planning and Management (NPM), formerly Joint Network Management Systems (JNMS): The NPM acquisition strategy emphasizes the use of Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) products. The USMC GOTS SPEED acquisition strategy is for spiral development with the goal of releasing one new version of software annually. The SPEED contract method is through a sole source Blanket Purchase Agreement (BPA) using Fixed Price Task Orders based on the developer's GSA schedule for manhours.

(U) Expeditionary Command and Control Suite (ECCS): will use the evolutionary acquisition strategy and pursue a competitive firm fixed price contract. Major concerns will be interoperability and compatibility with existing systems and components. R&D effort will focus on developing and integrating "miniaturized" versions of existing components. Emerging technologies such as VoIP and Secure Wireless will also be addressed in the out year R&D effort. R&D funding drops as system goes into production.

(U) Tactical Data Network (TDN): is an evolutionary acquisition strategy. As new products and industry standards are produced, they are to be tested and integrated into TDN equipment. RDTE funding is required to test and evaluate Commercial Off-The-Shelf (COTS) items which will be integrated into TDN Gateways and Data Distribution Systems (DDS) to fulfill Operational Requirements Document (ORD) requirements. FY10 and FY11 funding for TDN is included in the WFN-T line.

(U) TDN Data Distribution System - Modular (DDS-M): is an evolutionary acquisition strategy that will modify existing and legacy programs to add emerging capabilities for interoperability. The tenets of the WFN-T acquisition strategy are Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS), firm fixed-price competitive contracts for material solutions to meet emerging requirements. WFN-T may reuse other Services' development and ride external contracts that satisfy requirements and analysis of alternatives.

(U) Joint Enhanced Core Communications System-Refresh (JECCS-R): The JECCS-R acquisition strategy is based upon an evolutionary acquisition where most components are Commercial Off-the-Shelf (COTS). As an evolutionary acquisition, the JECCS will continue to be upgraded and improved as technology advances.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206313M: <i>Marine Corps Comms Systems</i>	2276: <i>Comms Switching and Control Sys</i>

Software version upgrades will be included. COTS and GOTS will be used to the maximum extent possible. The task order recipient will be responsible for updating the JECCS-R system operations and maintenance manual, which provides an integrated view of the equipment and interoperation of all components.

(U) Digital Technical Control (DTC): is an evolutionary acquisition strategy. As new products and industry standards are produced, they are to be tested and integrated into DTC equipment. Major concerns will be interoperability and compatibility with existing systems and components. R&D effort will focus on developing and integrating improved versions of existing components.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NPM (SPEED)	C/FFP	MCSC, Northrop Grumman:VA, FL	5.926	1.403	Aug 2011	0.517	Jan 2012	-		0.517	0.000	7.846	
TSM	SS/FFP	MCSC, EDO:VA, SC	0.925	0.215	Jun 2011	0.804	Jan 2012	-		0.804	0.000	1.944	
Subtotal			6.851	1.618		1.321		-		1.321	0.000	9.790	

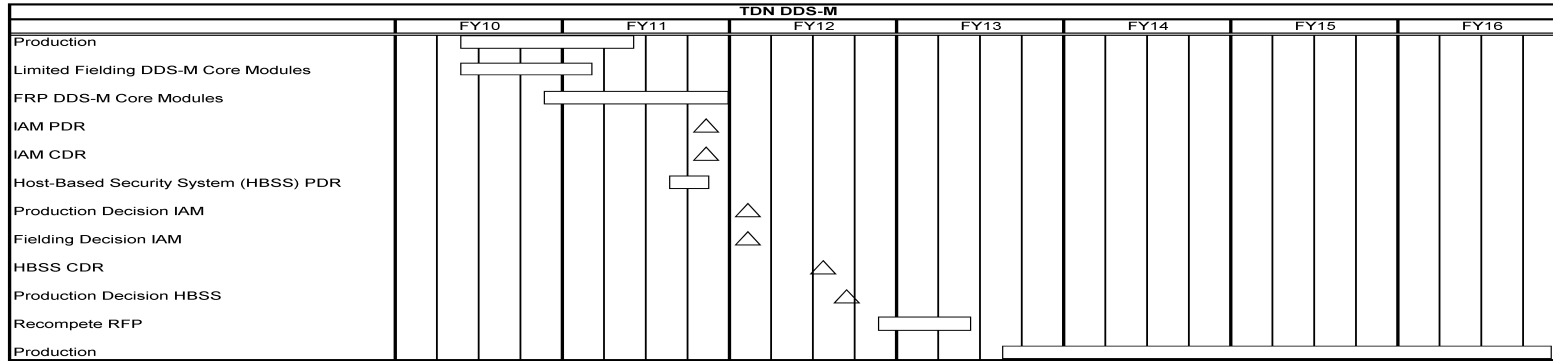
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TSM Engineering Support	SS/FFP	MCSC, MITRE:VA	0.426	0.100	Jun 2011	0.500	Jan 2012	-		0.500	0.000	1.026	
ECCS Support	C/FFP	MCSC, QinetiQ:VA	0.691	0.429	Mar 2011	0.039	Apr 2012	-		0.039	0.000	1.159	
WFN-T Engineering Support	SS/FFP	US Army, MITRE:VA	0.636	1.246	Jun 2011	-		-		-	0.000	1.882	
DDS-M Engineering Support	SS/FFP	US Army, MITRE:VA	-	-		0.514	Mar 2012	-		0.514	0.000	0.514	
Subtotal			1.753	1.775		1.053		-		1.053	0.000	4.581	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
WFN-T T&E	MIPR	JITC:Ft. Huachuca, AZ	-	0.900	Jan 2011	-		-		-	0.000	0.900	
DTC T&E	MIPR	JITC:Ft. Huachuca, AZ	-	-		0.001	Mar 2012	-		0.001	0.000	0.001	
DDS-M T&E	WR	MCOTEA:VA	-	-		0.300	Mar 2012	-		0.300	0.000	0.300	
DDS-M T&E	MIPR	JITC:Ft. Huachuca, AZ	-	-		0.080	May 2012	-		0.080	0.000	0.080	
Subtotal			-	0.900		0.381		-		0.381	0.000	1.281	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>



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		Transition Switch Module (TSM)																															
		FY10				FY11				FY12				FY13				FY14				FY15				FY16							
RFP Release																																	
Contract Award																																	
Fielding																																	
-POR Procurement/Production																																	
-FOC																																	
Level of Effort option year RDT&E development																																	
GTF (202K) Procurement and Fielding																																	
Technology Insertion																																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>

ECCS Schedule

Fiscal Year	FY10				FY11				FY12				FY13				FY14				FY15				FY16			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Phases and Milestones		MDD/MSB				LRIP			FRP																			
Contracting Events		Source Selection																										
Technical Reviews																												
Testing Events																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2276: <i>Comms Switching and Control Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2276				
TDN DDS-M Production	2	2010	2	2011
TDN DDS-M Core Modules - Limited Fielding	2	2010	1	2011
TDN DDS-M Core Modules - FRP	4	2010	4	2011
TDN DDS-M - IAM PDR	4	2011	4	2011
TDN DDS-M - IAM CDR	4	2011	4	2011
TDN DDS-M - Host Based Security System (HBSS) PDR	3	2011	4	2011
TDN DDS-M - IAM Production Decision	1	2012	1	2012
TDN DDS-M - IAM Fielding Decision	1	2012	1	2012
TDN DDS-M - HBSS CDR	3	2012	3	2012
TDN DDS-M - HBSS Production Decision	3	2012	3	2012
TDN DDS-M - Recompete RFP	4	2012	2	2013
TDN DDS-M Production 2	3	2013	4	2016
NPM/SPEED RFP	3	2012	3	2012
NPM/SPEED Technical Review - SRR 1	2	2010	2	2010
NPM/SPEED Technical Review - SRR 2	4	2011	4	2011
NPM/SPEED Technical Review - SRR 3	4	2013	4	2013
NPM/SPEED Technical Review - SRR 4	2	2015	2	2015
NPM/SPEED Technical Review - SRR 5	4	2016	4	2016
NPM/SPEED Technical Review - TRR 1	4	2010	4	2010
NPM/SPEED Technical Review - TRR 2	1	2012	1	2012
NPM/SPEED Technical Reivew - TRR 3	1	2014	1	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NPM/SPEED Technical Review - TRR 4	3	2015	3	2015
NPM/SPEED Developmental Test - PAT 1	1	2011	1	2011
NPM/SPEED Developmental Test - PAT 2	2	2012	2	2012
NPM/SPEED Developmental Test - PAT 3	1	2014	2	2014
NPM/SPEED Developmental Test - PAT 4	4	2015	4	2015
NPM/SPEED Operational Test - FAT 1	1	2010	1	2010
NPM/SPEED Operational Test - FAT 2	2	2011	2	2011
NPM/SPEED Operational Test - FAT 3	3	2012	3	2012
NPM/SPEED Operational Test - FAT 4	2	2014	3	2014
NPM/SPEED Operational Test - FAT 5	4	2015	1	2016
NPM/SPEED Contract Award 1	3	2010	3	2010
NPM/SPEED Contract Award 2	4	2011	4	2011
NPM/SPEED Contract Award 3	4	2013	4	2013
NPM/SPEED Contract Award 4	3	2015	3	2015
NPM/SPEED Fielding/Deliveries - Ver 10.0.3	2	2010	1	2011
NPM/SPEED Fielding/Deliveries - Ver 11.0	3	2011	1	2012
NPM/SPEED Fielding/Deliveries - Ver 11.0.1	4	2012	3	2013
NPM/SPEED Fielding/Deliveries - Ver 11.X.X	1	2014	4	2014
NPM/SPEED Fielding/Deliveries - Version 11.X.X	4	2015	3	2016
NPM/SPEED Operations & Support	1	2010	4	2016
TSM RFP Release	3	2011	3	2011
TSM Contract Award	3	2012	3	2012
TSM POR Procurement/Production	1	2010	4	2011
TSM FOC	3	2011	3	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
TSM Level of Effort option year RDTE development	1	2010	4	2012
TSM GTF Procurement and fielding	1	2010	1	2011
TSM Technology Insertion	4	2010	4	2016
ECCS MDD/MS B	4	2010	4	2010
ECCS MS C	1	2011	1	2011
ECCS LRIP	1	2011	3	2011
ECCS FRPDR	3	2011	3	2011
ECCS FRP	4	2011	4	2012
ECCS IOC	2	2012	2	2012
ECCS FOC	4	2012	4	2012
ECCS Draft RFP	4	2010	4	2010
ECCS RFP Release	1	2011	1	2011
ECCS Source Selection	1	2011	1	2011
ECCS Contract Award	2	2011	2	2011
ECCS SFR	1	2011	1	2011
ECCS IBR2	1	2011	1	2011
ECCS FCA	3	2011	3	2011
ECCS PCA	4	2011	4	2011
ECCS SIT/JITC	3	2011	3	2011
ECCS Functional Acceptance Test	1	2011	1	2011
ECCS OA	3	2011	4	2011
ECCS RAM	1	2011	2	2011
ECCS 80% ETM	2	2011	3	2011
ECCS I&KPT	4	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>				PROJECT 2277: <i>System Engineering and Integration</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2277: <i>System Engineering and Integration</i>	6.509	5.580	9.650	-	9.650	9.752	9.936	9.997	7.680	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project provides funds for engineering, test, and evaluation activity, which ensures that the systems being developed within the Program Element (PE) employ consistent standards for interoperability and, to the maximum extent feasible, use hardware and software which is uniform and standard across programs. Marine Air-Ground Task Force Command, Control, Communications, Computers, and Intelligence Systems Engineering and Integration, and Coordination. (MAGTF C4I SEI&C) provides for the centralized planning and execution of Marine Corps Enterprise Information Technology and National Security Systems. It develops, certifies, and manages the configurations of the Marine Corps Enterprise Systems and Technical Architecture products and uses these to support enterprise-level systems engineering. It supports unified technical representation to joint and coalition communities for Marine Corps Systems and provides top-tier system engineering support to address system of systems technical issues. It is used to conduct direct Marine Expeditionary Unit/Marine Expeditionary Force (MEU/MEF) support in system integration testing with USN. This is part of Deploying Group Systems Integration Testing (DGSIT)) and workups supporting Marine Expeditionary Force (MEF) deployments. It is also used to support Marine Corps systems coordination and involvement in DoD initiatives to include ForceNet, Global Information Grid Enterprise Services (GIGES), and other Deployable Information Systems Architecture DISA/NETWARCOM efforts.

Joint Distributed Engineering Plant (JDEP) directly supports DoD mandated directive CJCSI 6212.01F, to evaluate the interoperability of the holistic Marine Air Ground Task Force (MAGTF) Command Control Communications Intelligence (C4I) Capability produced by Marine Corps Systems Command (MARCORSYSCOM). This evaluation will be accomplished via the MAGTF C4I Capability Certification (MC3) process. Using MC3, composite capabilities are evaluated for their collective interoperability with joint forces; support integration of emergent systems with systems already fielded, and to conduct critical engineering analysis capable of isolating and correcting capability deficiencies and optimize system of systems performance.

Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is a Joint Chiefs-of-Staff (JCS)/DoD-mandated program for joint development, implementation, and testing of tactical datalinks and US Message Text Format (MTF) under the direction of the Defense Information Systems Agency (DISA) and Office of the Secretary of Defense/Networks and Information Integration (OASD/NII) per the Commander Joint Chiefs of Staff (CJCSI) 6610.01C and CJCS16241.04 for US Military Tactical Forces (USMTF).

Coalition Warrior Interoperability Demonstration (CWID) (a.k.a. Joint Warrior InterOperability Demonstration (JWID)) is a Joint Chiefs-of-Staff (JCS) and a Chairman of the Joint Chiefs annual event. CWID remains the premier event to investigate interagency and coalition interoperability problems. CWID defines solutions that can be applied in the operational community. CWID's mission is to conduct military operations to deter, prevent, and defeat threats and aggressions aimed at the US its territories and assigned areas of responsibilities as directed by the President or Secretary of Defense.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2277: <i>System Engineering and Integration</i>
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Marine Air-Ground Task Force Command, Control, Communications, Computers, and Intelligence Systems Engineering and Integration, and Coordination. (MAGTF C4I SEI&C) provides for the centralized planning and execution of Marine Corps Enterprise Information Technology and National Security Systems. It develops, certifies, and manages the configurations of the Marine Corps Enterprise Systems and Technical Architecture products and uses these to support enterprise-level systems engineering. It supports unified technical representation to joint and coalition communities for Marine Corps Systems and provides top-tier system engineering support to address system of systems technical issues. It is used to conduct direct Marine Expeditionary Unit/Marine Expeditionary Force (MEU/MEF) support in system integration testing with USN. This is part of Deploying Group Systems Integration Testing (DGSIT)) and workups supporting Marine Expeditionary Force (MEF) deployments. It is also used to support Marine Corps systems coordination and involvement in DoD initiatives to include ForceNet, Global Information Grid Enterprise Services (GIGES), and other Deployable Information Systems Architecture DISA/NETWARCOM efforts.

Expeditionary Energy Office (E2O): Energy is a top priority for the USMC as stated by the Commandant, and in support of this priority, he created the USMC Expeditionary Energy Office (E2O), with the mission to analyze, develop, and direct the Marine Corps' energy strategy in order to optimize expeditionary capabilities across all warfighting functions. E2O's role is to advise the Marine Requirements Oversight Council (MROC) on all energy and resource related requirements, acquisitions, and programmatic decisions. This office and funding will support the USMC Energy Strategy, which is the framework for the Marine Corps that communicates the Commandant's vision, mission, goals and objectives for expeditionary and installations energy. Additionally, this funding will enable execution of the USMC Energy Strategy Implementation Guidance which identifies specified tasks and responsibilities and timeframes for achievement. These two documents align the Marine Corps with operational energy management and strategy requirements established in the National Defense Authorization Act 2009, DoD directives and SECNAV goals. This funding will support the office's requirements for technical, programmatic, and administrative support.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Expeditionary Energy Office (E2O)</p> <p align="right">Articles:</p> <p>FY 2012 Base Plans: Funds will provide Expeditionary "Smart" Power Grids, Expeditionary Alternative (PV Solar) Energy Systems and Alternative (Bio) fuels to analyze, develop, and direct the Marine Corps' energy strategy in order to optimize expeditionary capabilities across all warfighting functions. Additionally, this funding will enable execution of the USMC Energy Strategy Implementation Guidance which identifies specified tasks and responsibilities and timeframes for achievement. These two documents align the Marine Corps with operational energy management and strategy requirements established in the National Defense Authorization Act 2009, DoD directives and SECNAV goals. This funding will support the office's requirements for technical, programmatic, and administrative support."</p>	-	-	2.470 0	-	2.470 0
<p>Title: *JWID: Deter, prevent, and defeat threats and aggressions aimed at the US.</p> <p align="right">Articles:</p>	1.216 0	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2277: <i>System Engineering and Integration</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: Coalition Warrior Interoperability Demonstration (CWID) (a.k.a. Joint Warrior InterOperability Demonstration (JWID)) is a Joint Chiefs-of-Staff (JCS) and a Chairman of the Joint Chiefs annual event. CWID remains the premier event to investigate interagency and coalition interoperability problems. CWID defines solutions that can be applied in the operational community. CWID's mission is to conduct military operations to deter, prevent, and defeat threats and aggressions aimed at the US its territories and assigned areas of responsibilities as directed by the President or Secretary of Defense.</p> <p>FY 2010 Accomplishments: JWID: Deter, prevent, and defeat threats and aggressions aimed at the US.</p>					
<p>Title: *JINTACCS: JCS and OASD/NII Data Links Testing.</p> <p align="right">Articles:</p>	1.497 0	1.611 0	1.078 0	-	1.078 0
<p>Description: Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is a Joint Chiefs-of-Staff (JCS)/DoD-mandated program for joint development, implementation, and testing of tactical data links and US Message Text Format (MTF) under the direction of the Defense Information Systems Agency (DISA) and Office of the Secretary of Defense/Networks and Information Integration (OASD/NII) per the Commander Joint Chiefs of Staff (CJCSI) 6610.01C and CJCS16241.04 for US Military Tactical Forces (USMTF).</p> <p>FY 2010 Accomplishments: JINTACCS: Joint development, implementation, and testing of data links under the direction of the JCS and OASD/NII.</p> <p>FY 2011 Plans: JINTACCS: Joint development, implementation, and testing of data links under the direction of the JCS and OASD/NII.</p> <p>FY 2012 Base Plans: JINTACCS: Joint development, implementation, and testing of data links under the direction of the JCS and OASD/NII.</p>					
<p>Title: *SEIC: Engineering and Technical Support</p> <p align="right">Articles:</p>	2.342 0	2.492 0	5.070 0	-	5.070 0
<p>Description: Marine Air-Ground Task Force Command, Control, Communications, Computers, and Intelligence Systems Engineering and Integration, and Coordination. (MAGTF C4I SEI&C) provides for the centralized</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>		PROJECT 2277: <i>System Engineering and Integration</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
<p>planning and execution of Marine Corps Enterprise Information Technology and National Security Systems. It develops, certifies, and manages the configurations of the Marine Corps Enterprise Systems and Technical Architecture products and uses these to support enterprise-level systems engineering. It supports unified technical representation to joint and coalition communities for Marine Corps Systems and provides top-tier system engineering support to address system of systems technical issues. It is used to conduct direct Marine Expeditionary Unit/Marine Expeditionary Force (MEU/MEF) support in system integration testing with USN. This is part of Deploying Group Systems Integration Testing (DGSIT)) and workups supporting Marine Expeditionary Force (MEF) deployments. It is also used to support Marine Corps systems coordination and involvement in DoD initiatives to include ForceNet, Global Information Grid Enterprise Services (GIGES), and other Deployable Information Systems Architecture DISA/NETWARCOM efforts.</p> <p><i>FY 2010 Accomplishments:</i> MAGTF SEI&C: Engineering and technical support for configuration management of MAGTF C4I systems. Review and submittal of multiple Integration Support Plans (ISPs) and Tactical ISPs (TISPs). Pre-deployment assistance to I MEF and multiple MEUs. Participation in ForceNet, NCES, GIGES and other Joint DoD initiatives. Plans are for continued activities to support the interoperability and jointness of the USMC Enterprise IT/NSS systems.</p> <p><i>FY 2011 Plans:</i> MAGTF SEI&C: Engineering and technical support for configuration management of MAGTF C4I systems. Review and submittal of multiple Integration Support Plans (ISPs) and Tactical ISPs (TISPs). Pre-deployment assistance to I MEF and multiple MEUs. Participation in ForceNet, NCES, GIGES and other Joint DoD initiatives. Plans are for continued activities to support the interoperability and jointness of the USMC Enterprise IT/NSS systems.</p> <p><i>FY 2012 Base Plans:</i> MAGTF SEI&C: Engineering and technical support for configuration management of MAGTF C4I systems. Review and submittal of multiple Integration Support Plans (ISPs) and Tactical ISPs (TISPs). Pre-deployment assistance to I MEF and multiple MEUs. Participation in ForceNet, NCES, GIGES and other Joint DoD initiatives. Plans are for continued activities to support the interoperability and jointness of the USMC Enterprise IT/NSS systems. FY12 level of funding is needed to accomplish the technical objectives for integration and interoperability between MAGTF systems and systems of systems.</p>					
Title: *JDEP: Develop Certifications and Conduct MAGTF C4I Capability					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
	1.454	1.477	1.032	-	1.032

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2277: <i>System Engineering and Integration</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles:	0	0	0		0
<p>Description: Joint Distributed Engineering Plant (JDEP) directly supports DoD mandated directive CJCSI 6212.01F, to evaluate the interoperability of the holistic Marine Air Ground Task Force (MAGTF) Command Control Communications Intelligence (C4I) Capability produced by Marine Corps Systems Command (MARCORSYSCOM). This evaluation will be accomplished via the MAGTF C4I Capability Certification (MC3) process. Using MC3, composite capabilities are evaluated for their collective interoperability with joint forces; support integration of emergent systems with systems already fielded, and to conduct critical engineering analysis capable of isolating and correcting capability deficiencies and optimize system of systems performance.</p> <p>FY 2010 Accomplishments: JDEP: Conduct development of the MAGTF C4I Capability Certification process which involved the creation of capability based test threads. Additionally, create Joint Test Threads and participate in a JFCOM sponsored joint distributed test event.</p> <p>FY 2011 Plans: JDEP: Conduct development of the MAGTF C4I Capability Certification process which involved the creation of capability based test threads. Additionally, create Joint Test Threads and participate in a JFCOM sponsored joint distributed test event.</p> <p>FY 2012 Base Plans: JDEP: Conduct development of the MAGTF C4I Capability Certification process which involved the creation of capability based test threads. Additionally, create Joint Test Threads and participate in a JFCOM sponsored joint distributed test event.</p>					
Accomplishments/Planned Programs Subtotals	6.509	5.580	9.650	-	9.650

C. Other Program Funding Summary (\$ in Millions)
N/A

D. Acquisition Strategy
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2277: <i>System Engineering and Integration</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CWID1	C/FP	NSWC:Dahlgren, VA	1.446	-		-		-		-	0.000	1.446	
CWID2	WR	NSWC:Dahlgren, VA	0.200	-		-		-		-	0.000	0.200	
CWID	C/FP	MCSC:Quantico, VA	0.130	-		-		-		-	0.000	0.130	
CWID	C/FP	JTIC:Indian Head, MD	0.076	-		-		-		-	0.000	0.076	
JINTACCS	C/FP	NSWC:Dahlgren, VA	0.070	-		-		-		-	0.000	0.070	
Subtotal			1.922	-		-		-		-	0.000	1.922	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CWID	C/FP	OSEC:Stafford, VA	0.724	-		-		-		-	0.000	0.724	
MAGTF SEI&C	C/FP	OSEC:Stafford, VA	3.110	1.583	Apr 2011	2.520	Apr 2012	-		2.520	0.000	7.213	
MAGTF SEI&C	C/FP	MCSC:Quantico, VA	0.145	0.200	Apr 2011	0.800	Apr 2012	-		0.800	0.000	1.145	
MAGTF SEI&C	WR	NSWC:Dahlgren, VA	0.453	0.550	Nov 2010	0.750	Apr 2012	-		0.750	0.000	1.753	
JDEP	C/FP	NSWC:Dahlgren, VA	1.120	0.540	Dec 2010	0.344	Apr 2012	-		0.344	0.000	2.004	
JDEP	C/FP	OSEC:Carlsbad, CA	0.944	0.460	Oct 2011	0.348	Apr 2012	-		0.348	0.000	1.752	
JINTACCS	C/FP	OSEC:Stafford, VA	1.162	1.000	Apr 2011	0.742	Apr 2012	-		0.742	0.000	2.904	
JINTACCS	C/FP	MCTSSA:Cmp Pendtton CA	2.000	0.611	Jan 2011	0.336	Apr 2012	-		0.336	0.000	2.947	
EEO (E20)	WR	NWSC:Crane, IN	-	-		0.920	Jan 2012	-		0.920	0.000	0.920	
EEO (E20)	C/FP	NWSC:Cradderock, MD	-	-		0.875	Jan 2012	-		0.875	0.000	0.875	
EEO (E20)	C/FP	SPARWAR:Charleston, SC	-	-		0.675	Jan 2012	-		0.675	0.000	0.675	
Subtotal			9.658	4.944		8.310		-		8.310	0.000	22.912	

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>				PROJECT 2278: <i>Air Defense Weapons System</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2278: <i>Air Defense Weapons System</i>	5.025	5.938	2.171	-	2.171	2.271	3.404	3.519	3.578	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project encompasses two sub-element programs which are part of the Integrated Air Defense System for the Marine Corps.

Ground Based Air Defense Transformation (GBAD-T) - Based upon the deployment of the Low Altitude Air Defense (LAAD) Battalions and their employment of the Stinger Missile, GBAD-T transforms Air Defense equipment through technology insertion and equipment repackaging to address capability gaps as the result of equipment obsolescence and the emergent and evolving threats to the Marine Air Ground Task Force (MAGTF). GBAD-T consist of three efforts: 1) sustainment of currently fielded LAAD equipment/assets; 2) fielding and support of the Advanced Man-Portable Air Defense System (A-MANPADS) that replaces the Avenger Weapon System and existing MANPADS vehicles; 3) replacing the Remote Terminal Unit (RTU), an effort that replaces an 18 pound laptop computer that provides Situational Awareness and Command and Control to the Stinger and A-MANPAD teams. The RTU replacement will interface with and be capable of receiving a Common Aviation Command and Control Systems (CAC2S) broadcasted link. It will also be capable of interfacing with legacy MACCS.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *GBAD TRANSFORMATION: Test and Evaluation (Remote Terminal Unit Replacement)	0.357	-	-	-	-
Articles:	0				
FY 2010 Accomplishments: Conducted field user evaluation of A-MANPADS Increment I C4 Suite enhancements in accordance with the approved Test and Evaluation Strategy.					
Title: *GBAD TRANSFORMATION: Program Management Services	0.122	0.107	0.440	-	0.440
Articles:	0	0	0		0
FY 2010 Accomplishments: Continued to support developmental testing in accordance with approved test and evaluation strategy.					
FY 2011 Plans: Support the completion of developmental testing of A-MANPADS Increment I.					
FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2278: <i>Air Defense Weapons System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Support the research and development of a replacement for the Stinger missile. Title: *GBAD TRANSFORMATION: Product Development (C2 Integration) Articles:	0.282 0	0.473 0	0.742 0	-	0.742 0
FY 2010 Accomplishments: Continued developmental testing to include field user evaluation. Integration of hardware and software for a C2 interface solution. FY 2011 Plans: Testing to include hardware and software certification and information assurance certification. FY 2012 Base Plans: Continuing effort to research a replacement weapon for Stinger.					
Title: *GBAD TRANSFORMATION: Product Development (Remote Terminal Unit Replacement) Articles:	0.352 0	-	-	-	-
FY 2010 Accomplishments: Integration of Commercial-off-the-shelf and Nondevelopmental Item Remote Terminal Unit replacement components into A-MANPADS Increment I.					
Title: *GBAD TRANSFORMATION: Integration Development (Missile Integration) Articles:	3.380 0	4.991 0	0.989 0	-	0.989 0
FY 2010 Accomplishments: Participated in multiple vendor and Government sponsored GBAD capabilities demonstrations. FY 2011 Plans: Multiple vendor and Government participation in a Government sponsored GBAD capabilities demonstration. FY 2012 Base Plans: Multiple vendor and Government participation in a Government sponsored GBAD capabilities demonstration.					
Title: *GBAD TRANSFORMATION: Support Costs (MCTSSA/MCCDC/Crane support) Articles:	0.532 0	0.367 0	-	-	-
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2278: <i>Air Defense Weapons System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
GBAD-T will continue to support Stinger live-fire exercises at the LAAD Battalions and the Stinger School house, ensuring LAAD gunners obtain and retain military occupational specialty proficiency.					
<i>FY 2011 Plans:</i> GBAD-T will continue to support Stinger live-fire exercises at the LAAD Battalions and the Stinger School house, ensuring LAAD gunners obtain and retain military occupational specialty proficiency.					
Accomplishments/Planned Programs Subtotals	5.025	5.938	2.171	-	2.171

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/300600: <i>GBAD-T</i>	2.352	5.175	12.287	0.000	12.287	12.439	12.497	12.778	5.839	Continuing	Continuing
• PMC/70000: <i>GBAD-T</i>	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

GBAD- TRANSFORMATION: Designated an Abbreviated Acquisition Program (AAP), GBAD-T effects the rapid transition from the Avenger/MANPADS weapon system to the more mobile, flexible, and maintainable Advanced MANPADS. The AAP is principally comprised of integrating Government Off The Shelf (GOTS) equipment and Non-developmental Items (NDI).

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2278: <i>Air Defense Weapons System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	WR	NSWC:Crane.IN	2.904	0.520	Jan 2011	-		-		-	0.000	3.424	
GBAD-T	MIPR	Army:AMRDEC	2.875	1.591	Jan 2011	0.742	Jan 2012	-		0.742	0.000	5.208	
GBAD-T	MIPR	PMA-259:China Lake	1.500	0.875	Feb 2011	0.989	Feb 2012	-		0.989	0.000	3.364	
GBAD-T	Various	TBD:Not Specified	3.070	2.478	Feb 2011	-		-		-	0.000	5.548	
GBAD-T	WR	NSWC:Crane,IN (PAS-13 HW)	1.469	-		-		-		-	0.000	1.469	
GBAD-T	C/FP	EG&G:Stafford, VA	0.489	-		-		-		-	0.000	0.489	
GBAD-T	C/FP	DRS Tech:Palm Bay, FL	0.215	-		-		-		-	0.000	0.215	
GBAD-T	C/FP	Raytheon:San Diego, CA	3.700	-		-		-		-	0.000	3.700	
GBAD-T	C/FP	MCSC:Quantico, VA	0.464	-		-		-		-	0.000	0.464	
GBAD-T	C/FP	L3:San Diego, CA	1.473	-		-		-		-	0.000	1.473	
Subtotal			18.159	5.464		1.731		-		1.731	0.000	25.354	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	WR	NSWC:Crane, IN	0.526	-		0.440	Jan 2012	-		0.440	0.000	0.966	
GBAD-T	C/FP	MCCDC:Quantico, VA	1.660	0.250	Feb 2011	-		-		-	0.000	1.910	
GBAD-T	WR	MCTSSA:Camp Pendleton, CA	0.170	0.050	Feb 2011	-		-		-	0.000	0.220	
GBAD-T	WR	MCSC:Quantico, VA	0.061	0.067	Jan 2011	-		-		-	0.000	0.128	
GBAD-T	C/FP	MCOTEA:Quantico, VA	0.257	-		-		-		-	0.000	0.257	
JFIIT	SS/FP	RNB:Stafford, VA	1.425	-		-		-		-	0.000	1.425	
JFIIT	WR	MCSC:Quantico, VA	0.130	-		-		-		-	0.000	0.130	
Subtotal			4.229	0.367		0.440		-		0.440	0.000	5.036	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2278: <i>Air Defense Weapons System</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	MIPR	WSMR:NM	0.872	-		-		-		-	0.000	0.872	
GBAD-T	MIPR	Not Specified:Aberdeen, MD	0.047	-		-		-		-	0.000	0.047	
GBAD-T	C/FP	MCOTEA:Quantico, VA	0.672	-		-		-		-	0.000	0.672	
GBAD-T	MIPR	NATC:NM	0.710	-		-		-		-	0.000	0.710	
JFIIT1	Reqn	MCSC:Quantico, VA	0.318	-		-		-		-	0.000	0.318	
JFIIT2	WR	4th MAW:Not Specified	0.085	-		-		-		-	0.000	0.085	
JFIIT3	WR	MCTSSA:Camp Pendelton, CA	0.127	-		-		-		-	0.000	0.127	
JFIIT4	WR	MCSC:Quantico, VA	0.047	-		-		-		-	0.000	0.047	
Subtotal			2.878	-		-		-		-	0.000	2.878	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	C/FP	MCSC:Quantico, VA	0.417	0.107	Feb 2011	-		-		-	0.000	0.524	
JFIIT	Reqn	MCSC:Quantico, VA	0.194	-		-		-		-	0.000	0.194	
Subtotal			0.611	0.107		-		-		-	0.000	0.718	

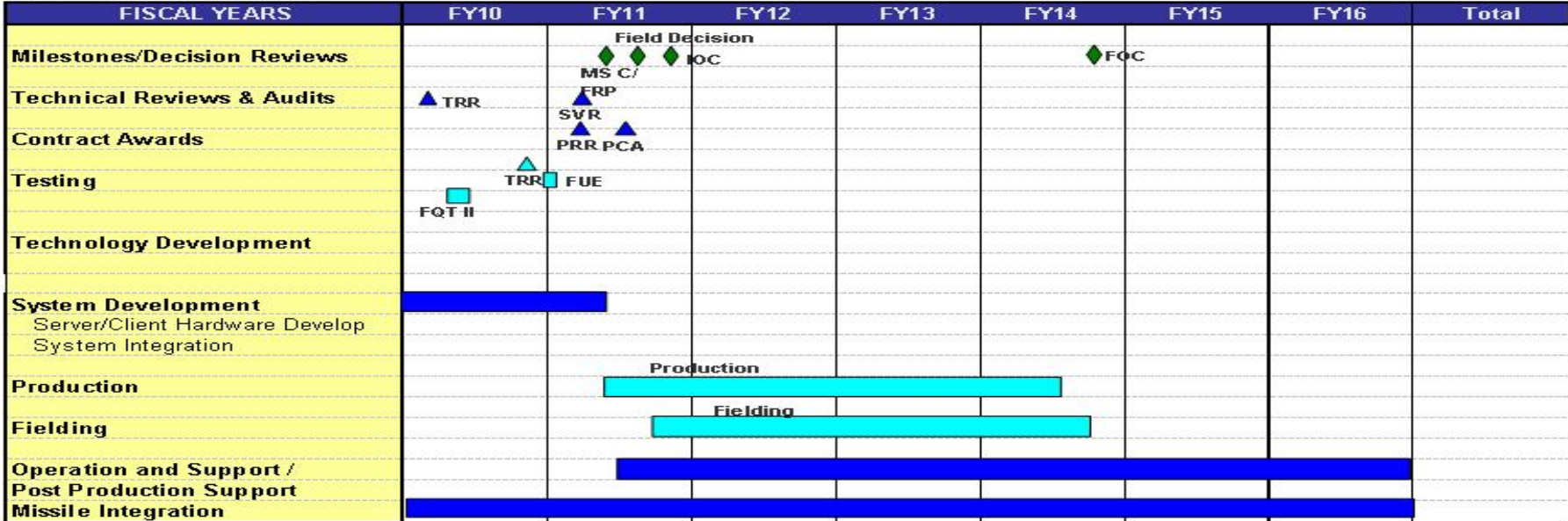
	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		25.877	5.938		2.171		-	2.171	0.000	33.986	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2278: <i>Air Defense Weapons System</i>

GBAD-T Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2278: <i>Air Defense Weapons System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2278				
GBAD-T Milestone C	2	2011	2	2011
GBAD-T Full Rate Production	2	2011	2	2011
GBAD-T Fielding Decision	3	2011	3	2011
GBAD-T IOC	4	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2510: <i>MAGTF CSSE & SE</i>	64.774	33.538	43.185	-	43.185	51.778	52.956	44.401	21.054	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) The Marine Air Ground Task Force (MAGTF) Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contributes to the Combatant Commander's Common Operating Picture to support rapid accurate decision making.

MARINE CORPS COMMON HARDWARE SUITE (MCHS) provides Commercial-Off-The-Shelf (COTS) workstations (desktop/laptop), servers and other IT hardware to support the Operating Force and other non-Navy Marine Corps Intranet (NMCI) Marine Corps customers. MCHS provides support for two principal groups: 1) Approximately 50 United States Marine Corps (USMC) Tactical and Functional Programs of Record that use COTS IT hardware as part of their fielded systems; and 2) Tactical and other Marine Corps customers not supported by NMCI such as Marine Corps Forces, Europe/Marine Corps Forces, Korea and stand-alone Marine Corps units and schoolhouses. The goal of the program is to enhance overall IT system interoperability and lower the total cost of ownership by centralizing procurement of COTS IT hardware, reducing the number of different configurations of computers, and providing worldwide integrated logistics support for all fielded MCHS hardware. Rapid technology insertion provides ability to develop, test, and evaluate COTS hardware and software configurations for rapid fielding purposes.

GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS (GCSS-MC) is pursuing an Evolutionary Acquisition (EA) strategy in order to field operationally suitable and supportable capabilities in the shortest time possible that meets the Logistics Advocate goals. EA offers the fastest method to field this highest of advocate priorities and allows for requirements to be time-phased as the users become more familiar with the strengths and weaknesses of the fielded system. In addition to quicker fielding, an EA approach is particularly well suitable for software intensive programs and offers these benefits: rapid delivery of an initial capability with the explicit intent of delivering continuously improving capabilities in the future and a reduction in the "cycle time" from identification of emergent user requirements, priorities and fielding. The GCSS-MC will deliver capabilities in block increments. Block 1 focuses on delivery of retail supply functionality and fielding of this capability is divided into two major independent releases: Enterprise Release 1.1 and Deployed Access Release 1.2. Block 2 will expand the retail supply functionality of Block 1 by implementing Marine Corps-wide wholesale and retail warehouse management and automated information technologies, such as Radio Frequency Identification (RFID) and bar code scanning. Block 2 will concentrate on transportation, distribution and in-transit visibility by focusing on planning the modes, links and schedules of the intra-theater transportation and distribution system. Block 2 requirements analysis and program planning are scheduled to begin during FY12. GCSS-MC was designated an Acquisition Category (ACAT)IAM program in march 2004 and successfully completed a MS B review on June 8, 2007 and a MS C review on 28 May 2010.

TRANSPORTATION SYSTEMS PORTFOLIO (TSP) RDT&E funding supports the various ongoing and continuing efforts to modernize legacy USMC logistics systems including joint interoperability testing and certification and development to ensure compliance with information assurance testing and certification requirements. Legacy systems include joint programs supporting deployment and sustainment of theater assets as well as existing USMC legacy systems. Joint interoperability testing and certification is an ongoing and continuous requirement that is critical to ensuring all TSP applications are interoperable with other Department of Defense and Joint Services systems. There are also ongoing and continuing efforts to ensure that the legacy TSP applications comply with the latest information assurance

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206313M: <i>Marine Corps Comms Systems</i>	2510: <i>MAGTF CSSE & SE</i>

requirements. TSP applications are continually updating their security posture through software enhancements based upon the latest cyber threats. Also, mandatory DOD compliance with software patches ensure TSP systems are in compliance with new information assurance vulnerability assessments and ensure data integrity, confidentiality and availability.

JOINT FORCE REQUIREMENTS GENERATOR II (JFRG II) is a Global Command and Control System (GCCS) software application designed to provide DOD with a Joint Services, state-of-the-art, integrated, and deployable Automated Information System that supports strategic force movements. JFRG II provides rapid development of force data to satisfy operational planning and execution requirements. It serves as the essential link between service force requirements and validated/sourced unit data. JFRG II permits multi-level planning with entry of equipment and personnel data, transportation/movement data, and the phasing of the total force throughout the entire movement timeline. JFRG II contains an exhaustive joint data library and interfaces directly with the Joint Operation Planning and Execution System (JOPES). JFRG II can generate standard, executive, and ad hoc reports, perform database queries, and export or import data from Transportation Coordinators' Automated Information for Movement System (TC-AIMS) II, MAGTF Deployment Support System (MDSS) II and JOPES. JFRG II operates and functions in either a classified or unclassified environment.

PUBLIC KEY INFRASTRUCTURE (PKI) provides security objects and mechanisms used by Public Key (PK)-enabled systems and applications. The primary products of PKI are PK certificates and other certified objects used in conjunction with PK certificates. In addition to PK certificates, PKI provides on-line services (e.g. on-line certificate status checking), and supplies authenticated attributes in PK certificates and/or attribute certificates. PKI is one of a number of security solutions used to protect information and provide attributes to enable critical resources in the Global Information Grid, and is used concurrently with other solutions (e.g. in-line network encryptors to implement the defense-in-depth concept.) In conjunction with PK-enabled applications, PKI is used for identification, authentication, data confidentiality and integrity, and non-repudiation security services. Additionally, PKI functionally will be expanded to the Secret Internet Protocol Router Network (SIPRNET).

AUTOMATED IDENTIFICATION TECHNOLOGY (AIT) conducts research and development capabilities testing to expand and enhance options necessary to provide today's Commanders accurate information that allows better communication, coordinating, synchronization, and real-time logistics data transfer capabilities to programs that influence Warfighting evolutions. AIT devices, hardware and software's are continually evolving and RDT&E provides the necessary modernization progression to ensure that technologies deployed today meet the demands of the Commander's by providing faster, more reliable, increase data reliability and expedited logistics' architecture for Marine Corps-unique transportation, distribution and supply systems/software and applications. AIT forecast and plans to focus Web-basing, Web-enablement and Web Services software technology [i.e., machine-to-machine information exchanges between, our customers in the Military Services and Defense agencies, and the Defense industry, based upon the open-standard Extensible Markup Language (XML), Simple Object Access Protocol (SOAP), Military-Standard (MIL-STD) formatted protocols]. There are three primary reasons why AIT is pursuing this direction:

1. Web-based applications dramatically reduce the costs associated with fielding new software mission capabilities. (Only a limited handful of central servers need to be updated rather than thousands of employees' desktop computers.)
2. Web-basing and Web Services make AITs software applications much more adaptable to the ongoing and future changes in the Marine Corps procurement and financial management systems that are being implemented in accordance with the Department's Business Enterprise Architecture.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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3. AIT has found that Web-based application development is substantially less expensive than traditional client/server or mainframe-based application development. One of the reasons why Web-based development is less expensive is that Web-basing applications allows AIT to productively adapt large amounts of open source software packages with minimal or even zero acquisition and support costs. Also, this allows the Marine Corps to achieve their desired real-time supply chain information "reach-back" capabilities that may extend to the factory floors where parts, components, and systems are produced.

The AIT office will continue to test new Marine Corps-unique automated information application modules that will support: the Marine Corps and Defense Supply Chain via-the-Web capabilities; PKI-enabled Web application modules for Commanders worldwide. Also, RDT&E funding includes the continuation of testing and improving AITs accessibility and functionality for external customers, and the continuation of developing and implementing Web Services software technologies (e.g., Simple Object Access Protocol, Universal Discovery and Description Integration, Web Services Description Language).

BASE TELECOM [Base Telecommunications Infrastructure (BTI)] provides all Marine Corps installations with the base area network communications infrastructure that connects the end-user to the Defense Information Systems Agency (DISA) network. BTI sustains upgrades and enhances the telecommunications systems infrastructure for all Marine Corps Installations in order to meet the demands required to support the 5th Element of the MAGTF. BTI is designed to maintain industry currency as it relates to technological capabilities for all non-NMCI voice, video and data services via each installation's infrastructure. These data services include support for but are not limited to: Telephony (including voice over internet protocol), Enhanced 911, Video-Teleconferencing, Integrated Services Digital Network, Marine Corps Enterprise Network, Energy Monitoring Control Systems, Intrusion Detection Systems, Access Control Systems, Fire Alarm Control Networks and Fleet Training Systems. This includes supporting systems such as optical networks, telecommunications management systems, primary power, voice mail, teleconferencing, and outside plant infrastructure.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: BASE TELECOM (BTI)</p> <p align="right">Articles:</p> <p>FY 2012 Base Plans: Participation in the DISA Unified Capabilities (voice, video, collaboration, and data) pilot is critical to BTI modernization strategy. The RDT&E funds will be utilized for testing efforts in support of the DISA Unified Communications Everything over Ethernet effort. After the testing is reviewed by the Joint Interoperability Test Command (JITC), successfully evaluated products will be placed on the Approved Products List (APL).</p>	-	-	0.454 0	-	0.454 0
<p>Title: MARINE CORPS COMMON HARDWARE SUITE (MCHS)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments:</p>	1.444 0	1.508 0	1.610 0	-	1.610 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>In FY10, in addition to root cause analysis of failures of fielded gear, MCHS is using RDT&E funding to verify vendor specs for new products and to evaluate the applicability of both current and new products for procurement under the revised MCHS Indefinite Delivery, Indefinite Quantity contract with selected vendors. Environmental and stress testing includes rigorous environmental testing in accordance with (IAW) applicable Military Specifics (MILSPECs) to evaluate performance of COTS hardware under field conditions. Software loading is also performed by MCHS to verify compatibility with various hardware configurations.</p> <p>FY 2011 Plans: In FY11, RDT&E will continue to be used to conduct trend analysis on reported failures of fielded COTS hardware and to evaluate the ability of new products to meet Marine Corps needs.</p> <p>FY 2012 Base Plans: In FY12, RTD&E will continue to be used to conduct trend analysis on reported failures of fielded COTS hardware and rapid technology insertion which provides ability to develop, test, and evaluate COTS hardware and software configurations for rapid fielding purposes.</p>					
<p>Title: GCSS-MC LOGISTICS CHAIN MANAGEMENT (GCSS-MC)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: FY10 accomplishments include the successful Block 1 Milestone C decision. Block 1, Release 1.1 completed Field User Evaluations and Initial Operational Testing & Evaluation during FY10. Block 1, Release 1.2 continued the initial design, build and test activities in preparation for Systems Integration Developmental Test & Evaluation (SIDT&E).</p> <p>FY 2011 Plans: FY11 activities include the completion of the Block I, Release 1.1 system rollout to III Marine Expeditionary Force (MEF) and the beginning of the system rollout and user training for I & II MEF units. Training materials will be fielded to the USMC school houses. Block 1, Release 1.2 activities include the completion of the SIDT&E and Government Developmental Test & Evaluation (GDT&E). GCSS-MC Block 1 is scheduled for a Limited Release Follow-on Operational Test & Evaluation Acquisition Decision Memorandum (ADM) during the 4th Qtr.</p> <p>FY 2012 Base Plans: FY12 activities include the Block 1 Full Deployment Decision (FDD) scheduled during the 2nd Qtr. The Block 1, Release 1.1 rollout will be almost completed by the end of FY12 with Full Deployment scheduled for the 2nd Qtr of FY13. Block 1, Release 1.2 will complete the Follow-on Operational Test & Evaluation (FOT&E) and</p>	57.855 0	27.759 0	36.380 0	-	36.380 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
begin fielding in after the FDD decision. Block 2 requirements analysis and program planning are scheduled to begin during FY12 along with efforts to upgrade from Oracle eBusiness Suite Release 11 to Release 12. Block 2, Release 2.1 will expand the retail supply functionality of Block 1 by implementing Marine Corps-wide wholesale and retail warehouse management and automated information technologies, such as RFID and bar code scanning. Block 2, Release 2.2 will also focus on transportation, distribution and in-transit visibility by focusing on planning the modes, links and schedules of the intra-theater transportation and distribution system.					
Title: TRANSPORTATION SYSTEMS PORTFOLIO (TSP)	0.592	0.558	1.134	-	1.134
Articles:	0	0	0		0
FY 2010 Accomplishments: FY10 TSP funding is being utilized to continue development of deployment and distribution applications enhancements.					
FY 2011 Plans: FY11 TSP will begin integration efforts for the functionalities of Automated Manifest System - Tactical (AMS-TAC) and Warehouse to Warfighter (W2W). TSP will conduct pre-milestone "A" efforts for a follow-on Deployment Execution Support System (DESS) and will conduct the studies necessary to receive milestone "A" decision.					
FY 2012 Base Plans: FY12 TSP will conclude AMS-TAC and W2W integration efforts leading to easier integration with GCSS-MC. TSP will begin technology development efforts for the follow-on DESS leading to Milestone "B" decision and TSP will modernize the Transportation Management System (TMS) due to new legislative requirements.					
Title: JOINT FORCES REQUIREMENT GENERATION II (JFRG II)	1.207	0.360	0.260	-	0.260
Articles:	0	0	0		0
FY 2010 Accomplishments: FY10 funds being used to begin material solution analysis for the development for JFRG II V2.0, receive Technical Proposal for v2.0 development, receive a revised Functional Requirements list, receive Software Requirements Specification (SRS), and System Requirements Specification (SyRS) and Requirements Traceability Matrix (RTM). JFRG II will conduct a SFR necessary to receive Milestone B.					
FY 2011 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY11 funds will continue to fund Technology Development to reach Milestone B. FY 2012 Base Plans: FY12 funds will be utilized to conduct Engineering & Manufacturing Development to reach Milestone C.					
Title: PUBLIC KEY INFRASTRUCTURE (PKI) Articles:	1.672 0	1.312 0	1.547 0	-	1.547 0
FY 2010 Accomplishments: FY10 funding supports continued testing, correction of deficiencies, and implementation of PKI requirements for tactical applications, Marine Corp Enterprise IT Services (MCEITS) integration and SIPRNET capabilities. FY 2011 Plans: FY11 funding will provide for continued testing, correction of deficiencies, and implementation of PKI requirements for tactical applications, MCEITS and SIPRNET capabilities. FY 2012 Base Plans: FY12 funding will provide for continued testing, correction of deficiencies, and implementation of PKI requirements for tactical applications, MCEITS and SIPRNET capabilities.					
Title: AUTOMATED IDENTIFICATION TECHNOLOGY (AIT) Articles:	2.004 0	2.041 0	1.800 0	-	1.800 0
FY 2010 Accomplishments: AIT expanded capabilities of passive RFID system to allow the inclusion of additional visibility transactions to meet expanded DoD reporting requirements. Research new DoD transaction information to allow for population of interface data to the USMC receiving systems. FY 2011 Plans: AIT will upgrade the RFID infrastructure to include a mobile capability. Initial development and testing of AIT device interfaces with GCSS-MC. Expand communications capabilities for the active RFID (aRFID) infrastructure to include cellular and broadband capabilities. Expand use of pRFID outside the Supply and Distribution systems. AIT will expand the aRFID infrastructure to take advantage of newer technology to allow non-nodal tracking in response to after-action comments from Iraq. FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
AIT will provide the ability to control devices on the edgware and provide common infrastructure middleware capability to support multiple AIT technologies during FY12 - FY16.					
Accomplishments/Planned Programs Subtotals	64.774	33.538	43.185	-	43.185

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• BLI 463000 2: <i>CCR: MCHS Svrs/Wkstns</i>	17.284	18.398	1.889	9.273	11.162	1.831	1.640	1.666	1.694	Continuing	Continuing
• BLI 461700 1: <i>Combat Spt Sys: GCSS-MC</i>	6.929	27.158	13.897	0.000	13.897	4.948	12.739	9.299	9.461	Continuing	Continuing
• BLI 463500: <i>Comm & Elec Infra Spt: PKI</i>	0.799	0.930	0.998	0.000	0.998	1.184	1.450	1.489	1.529	Continuing	Continuing
• BLI 461700 2: <i>Combat Spt Sys: AIT</i>	5.439	4.753	3.990	0.000	3.990	2.852	2.092	2.761	1.936	Continuing	Continuing
• BLI 463000 1: <i>CCR:GCSS-MC</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.800	5.656	0.000	15.456
• BLI 4635: <i>BTI: Base Telecom</i>	12.607	11.808	21.151	0.000	21.151	22.092	18.474	19.394	19.724	0.000	125.250

D. Acquisition Strategy

MARINE CORPS HARDWARE SUITE (MCHS) ensures computer hardware in the Operating Forces keeps pace with industry computer hardware technical improvements. Analyses of technical alternatives are periodically required in order to determine how to best meet emerging customer requirements.

GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS (GCSS-MC) is pursuing an Evolutionary Acquisition (EA) strategy in order to field operationally suitable and supportable capabilities in the shortest time possible that meets the Logistics Advocate goals. EA offers the fastest method to field this highest of advocate priorities and allows for requirements to be time-phased as the users become more familiar with the strengths and weaknesses of the fielded system. In addition to quicker fielding, an EA approach is particularly well suitable for software intensive programs and offers these benefits: rapid delivery of an initial capability with the explicit intent of delivering continuously improving capabilities in the future and a reduction in the "cycle time" from identification of emergent user requirements, priorities and fielding. The GCSS-MC acquisition strategy will deliver capabilities in block increments. Each "Block" capability will follow a complete acquisition process in accordance with the DOD 5000 publications and OSD's Enterprise Integration roadmap. Blocks will include emergent user priorities, advanced technology improvements and expanded functionality. Each Block will repeat the complete acquisition program cycle going through a milestone (MS) C Full Rate Production Decision Review. Block 1 is divided into two major independent releases: Enterprise Release 1.1 and Deployed Access Release 1.2. This approach differs from the original plan of delivering one

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206313M: <i>Marine Corps Comms Systems</i>	2510: <i>MAGTF CSSE & SE</i>

release due to the technical complexities related to the overall scope of the solution. More substantial software improvement/system upgrades will be fielded with each Block as required and prioritized by the user community.

The GCSS-MC/LCM Block 2 requirements analysis and program planning are scheduled to begin during FY12. Block 2 will expand the retail supply functionality of Block 1 by implementing Marine Corps-wide wholesale and retail warehouse management and automated information technologies, such as RFID and bar code scanning. Block 2 will concentrate on transportation, distribution and in-transit visibility by focusing on planning the modes, links and schedules of the intra-theater transportation and distribution system

TRANSPORTATION SYSTEMS PORTFOLIO (TSP) conducts research and development currently executed under multiple contracts ending at various times across the FYDP. These contracts support the testing of the joint deployment and sustainment systems along with the USMC legacy systems.

JOINT FORCES REQUIREMENT GENERATOR II (JFRG II) conducts research and development currently executed under a five-year contract ending Dec 2011. This contract supports the testing of software for functionality with service users then passed on to Defense Information Systems Agency (DISA) for security & interoperability testing and released as a Global Command and Control Systems (GCCS) mission application. This is conducted based on a six-month release schedule of GCCS, with a six-month lead time for each JFRG II version release.

PUBLIC KEY INFRASTRUCTURE (PKI) is a DOD ACAT IAM Program. At the service level, the USMC PKI program is being managed as an Abbreviated Acquisition Program. Based on an Assistant Secretary of Defense Acquisition Decision Memorandum, DOD PKI development will be conducted through a series of block upgrades. The functional enhancement, changes will result in increased capability and functionality for PKI and increase the levels of security and assurance which affects mitigation of identified risks. There are thirteen functional and five assurance enhancements. Additionally, PKI functionality will be expanded to the SIPRNET.

AUTOMATED IDENTIFICATION TECHNOLOGY (AIT) hardware in the Operating Forces keeps pace with industry computer hardware technical improvements. AIT will support all aspects of Active RFID, pRFID, and UID. AIT evaluates emerging technologies, new equipment, and performs integration analysis and testing.

BASE TELECOM [Base Telecommunications Infrastructure (BTI)] provides all Marine Corps installations with the base area network communications infrastructure that connects the end-user to the DISA network. BTI sustains upgrades and enhances the telecommunications systems infrastructure for all Marine Corps Installations in order to meet the demands required to support the 5th Element of the Marine Air Ground Task Force (MAGTF). Participation in the DISA Unified Capabilities (voice, video, collaboration, and data) pilot is critical to BTI modernization strategy. The RDT&E funds will be utilized for testing efforts in support of the DISA Unified Communications Everything over Ethernet effort. After the testing is reviewed by the JITC, successfully evaluated products will be placed on the Approved Products List (APL).

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GCSS LCM Block 1 Application	C/FFP	Oracle USA:Reston, VA	156.585	22.400	Oct 2010	2.205	Oct 2011	-		2.205	0.000	181.190	
GCSS LCM Block 1 Training Development	C/FP	EDO:Stafford, VA	2.500	-		-		-		-	0.000	2.500	
PKI	C/FFP	Various:Various	5.503	1.312	May 2011	1.547	May 2012	-		1.547	Continuing	Continuing	Continuing
AIT	C/FFP	TBD:TBD	4.942	2.041	Dec 2010	1.800	Dec 2011	-		1.800	Continuing	Continuing	Continuing
VAR	Various	Various:Various	17.601	-		-		-		-	Continuing	Continuing	Continuing
GCSS LCM Block 2 Application	Various	TBD:Triangle, VA	-	-		32.460	Apr 2012	-		32.460	Continuing	Continuing	Continuing
Subtotal			187.131	25.753		38.012		-		38.012			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
VAR	Various	Various:Various	1.213	-		-		-		-	0.000	1.213	
Subtotal			1.213	-		-		-		-	0.000	1.213	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MCHS	WR	SPAWAR:Charleston, SC	9.633	1.508	Jan 2011	1.610	Jan 2012	-		1.610	Continuing	Continuing	Continuing
GCSS LCM Block 1 DT & OT Evaluations	WR	Various:Various	7.249	2.900	Nov 2010	0.265	Oct 2011	-		0.265	0.000	10.414	
Various	Various	Various:Various	12.881	0.918	Sep 2011	0.403	Sep 2012	-		0.403	Continuing	Continuing	Continuing
Subtotal			29.763	5.326		2.278		-		2.278			

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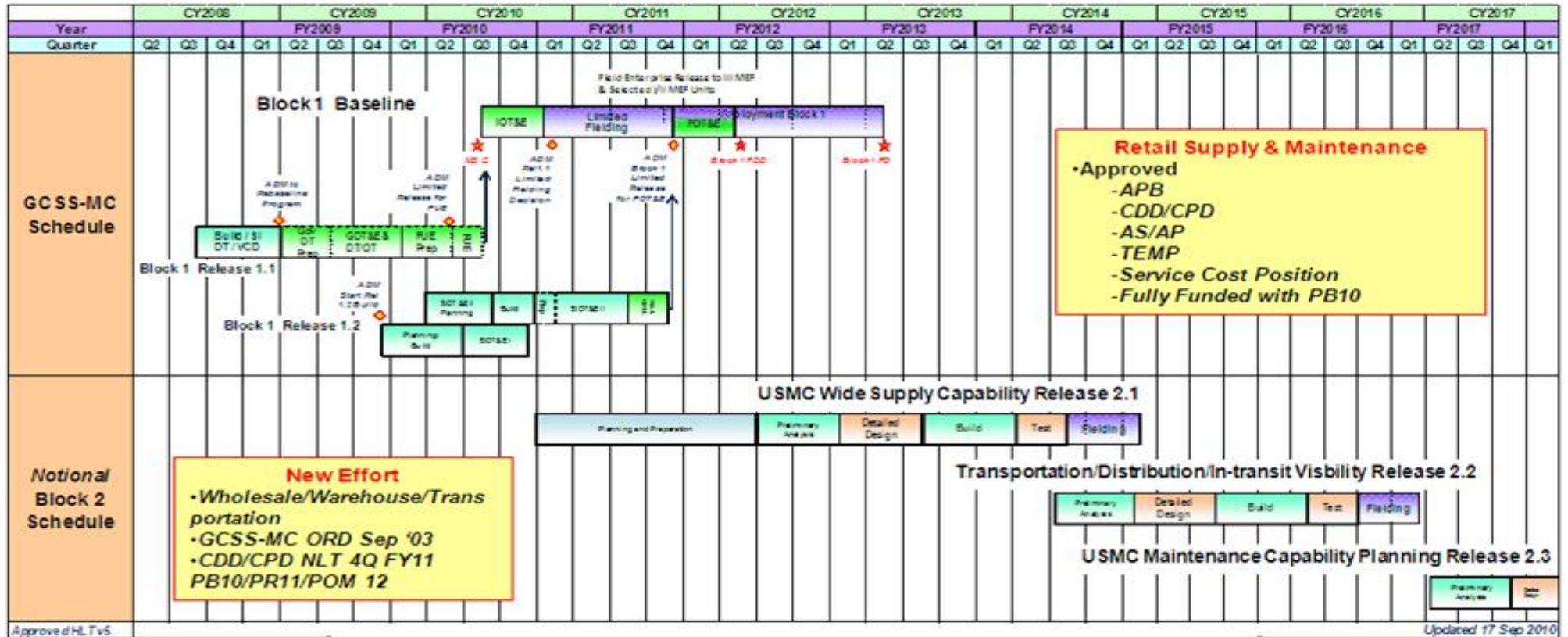
Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

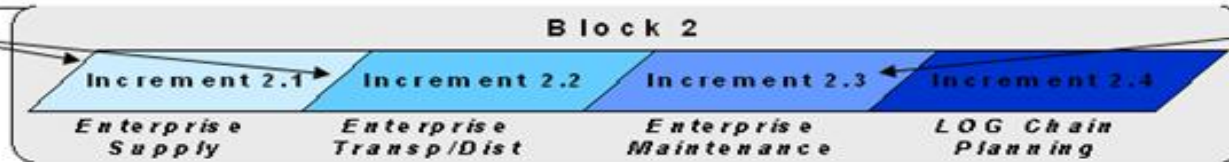
APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 2510: MAGTF CSSE & SE



Requested in POM12



Adding Increment 2.3 in POM13 beginning in FY17

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 2510: <i>MAGTF CSSE & SE</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2510				
GCSS-MC Logistics Chain Mgt Block 1 Limited Release AD	4	2011	4	2011
GCSS-MC Logistics Chain Mgt Block 1 FDD	2	2012	2	2012
GCSS-MC Logistics Chain Mgt Block 1 FD	2	2013	2	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3099: <i>Radar System</i>	18.184	24.893	33.887	-	33.887	34.483	8.022	8.640	8.797	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Long Range Radar (AN/TPS-59(V)3) - is a three dimensional ground-based sensor that can detect and track long range Air Breathing Targets (ABT) at ranges of 300 nautical miles and Tactical Ballistic Missiles (TBM) at ranges of 400 nautical miles. The system is beset with increasing obsolescence and Diminishing Manufacturing Sources (DMS) issues. The program will use a Post Production Support (PPS) contract to develop engineering changes to resolve DMS.

Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder radar, the AN/TPQ-48 Lightweight Counter Mortar Radar and the Target Processing Set. The FTAS is critical in the execution of counterfire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. FY10-FY16 funds will be used to address engineering issues that arise due to DMS items within the Family of Target Acquisition Systems.

Short/Medium Range Air Defense Radar (SHORAD) - The Short/Medium Range Air Defense Radar AN/TPS-63B is a two-dimensional, medium-range, medium altitude, transportable radar system which is doctrinally employed as a tactical gap-filler or as an early warning system for early deployment into the operational area. It has a 360-degree air surveillance capability at a range of 160 miles and complements the co-employed AN/TPS-59(V)3 three-dimensional, long-range, air surveillance radar system. The Short/Medium Range Air Defense Radar will develop engineering change proposals related to improved system performance with the specific purpose of meeting increased fleet operational requirements. AN/TPS-63 modifications and system improvements will be researched and analyzed to determine which complement existing components to preclude an expensive USMC investment in solid-state radar technology. This system was first fielded in 1978 and now in the late sustainment phase of its system life cycle. The AN/TPS-63B radar system will be phased out when replaced by the Ground/Air Task Oriented Radar (G/ATOR).

Three Dimensional Expeditionary Long Range Radar (3DELRR) - The Marine Corps is providing technical, engineering, and programmatic support (personnel) to the U.S. Air Force 3DELRR program. The program support consists of program management, engineering, logistics, test, and requirements activities. 3DELRR is a potential replacement for the AN/TPS-59.

Virtual Warfare Center (VWC) Support - The project team performs modeling and simulation work at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to test advanced concepts relating to Marine Corps Command and Control (C2) and MAGTF operations. The testing and analysis of these advanced concepts focuses on persistent forward naval engagements in support of the MAGTF.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: *AN/TPS-59 : Management Service Support</p> <p align="right">Articles:</p> <p>Description: The program will address Diminishing Manufacturing Sources (DMS) issues by continuing use of a Post Production Support (PPS) contract. The AN/TPS-59 Incremental Sustainment is a two-phased acquisition approach to address Diminishing Manufacturing Systems and the Mode 5 Implementation of the AN/TPS-59(V)3 Radar System.</p> <p>FY 2010 Accomplishments: MCSC - Program Management Support</p> <p>FY 2011 Plans: MCSC - Program Management Support, In-sourcing.</p> <p>FY 2012 Base Plans: MCSC - Program Management Support for the Increment II developmental effort</p>	1.250 0	7.557 0	7.000 0	-	7.000 0
<p>Title: *3DELRR: Management Service Support</p> <p align="right">Articles:</p> <p>FY 2012 Base Plans: MCSC - General Dynamics for programmatic support, MCOTEA for testing events and support, and HQMC CD&I for requirements.</p>	-	-	2.030 0	-	2.030 0
<p>Title: *VWC: Management Service Support</p> <p align="right">Articles:</p> <p>FY 2012 Base Plans: Virtual Warfare Center - ONR for testing of advance concepts for the USMC.</p>	-	-	4.842 0	-	4.842 0
<p>Title: *GWLRF/FTAS: Program office management/travel</p> <p align="right">Articles:</p> <p>Description: Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder radar, the AN/TPQ-48 Lightweight Counter Mortar Radar and the Target Processing Set. The FTAS is critical in the execution of counter-fire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability</p>	0.050 0	1.081 0	0.050 0	-	0.050 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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<p>to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. FY10-FY16 funds will be used to address engineering issues that arise due to DMS items within the Family of Target Acquisition Systems.</p> <p>FY 2010 Accomplishments: Travel funding for the ALBANY MARCORSYSCOM support for conferences and site visits.</p> <p>FY 2011 Plans: SME Dahlgren for development of Sensor Manager. Travel funding for the ALBANY MARCORSYSCOM support for conferences and site visits.</p> <p>FY 2012 Base Plans: Travel funding for the ALBANY MARCORSYSCOM support for conferences and site visits.</p>					
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Title: *GWLR/FTAS: Contractor	0.582	0.486	0.100	-	0.100
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<p align="right">Articles:</p> <p>Description: Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder radar, the AN/TPQ-48 Lightweight Counter Mortar Radar and the Target Processing Set. The FTAS is critical in the execution of counter-fire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. FY10-FY16 funds will be used to address engineering issues that arise due to DMS items within the Family of Target Acquisition Systems.</p> <p>FY 2010 Accomplishments: NSWC CRANE - Government Engineering Support to include Correlation and Fusion, Dahlgren - Engineering Support for the Family of Target Acquisition systems to support the Correlation and Fusion as well as market studies (RFI"s).</p> <p>FY 2011 Plans:</p>	0	0	0		0
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
NSWC CRANE - Government Engineering Support to include Correlation and Fusion ECPs to the TPS, Dahlgren - Engineering Support for the Family of Target Acquisition systems to support the Correlation and Fusion. Government liason with FSED Ft. Sill.					
<i>FY 2012 Base Plans:</i> NSWC CRANE - Government Engineering Support to include Correlation and Fusion ECPs to the TPS, Dahlgren - Engineering Support for the Family of Target Acquisition systems to support the Correlation and Fusion. Government liason with FSED Ft. Sill.					
<i>Title:</i> *GWLR/FTAS: Software/Hardware ECP's	0.165	0.285	0.397	-	0.397
<i>Articles:</i>	0	0	0		0
<i>Description:</i> Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder radar, the AN/TPQ-48 Lightweight Counter Mortar Radar and the Target Processing Set. The FTAS is critical in the execution of counter-fire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. FY10-FY16 funds will be used to address engineering issues that arise due to DMS items within the Family of Target Acquisition Systems.					
<i>FY 2010 Accomplishments:</i> Dahlgren - continuation of services from FY09 and ongoing. Crane - Correlation and Fusion.					
<i>FY 2011 Plans:</i> CECOM - Develop Sensor Management Platform for the TPS.					
<i>FY 2012 Base Plans:</i> Continued development of Correlation and Fusion tools using the Sensor Manager Platform.					
<i>Title:</i> *GWLR/FTAS: System Diminishing Manufacturing Sources (DMS)	0.989	-	-	-	-
<i>Articles:</i>	0				
<i>Description:</i> Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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The FTAS consists of the AN/TPQ-46 Firefinder radar, the AN/TPQ-48 Lightweight Counter Mortar Radar and the Target Processing Set. The FTAS is critical in the execution of counter-fire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. FY10-FY16 funds will be used to address engineering issues that arise due to DMS items within the Family of Target Acquisition Systems.

FY 2010 Accomplishments:
Dahlgren - continuation of services from FY09 and ongoing. Crane - Correlation and Fusion.

Title: *SHORT/MEDIUM RANGE AIR DEFENSE RADAR: Life Extension Study	0.214	0.197	-	-	-
Articles:	0	0			

Description: The Short/Medium Range Air Defense Radar AN/TPS-63B is a two-dimensional, medium-range, medium altitude, transportable radar system which is doctrinally employed as a tactical gap-filler or as an early warning system for early deployment into the operational area. It has a 360-degree air surveillance capability at a range of 160 miles and complements the co-employed AN/TPS-59(V)3 three-dimensional, long-range, air surveillance radar system.

FY 2010 Accomplishments:
To provide better configuration management to the current systems by on site visits and field configuration survey.
AN/TPS-63 modifications and system improvements will be researched and analyzed to determine which complement existing components.

FY 2011 Plans:
To provide better configuration management to the current systems by on site visits and field configuration survey.
Continuing developing effort to resolve ongoing DMSMS issues and ensure current sustainment efforts.

Title: *AN/TPS-59 : Develop Engineering Change Proposals	13.684	9.363	13.462	-	13.462
Articles:	0	0	0		0

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: The Short/Medium Range Air Defense Radar AN/TPS-63B is a two-dimensional, medium-range, medium altitude, transportable radar system which is doctrinally employed as a tactical gap-filler or as an early warning system for early deployment into the operational area. It has a 360-degree air surveillance capability at a range of 160 miles and complements the co-employed AN/TPS-59(V)3 three-dimensional, long-range, air surveillance radar system. The radar also provides a time-shared display of radar and Identification Friend or Foe (IFF) data. The Short/Medium Range Air Defense Radar will develop engineering change proposals related to improved system performance with the specific purpose of meeting increased fleet operational requirements. AN/TPS-63 modifications and system improvements will be researched and analyzed to determine which complement existing components to preclude an expensive USMC investment in solid-state radar technology.</p> <p>FY 2011 Plans: Research and development efforts are needed to be Mode 5 Identification Friend or Foe (IFF) compliant and provide the communication link to pass critical IFF data to the TAOC.</p> <p>FY 2012 Base Plans: Engineering and Technical support required to address Diminishing Manufacturing Sources (DMS) High Voltage issues in two key areas, Travelling Wave Tube (TWT) and Cross Field Amplifiers (CFA) which support the Identification Friend or Foe (IFF) capability.</p>					
Accomplishments/Planned Programs Subtotals	18.184	24.893	33.887	-	33.887

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/46501: <i>Short/Medium Range Radar Mods</i>	0.700	0.694	4.425	3.000	7.425	6.690	0.743	0.755	0.768	Continuing	Continuing
• PMC/46502: <i>AN/TPS-59</i>	4.805	5.493	28.010	21.789	49.799	38.924	24.050	25.141	29.402	Continuing	Continuing
	5.772	0.166	3.671	1.717	5.388	3.134	2.143	2.202	2.239	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/46503: <i>FAMILY OF TARGET ACQUISITION SYSTEMS</i>											

D. Acquisition Strategy

Long Range Radar (AN/TPS-59(V)3) - The program will address Diminishing Manufacturing Sources (DMS) issues by continuing use of a Post Production Support (PPS) contract. The AN/TPS-59 Incremental Sustainment is a two-phased acquisition approach to address Diminishing Manufacturing Systems for the AN/TPS-59(V)3 Radar System.

Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder radar, the AN/TPQ-48 Lightweight Counter Mortar Radar and the Target Processing Set. The FTAS is critical in the execution of counterfire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other firendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. FY09-FY15 funds will be used to address engineering issues that arise due to DMS items within the Family of Target Acquisition Systems.

The Short/Medium Range Air Defense Radar AN/TPS-63B is a two-dimensional, medium-range, medium altitude, transportable radar system which is doctrinally employed as a tactical gap-filler or as an early warning system for early deployment into the operational area. It has a 360-degree air surveillance capability at a range of 160 miles and complements the co-employed AN/TPS-59(V)3 three-dimensional, long-range, air surveillance radar system. The radar also provides a time-shared display of radar and Identification Friend or Foe (IFF) data. The Short/Medium Range Air Defense Radar will develop engineering change proposals related to improved system performance with the specific purpose of meeting increased fleet operational requirements. AN/TPS-63 modifications and system improvements will be researched and analyzed to determine which complement existing components to preclude an expensive USMC investment in solid-state radar technology.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59	C/CPFF	LOCKHEED MARTIN:SYRACUSE, NY	52.575	9.363	Oct 2010	13.462	Oct 2011	-		13.462	0.000	75.400	
AN/TPS-59	C/CPFF	SENSIS:SYRACUSE, NY	1.100	-		-		-		-	0.000	1.100	
SHORT/MEDIUM RANGE	C/CPFF	NORTHROP GRUMMAN:Not Specified	0.220	1.224	Jan 2011	0.206	Jan 2012	-		0.206	0.000	1.650	
Subtotal			53.895	10.587		13.668		-		13.668	0.000	78.150	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FTAS	WR	NSWC, DAHLGREN:DAHLGREN	5.598	0.285	Oct 2010	-		-		-	0.000	5.883	
FTAS	MIPR	CECOM:FT MONMOUTH	1.932	0.486	Jan 2011	0.100	Jan 2012	-		0.100	0.000	2.518	
FTAS	WR	MCLB:BARSTOW	1.200	-		-		-		-	0.000	1.200	
FTAS	WR	NSWC, CRANE:CRANE, IN	1.850	-		0.397	Oct 2011	-		0.397	0.000	2.247	
FTAS	C/FFP	MCSC:QUANTICO	0.893	1.081	Dec 2010	0.050	Oct 2011	-		0.050	0.000	2.024	
AN/TPS-59	C/CPFF	MCOTEA:QUANTICO	-	0.340	Oct 2010	0.350	Oct 2011	-		0.350	0.000	0.690	
AN/TPS-59	C/CPFF	CDI:QUANTICO	-	0.400	Apr 2011	0.450	Apr 2012	-		0.450	0.000	0.850	
AN/TPS-59	C/CPFF	NSWC, DAHLGREN:MCSC	-	1.763	Jan 2011	2.250	Jan 2012	-		2.250	0.000	4.013	
AN/TPS-59	C/CPFF	SPAWAR:MCSC	-	1.494	Feb 2011	1.750	Feb 2012	-		1.750	0.000	3.244	
AN/TPS-59	C/CPFF	MITRE:Not Specified	1.025	0.900	Oct 2010	1.000	Oct 2011	-		1.000	0.000	2.925	
3DELRR	C/CPFF	MCOTEA:QUANTICO	-	-		0.143	Mar 2012	-		0.143	0.000	0.143	
VWC	C/CPFF	ONR:Not Specified	-	-		4.842	Apr 2012	-		4.842	0.000	4.842	
3DELRR	Various	HQMC CD&I:HQMC	-	-		0.142	Mar 2012	-		0.142	0.000	0.142	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

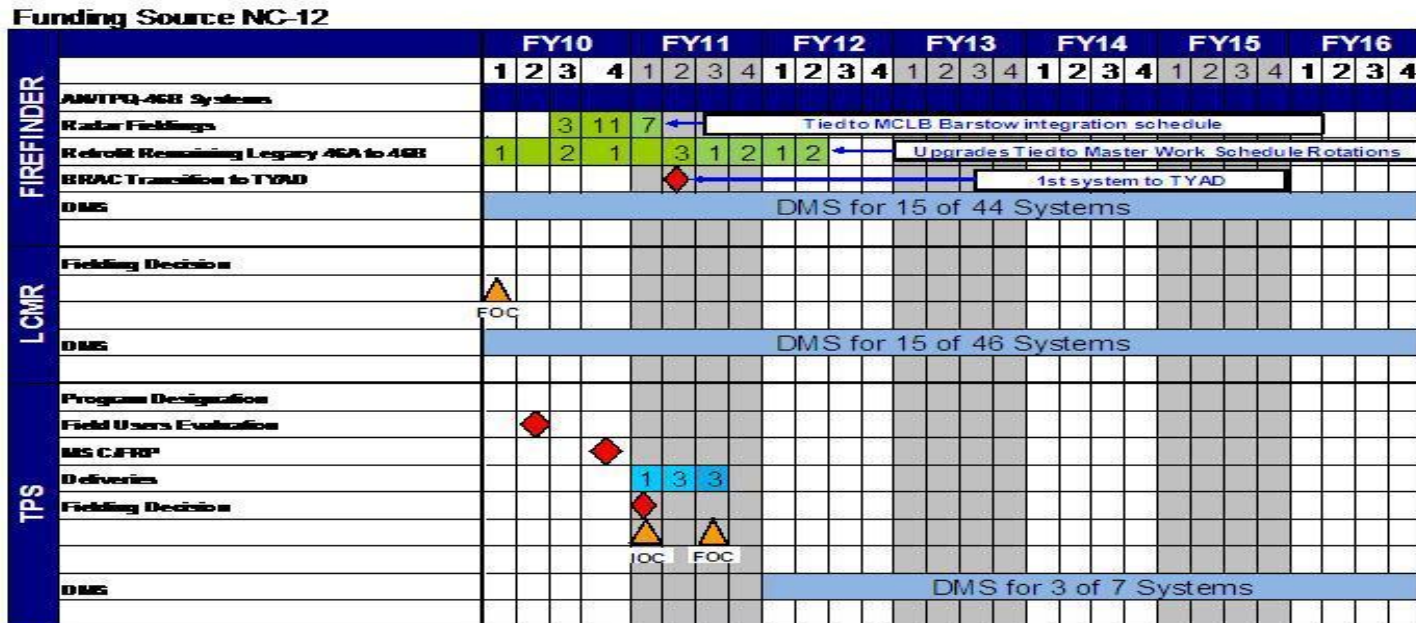
DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 3099: Radar System

FTAS



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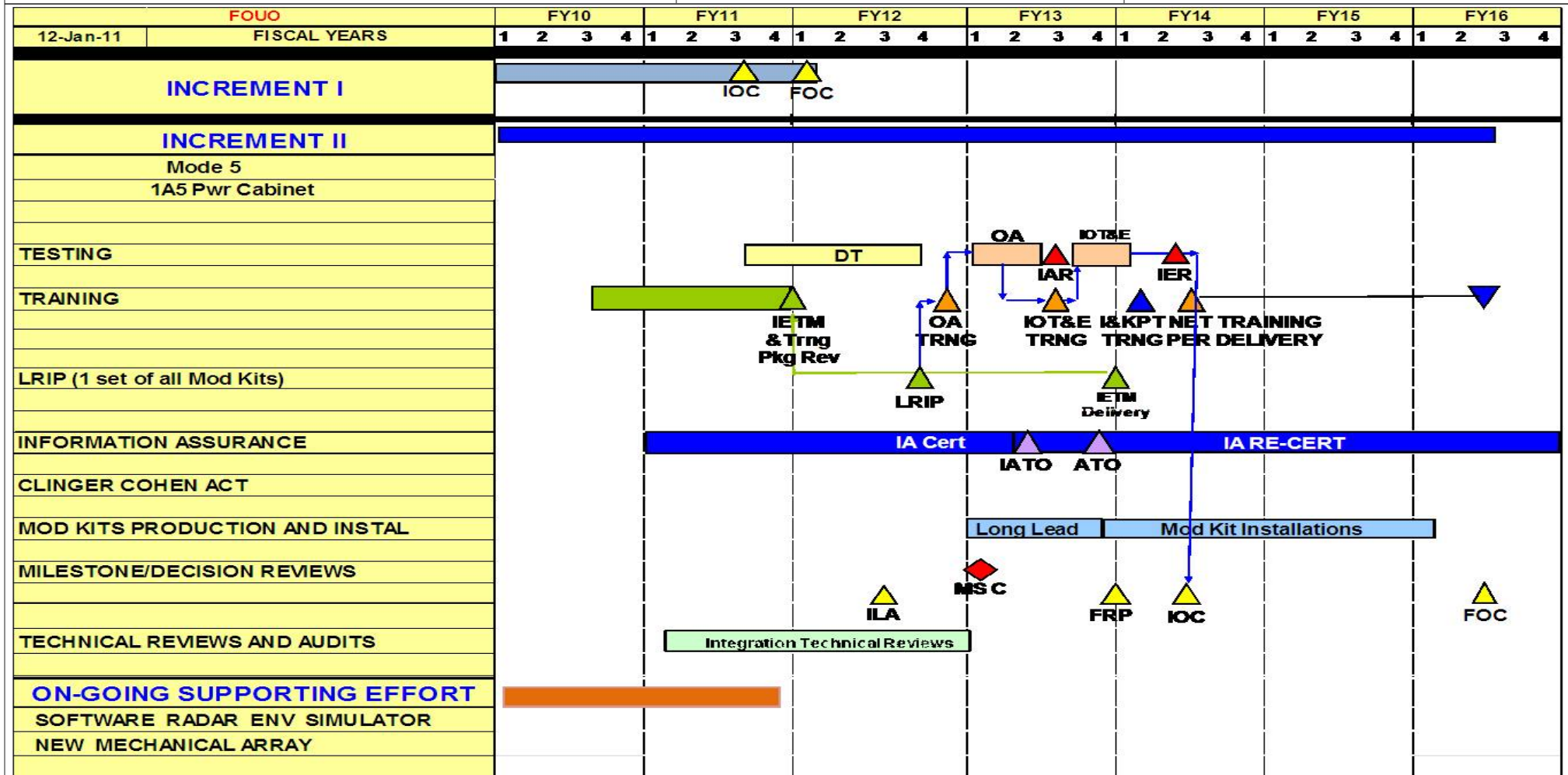
Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 3099: Radar System



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 3099: <i>Radar System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3099				
FTAS TPS MS C	4	2010	1	2011
FTAS TPS IOC	1	2011	1	2011
FTAS TPS FOC	3	2011	3	2011
FTAS FIREFINDER FOC	4	2010	1	2011
FTAS LCMR FOC	1	2010	1	2010
AN/TPS-59 TRR INC I	4	2010	4	2010
AN/TPS-59 INCREMENT II IOC	1	2014	1	2014
AN/TPS-59 INCREMENT II MS-C	1	2013	1	2013
AN/TPS-59 INCREMENT II FOC	4	2015	4	2015
AN/TPS-59 INCREMENT I IOC	1	2011	1	2011
AN/TPS-59 INCREMENT I FOC	4	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	6.374	-	-	-	-	-	-	-	-	0.000	6.374
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Battlefield Sensor Netting System - This is a system using several sensors in a battlefield area, with groups of sense in communication with sensor netting stations. Each sensor netting station broadcasts air traffic data to terminal users in its area. The sensors may be radars, infrared detectors, etc. The sensor netting station includes communications to each sensor, processing facilities for handling aircraft I.D. and eliminating redundant targets, and communications to terminal users. The terminal users may include missile or gun batteries, tank or infantry columns, etc. This funds the development of increasing timeliness and accuracy to better engage aircraft and missiles earlier.

Mobile Modular Command and Control (M2C2) - The development of Mobile Modular Command and Control (M2C2) technology provides the Marine Operating Forces with an on-the-move command and control (OTM C2) capability with over the horizon (OTH) communication links. The Congressional funding helps to baseline the M2C2 capability and prepare it for transition into an acquisition program of record, the Command Operations Center (COC).

Media Exploitation Tool Integration with Intelligence C2 Systems - Digital media exploitation rapidly extracts data from enemy devices and media captured on the battlefield. Development of this tool will allow for collection/conversion of raw data into actionable intelligence for timely analysis/dissemination.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Media Exploitation Tool Integration with Intelligence C2 Systems	1.195	-
FY 2010 Accomplishments: \$1.2M FY10 RDT&E Funds will be used to further develop the System for Tracking Key Evidence (STRIKE), which is the media exploitation tool used by the USMC CI/HUMINT Equipment Program (CIHEP). While a number of task orders will be issued, the development will primarily continue to incorporate other open architecture tools into the existing STRIKE capability and increasing its interoperability with existing intelligence systems.		
Congressional Add: Battlefield Sensor Netting	2.391	-
FY 2010 Accomplishments: Mobile Modular Command and Control (M2C2) - The development of Mobile Modular Command and Control (M2C2) technology provides the Marine Operating Forces with an on-the-move command and control (OTM C2) capability with over the horizon (OTH) communication links. The Congressional funding helps to baseline the M2C2 capability and prepare it for transition into an acquisition program of record, the Command Operations Center (COC).		
Congressional Add: M2C2	2.788	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9999: <i>Congressional Adds</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2010	FY 2011
<i>FY 2010 Accomplishments:</i> Media Exploitation Tool Integration with Intelligence C2 Systems- Digital media exploitation rapidly extracts data from enemy devices and media captured on the battlefield. Development of this tool will allow for collection/conversion of raw data into actionable intelligence for timely analysis/dissemination.		
Congressional Adds Subtotals	6.374	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Congressional Add

E. Performance Metrics

Congressional Add

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9C89: <i>Marine Ground-Air Radar</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9C89: <i>Marine Ground-Air Radar</i>	61.875	55.173	106.721	-	106.721	41.324	72.581	98.678	76.874	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Ground/Air Task Oriented Radar (G/ATOR) (formerly known as the Multi-Role Radar System (MRRS)) is an expeditionary, 3-dimensional, high-mobility, multi-purpose wheeled vehicle, short/medium range multi-role radar designed to detect cruise missiles, air breathing targets, rockets, mortars, and artillery. MRRS and GWLR (Ground Weapons Locating Radar) merged into a single requirement/capability (G/ATOR) and will replace an aging fleet of single mission legacy radar systems. G/ATOR will support air defense, air surveillance, counter-battery/target acquisition, aviation radar tactical enhancements and the final evolution will also support the Air Traffic Control mission. This project was funded under project C3099 prior to FY 2010.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: *G/ATOR: Contractor Technical, Development Engineering/EDM</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: EDM material procurement and fabrication. Contractor software integration and test, and contractor system integration and test.</p> <p>FY 2011 Plans: Finish System Integration and Test, Start Environmental Qualification Testing (EQT), Start Performance Qualification Testing (PQT)</p> <p>FY 2012 Base Plans: Finish EQT, Finish PQT, Factory Acceptance Testing and Start and Finish Developmental Testing, Start Anti-tamper development. Begin producibility enhancement efforts to include design, prototype development and integration/regression testing of Gallium Arsenide based T/R modules and associated technology insertion efforts.</p>	45.983 0	39.110 0	77.682 0	-	77.682 0
<p>Title: *G/ATOR: Test and Evaluation</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments:</p>	0.836 0	2.822 0	9.200 0	-	9.200 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9C89: <i>Marine Ground-Air Radar</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Narine Corps Operational Test and Evaluation Activity (MCOTEA), General Dynamics, NSWC Corona, and Aberdeen Test Facility contribute to Test and Evaluation Master Plan (TEMP) development.</p> <p>FY 2011 Plans: Finish System Integration and Test, Start Environmental Qualification Testing (EQT), Start Performance Qualification Testing (PQT)</p> <p>FY 2012 Base Plans: Finish EQT, Finish PQT, Factory Acceptance Testing and Start and Finish Developmental Testing, Start Anti-tamper development</p>					
<p>Title: *G/ATOR: Program Office Management & Travel Costs</p> <p align="right">Articles:</p>	0.361 0	0.150 0	0.424 0	-	0.424 0
<p>FY 2010 Accomplishments: Travel support for testing events scheduled in FY10.</p> <p>FY 2011 Plans: Continue travel efforts in support of program test events.</p> <p>FY 2012 Base Plans: Travel support for testing events scheduled in FY12.</p>					
<p>Title: *G/ATOR: Government Technical Support</p> <p align="right">Articles:</p>	8.534 0	7.491 0	10.627 0	-	10.627 0
<p>FY 2010 Accomplishments: MITRE, Naval Systems Warfare Center (NSWC) Dahlgren, NSWC Crane, MARCORSYSCOM, MCOTEA Quantico Software Engineering (management, requirements mapping, code walk through) and Radar Engineering Support</p> <p>FY 2011 Plans: Continued support from these activities to enable program execution; MITRE, NSWC Dahlgren, NSWC Crane, MARCORSYSCOM, MCOTEA.</p> <p>FY 2012 Base Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9C89: <i>Marine Ground-Air Radar</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued support from these activities to enable program execution; MITRE, NSWC Dahlgren, NSWC Crane, MARCORSSCOM, MCOTEA.					
Title: *G/ATOR: Engineering, Management, & Logistics Support	6.161	5.600	8.788	-	8.788
Articles:	0	0	0		0
FY 2010 Accomplishments: Supportability Analysis update (Maintenance Plan), M-Demonstration, and training.					
FY 2011 Plans: Continued support from these activities to enable program execution; General Dynamics Information Technology, Combat Development & Integration.					
FY 2012 Base Plans: Provide support to DT/OT: collect and analyze test data, transport equipment to test sites, provide maintenance services. Update documentation to satisfy ACAT 1D regulatory and statutory requirements; prepare for and execute the Independent Logistics Assessment.					
Accomplishments/Planned Programs Subtotals	61.875	55.173	106.721	-	106.721

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/465000: <i>GRND/AIR TASK ORIENTED RADAR</i>	0.000	0.000	4.246	0.000	4.246	125.831	116.388	80.176	254.060	Continuing	Continuing

D. Acquisition Strategy

The Ground/Air Task Oriented Radar (G/ATOR), formerly known as Multi-Role Radar System (MRRS) will fill the MRRS and GWLR requirements. Five legacy systems (AN/TPS-63, AN/UPS-3, AN/MPQ-62, AN/TPS-73 and AN/TPQ-46A) will be replaced by a single material design that offers an opportunity to reduce development cost and combine training and logistics assets. MRRS Aviation systems replace the AN/TPS-63, AN/MPQ-62 and AN/TPS-73 systems, as well as additional systems in support of the SHORAD mission; MRRS Ground system is a one for one replacement of the AN/TPQ-46A. The System Development & Demonstration (SDD) phase designed to allow for technology insertion due to obsolescence and technology growth issues. As Tactical Enhancements become available, fielded systems will be backfitted. Two Engineering Development Models (EDM) -- one Contractor, one Government -- will be developed during the SDD phase and flowed down to support builds.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9C89: <i>Marine Ground-Air Radar</i>

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9C89: <i>Marine Ground-Air Radar</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	C/CPIF	NORTHROP GRUMMAN:LINTHICUM HEIGHTS, MD	81.130	39.110	Nov 2010	77.682	Dec 2011	-		77.682	Continuing	Continuing	Continuing
Subtotal			81.130	39.110		77.682		-		77.682			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	MIPR	MITRE:BOSTON, MA	0.818	0.504	Nov 2010	1.800	Dec 2011	-		1.800	Continuing	Continuing	Continuing
G/ATOR	WR	NSWC-DAHLGREN:DAHLGREN, VA	7.535	6.010	Nov 2010	7.774	Dec 2011	-		7.774	Continuing	Continuing	Continuing
G/ATOR	WR	NSWC-CRANE:CRANE, ID	0.660	0.530	Nov 2010	0.284	Dec 2011	-		0.284	Continuing	Continuing	Continuing
G/ATOR	C/FP	MCSC:QUANTICO, VA	0.107	0.107	Nov 2010	-		-		-	Continuing	Continuing	Continuing
G/ATOR	WR	MCOTEA:QUANTICO, VA	0.322	0.340	Nov 2010	-		-		-	Continuing	Continuing	Continuing
G/ATOR	C/FP	SAIC:QUANTICO, VA	-	-		0.200	Dec 2011	-		0.200	0.000	0.200	
G/ATOR	WR	NSWC-PHD:DAM NECK, VA BEACH	-	-		0.569	Dec 2011	-		0.569	0.000	0.569	
Subtotal			9.442	7.491		10.627		-		10.627			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	WR	MCOTEA:QUANTICO, VA	0.322	0.350	Nov 2010	0.700	Dec 2011	-		0.700	Continuing	Continuing	Continuing
G/ATOR	C/FP		0.450	0.500	Nov 2010	0.600	Dec 2011	-		0.600	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9C89: <i>Marine Ground-Air Radar</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		GENERAL DYNAMICS:STAFFORD, VA											
G/ATOR	MIPR	MITRE:BOSTON, MA	-	0.672	Nov 2010	-		-		-	0.000	0.672	
G/ATOR	WR	MCSC:QUANTICO, VA	0.385	0.300	Nov 2010	-		-		-	Continuing	Continuing	Continuing
G/ATOR	WR	NSWC-CORONA:CORONA, CA	0.118	0.300	Nov 2010	0.300	Dec 2011	-		0.300	Continuing	Continuing	Continuing
G/ATOR	MIPR	US ARMY ABERDEEN:PROVING GROUND, MD	0.100	0.350	Nov 2010	1.600	Dec 2011	-		1.600	Continuing	Continuing	Continuing
G/ATOR	MIPR	MARINE CORP AIR STATION:YUMA, AZ	-	0.350	Nov 2010	2.200	Feb 2012	-		2.200	Continuing	Continuing	Continuing
G/ATOR	MIPR	REDSTONE ARSENAL:REDSTONE, ALABAMA	0.110	-		-		-		-	0.000	0.110	
G/ATOR	MIPR	MCTSSA:CAMP PENDLETON, CA	-	-		2.200	Dec 2011	-		2.200	0.000	2.200	
G/ATOR	MIPR	NAVAL SURFACE WEAPONS COMBAT CNTR:WALLOPS, CA	-	-		1.600	Dec 2011	-		1.600	0.000	1.600	
Subtotal			1.485	2.822		9.200		-		9.200			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	C/FP	GENERAL DYNAMICS:STAFFORD, VA	7.187	5.400	Nov 2010	8.350	Dec 2011	-		8.350	Continuing	Continuing	Continuing
G/ATOR2	WR	MCSC:QUANTICO, VA	0.150	0.150	Oct 2010	-		-		-	Continuing	Continuing	Continuing
G/ATOR3	C/FP	MCSC:QUANTICO, VA	0.211	0.200	Oct 2010	0.862	Dec 2011	-		0.862	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

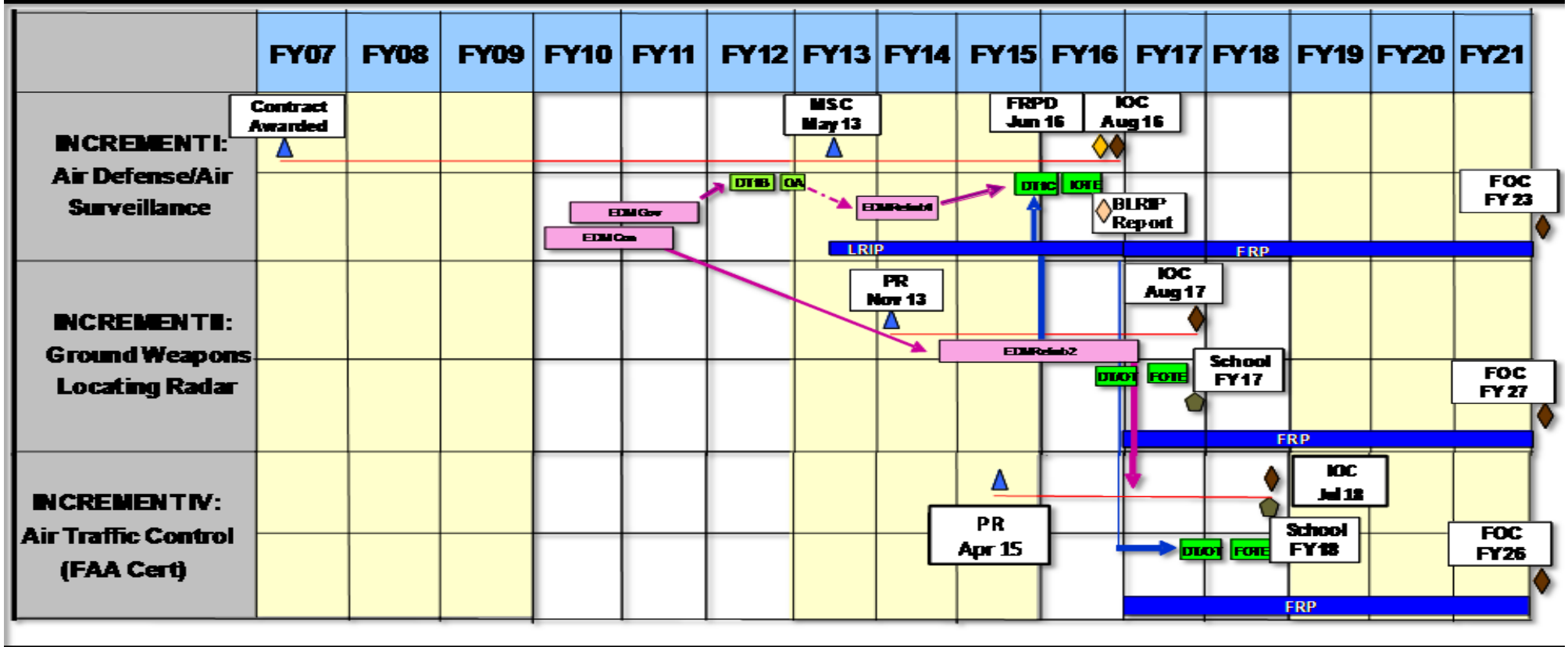
DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206313M: Marine Corps Comms Systems

PROJECT
 9C89: Marine Ground-Air Radar

G/IATOR PROGRAM SCHEDULE



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206313M: <i>Marine Corps Comms Systems</i>	PROJECT 9C89: <i>Marine Ground-Air Radar</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9C89				
Defense/Air Surveillance AS/AD Capability System Development and Demonstration Phase SDD/EMD	1	2010	3	2013
Defense/Air Surveillance AS/AD Capability System Demonstration (DT)(1B)	2	2012	4	2012
Defense/Air Surveillance AS/AD Capability System Demonstration (DT/OT)(1C)	3	2015	1	2016
Defense/Air Surveillance AS/AD Capability Operational Assessment (OA)	4	2012	1	2013
Defense/Air Surveillance AS/AD Capability Low Rate Initial Production (LRIP)	3	2013	3	2015
Defense/Air Surveillance AS/AD Capability Milestone C	3	2013	3	2013
Defense/Air Surveillance AS/AD Capability (IOT&E)	2	2016	2	2016
Defense/Air Surveillance AS/AD Capability (IOC)	4	2016	4	2016
Defense/Air Surveillance AS/AD Capability Full Rate Production Decision	3	2016	3	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	99.158	100.424	209.396	-	209.396	275.998	334.393	189.720	191.222	Continuing	Continuing
0021: <i>Assault Amphibious Vehicle 7A1</i>	25.533	1.887	60.776	-	60.776	73.945	75.960	19.125	6.674	Continuing	Continuing
1555: <i>Lt Armored Vehicle Prog</i>	6.140	14.760	39.954	-	39.954	58.702	62.083	2.305	2.355	Continuing	Continuing
1901: <i>MC Grnd Wpnrty Prod Improvement</i>	8.437	11.514	10.670	-	10.670	12.691	10.801	7.817	6.430	Continuing	Continuing
2086: <i>Soldier/Marine Enhancement</i>	2.957	4.534	5.324	-	5.324	5.466	5.634	5.808	5.936	Continuing	Continuing
2112: <i>Lightweight 155mm Howitzer</i>	1.584	-	-	-	-	-	2.346	2.398	2.437	Continuing	Continuing
2237: <i>Amphibious Vehicle Test</i>	0.816	0.929	0.934	-	0.934	0.940	0.959	0.976	0.993	Continuing	Continuing
2315: <i>Training Devices/Simulators</i>	12.328	2.226	14.642	-	14.642	20.091	15.499	12.291	12.487	Continuing	Continuing
2503: <i>Initial Issue</i>	9.075	12.271	6.888	-	6.888	8.973	7.585	7.521	7.613	Continuing	Continuing
2513: <i>Body Armor</i>	-	-	5.332	-	5.332	5.436	5.576	5.752	5.852	Continuing	Continuing
2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>	1.923	1.542	1.946	-	1.946	2.372	2.420	2.472	2.516	Continuing	Continuing
3098: <i>Fire Support System</i>	19.255	20.559	27.219	-	27.219	20.008	18.072	7.563	7.451	Continuing	Continuing
4002: <i>Family of Raid Reconnaissance</i>	3.562	3.391	0.801	-	0.801	0.421	0.430	0.439	0.448	Continuing	Continuing
9999: <i>Congressional Adds</i>	4.461	-	-	-	-	-	-	-	-	0.000	4.461
9C85: <i>Marine Personnel Carrier (MPC)</i>	3.087	26.811	34.910	-	34.910	66.953	127.028	115.253	130.030	Continuing	Continuing

A. Mission Description and Budget Item Justification

This PE provides modification to Marine Corps Expeditionary Ground Force Weapon Systems to increase lethality, range, survivability and operational effectiveness. It also provides for the development of AAV7A1 reliability, maintainability, operational and safety modifications, improvements in command and control, and product improvements to the family of LAVs. The AVTB provides facilities and personnel which perform a broad range of testing, repair and technical services to amphibious vehicles. This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing and manufacturing development for upgrades of existing systems.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	108.857	100.424	169.193	-	169.193
Current President's Budget	99.158	100.424	209.396	-	209.396
Total Adjustments	-9.699	-	40.203	-	40.203
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-6.828	-			
• SBIR/STTR Transfer	-5.568	-			
• Program Adjustments	0.001	-	41.696	-	41.696
• Rate/Misc Adjustments	-	-	-1.493	-	-1.493
• Congressional General Reductions Adjustments	-0.004	-	-	-	-
• Congressional Directed Reductions Adjustments	2.700	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: *Marine Corps Cultural and Language Training Platform*

Congressional Add: *Expandable Rigid Wall Composite Shelter*

Congressional Add: *Remote Aiming and Sighting Optical Retrofit*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	0.637	-
	0.797	-
	3.027	-
Congressional Add Subtotals for Project: 9999	4.461	-
Congressional Add Totals for all Projects	4.461	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0021: <i>Assault Amphibious Vehicle 7A1</i>	25.533	1.887	60.776	-	60.776	73.945	75.960	19.125	6.674	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Three (3) Survivability Engineering Design Models (EDMs).

A. Mission Description and Budget Item Justification

(U) AAV lifecycle support and Primary Item Control Agent (PICA) functions. Funding to integrate Survivability upgrades to the AAV. AAV Family of Vehicles (FOV) Survivability Program: Capabilities based upgrade program centered on material upgrades in survivability to include, but not limited to, blast mitigating seats, belly/ sponson armor, spall liner, deck liner, and external fuel tank.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: *AAV SC&E Program</p> <p align="right">Articles:</p> <p>Description: AAV FOV Survivability, C4I , Environment/Habitability (SCE) Upgrade Program is a capabilities based upgrade program centered on material upgrades, and survivability, C4I, and Environment/habitability(SCE). The SCE development effort was completed in FY10. The Marine Corps Combat Development Command (MCCDC) published a new AAV Survivability requirement that begins development in FY12.</p> <p>FY 2010 Accomplishments: SCE: Continued work on fourteen (14) AAV SCE upgrades for Survivability, Command Control Communications Computers Intelligence (C4I), and Environmental upgrades. Coordinated with the Marine Corps Combat Development Center (MCCDC) to reduce the scope to five (5) selected Survivability Upgrades. Remaining upgrades will be developed for potential implementation as Engineering Change Proposals (ECPs) in the Modification funding line. Will begin baseline testing of vehicles and proof of concept field tests (not to production representative prototypes) for selected survivability upgrades as follow: Sponson/belly armor, blast mitigating seats, spall liner, deck liner, and external fuel tank. Improved Upgunned Weapon Station (UGWS): Completed baseline testing of existing Up Gunned Weapons Station with Naval Surface Warfare Center (NSWC) Dahlgren and Amphibious Vehicle Test Branch. Worked</p>	23.400	-	-	-	-
	0				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
with NSWC Crane for development of two (2) IUGWS Prototypes. The IUGWS prototypes have the same weapons and turret structure as the existing vehicles; however, the IUGWS will include stabilized proportional controls, a ballistic computer, a laser range finder, and ergonomic improvements.						
Title: *AAV (FOV) Survivability Program						
Articles:						
Description: AAV (FOV) Survivability Program: MCCDC published a new requirement for AAV Survivability in June 2010 that is funded in FYs 12-17. These capabilities center on material upgrades in survivability that include, but are not limited to, blast mitigating seats, belly/sponson armor, spall liner, deck liner, and external fuel tank.						
FY 2012 Base Plans: Initiate development of material upgrades in survivability that include, but are not limited to, blast mitigating seats, belly/sponson armor, spall liner, deck liner, and external fuel tank.						
Title: *PM AAV Operations Support:						
Articles:						
Description: AAV Operations Support: Evaluation and testing of safety improvements and fact-of-life changes to maintain the AAV Family of Vehicles (FOV).						
FY 2010 Accomplishments: Continue Engineering and safety fact-of-life changes to the FOV.						
FY 2011 Plans: Continue Engineering and safety fact-of-life changes to the FOV.						
FY 2012 Base Plans: Continue Engineering and safety fact-of-life changes to the FOV.						
Title: AAV SLEP						
Articles:						
Description: AAV SLEP will improve the legacy AAV and extend its service life until replaced by the Next Amphibious Vehicle (NAV) and Marine Personnel Carrier (MPC). Capability improvements include increased mobility, survivability, lethality, C4I/situational awareness, environment/habitability and logistics.						

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<i>FY 2012 Base Plans:</i> Initiate capability improvements to include increased mobility, survivability, lethality, C4I/situational awareness, environment/habitability and logistics. During FY12 this will also requirement refinement using Government labs to validate concepts and material solution approaches.					
Accomplishments/Planned Programs Subtotals	25.533	1.887	60.776	-	60.776

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

TBD

E. Performance Metrics

AAV Survivability Milestone B FY11.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Safety Analysis	WR	NSWC:Dahlgren VA	0.350	0.200	Mar 2011	0.200	Mar 2012	-		0.200	0.000	0.750	
RAM/Safety	WR	NSWC:Dahlgren VA	0.080	-		-		-		-	0.000	0.080	
Dev/Eval	C/CPFF	NSWC:Dahlgren VA	0.705	-		-		-		-	0.000	0.705	
Comp ID/Demo-Tests	C/CPFF	NSWC:Dahlgren	5.403	-		-		-		-	0.000	5.403	
Comp ID/Demo-Tests	C/CPFF	BAE Systems*:Stafford VA	9.954	-		-		-		-	0.000	9.954	
Safety Analysis	C/CPFF	BAE Systems*:Stafford VA	7.150	-		-		-		-	0.000	7.150	
RAM Safety	C/CPFF	BAE Systems*:Stafford VA	1.500	-		-		-		-	0.000	1.500	
Comp ID/Demo-Tests	WR	NWSC:Crane IN	0.800	-		-		-		-	0.000	0.800	
Test Analysis	WR	AVTB:Camp Pendleton	0.350	-		2.000	Mar 2012	-		2.000	0.000	2.350	
Comp Dev	C/CPFF	BAE Systems*:Stafford VA	6.000	-		-		-		-	0.000	6.000	
Survivability Fuel Tank Development	C/CPFF	BAE Systems:Stafford VA	-	-		2.480	Feb 2012	-		2.480	0.000	2.480	
Survivability EDM1	C/CPFF	BAE Systems:Stafford VA	-	-		2.000	Feb 2012	-		2.000	0.000	2.000	
Survivability EDM2	C/CPFF	BAE Systems:Stafford VA	-	-		2.000	Feb 2012	-		2.000	0.000	2.000	
Survivability EDM3	C/CPFF	BAE Systems:Stafford VA	-	-		2.000	Feb 2012	-		2.000	0.000	2.000	
Survivability Underbody,armor, seats	C/CPFF	BAE Systems:Stafford VA	-	-		2.000	Feb 2012	-		2.000	0.000	2.000	
Lethality weapn system	C/CPFF	BAE Systems:Stafford VA	-	-		7.480	Feb 2012	-		7.480	0.000	7.480	
C4I/Situational Awareness	C/CPFF	BAE Systems:Stafford VA	-	-		5.400	Feb 2012	-		5.400	0.000	5.400	
Environment/Habitability	C/CPFF	BAE Systems:Stafford VA	-	-		6.500	Feb 2012	-		6.500	0.000	6.500	
Logistics diagnostics, IETMS	C/CPFF		-	-		7.480	Feb 2012	-		7.480	0.000	7.480	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		BAE Systems:Stafford VA											
Subtotal			32.292	0.200		39.540		-		39.540	0.000	72.032	

Remarks
* FULL AND OPEN COMPETITION, NEW CONTRACT AWARD ANTICIPATED 2ND Q FY12

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical \$ Engineering Spt	WR	SPAWAR:Charleston SC	0.063	-		-		-		-	0.000	0.063	
Technical \$ Engineering Spt	WR	NSWC:Dahlgren/Crane	10.449	-		-		-		-	0.000	10.449	
Technical \$ Engineering Spt	C/CPFF	BAE Systems*:Triangle VA	8.615	1.000	Feb 2011	1.848	Feb 2012	-		1.848	0.000	11.463	
Documentation	C/CPFF	BAE Sysrtems*:Triangle VA	2.132	0.150	Feb 2011	-		-		-	0.000	2.282	
Support	C/CPFF	BAE Systems*:Triangle VA	2.531	0.150	Feb 2011	-		-		-	0.000	2.681	
Documentation	C/FP	CEOss:Quantico VA	0.200	-		2.000	Dec 2011	-		2.000	0.000	2.200	
Technical \$ Engineering Spt	C/CPFF	BAE Systems:Triangle VA	-	-		1.500	Feb 2012	-		1.500	0.000	1.500	
Documentation	C/CPFF	BAE Systems:Triangle VA	-	-		0.500	Feb 2012	-		0.500	0.000	0.500	
Support	C/CPFF	BAE Systems:Triangle VA	-	-		0.200	Feb 2012	-		0.200	0.000	0.200	
Subtotal			23.990	1.300		6.048		-		6.048	0.000	31.338	

Remarks
* FULL AND OPEN COMPETITION, NEW CONTRACT AWARD ANTICIPATED 2ND Q FY12

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TEMP/LCCE/CDD	WR	MCCDC:Quantico VA	0.740	-		-		-		-	0.000	0.740	
Field Test	PO	29 Palms:MCB CA	0.035	-		-		-		-	0.000	0.035	
Field Test	PO	Camp LeJeune:MCB NC	0.030	-		-		-		-	0.000	0.030	
Test and Eval	PO	MCOTEA:Quantico VA	1.028	-		-		-		-	0.000	1.028	
Decon Verification	C/CPFF	BAE Systems*:Stafford VA	0.100	-		-		-		-	0.000	0.100	
Testing	C/CPFF	BAE Systems*:Stafford VA	4.000	-		0.500	Feb 2012	-		0.500	0.000	4.500	
Integration Testing	C/CPFF	MCOTEA:Quantico VA	1.000	-		1.000	Feb 2012	-		1.000	0.000	2.000	
Survivability Fuel Store LiveFire Evaluation	C/CPFF	BAE Systems:Triangle VA	-	-		2.000	Feb 2012	-		2.000	0.000	2.000	
Subtotal			6.933	-		3.500		-		3.500	0.000	10.433	

Remarks
* FULL AND OPEN COMPETITION, NEW CONTRACT AWARD ANTICIPATED 2ND Q FY12

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management	C/CPFF	BAE Systems*:Triangle VA	4.100	0.187	Feb 2011	-		-		-	0.000	4.287	
Various Management	WR	Government:Various	13.448	-		4.733	Jan 2012	-		4.733	0.000	18.181	
Travel	Allot	Government:Various	0.436	0.200	Oct 2010	0.755	Jan 2012	-		0.755	0.000	1.391	
Management	C/CPFF	BAE Systems:Triangle VA	-	-		6.200	Feb 2012	-		6.200	0.000	6.200	
Subtotal			17.984	0.387		11.688		-		11.688	0.000	30.059	

Remarks
* FULL AND OPEN COMPETITION, NEW CONTRACT AWARD ANTICIPATED 2ND Q FY12

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 0021																												
AAVC7 Upgrade MSC		■																										
AAVC7 Upgrade LRIP		■	■																									
AAVC7 DT	■																											
AAVC7 IOT&E			■	■																								
AAV Survivability Upgrade MSB					■																							
AAV Survivability Upgrade MSC													■															
AAV Survivability LRIP													■	■	■													
AAV Survivability DT									■	■	■																	
AAV Survivability IOT&E													■	■	■													
AAV SLEP MSB												■																
AAV SLEP DT																	■	■	■									
AAV SLEP OT																		■	■									
AAV SLEP MSC																			■									
AAV SLEP LRIP																								■	■	■		

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 0021: <i>Assault Amphibious Vehicle 7A1</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0021				
AAVC7 Upgrade MSC	2	2010	2	2010
AAVC7 Upgrade LRIP	2	2010	3	2010
AAVC7 DT	1	2010	1	2010
AAVC7 IOT&E	3	2010	4	2010
AAV Survivability Upgrade MSB	1	2011	1	2011
AAV Survivability Upgrade MSC	3	2013	3	2013
AAV Survivability LRIP	3	2013	2	2014
AAV Survivability DT	2	2012	4	2012
AAV Survivability IOT&E	1	2013	1	2014
AAV SLEP MSB	4	2012	4	2012
AAV SLEP DT	1	2014	1	2015
AAV SLEP OT	3	2014	1	2015
AAV SLEP MSC	4	2014	4	2014
AAV SLEP LRIP	4	2014	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1555: <i>Lt Armored Vehicle Prog</i>	6.140	14.760	39.954	-	39.954	58.702	62.083	2.305	2.355	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Light Armored Vehicle Family of Vehicles (LAV FOV) consists of six fielded LAV configurations, and one communications/intelligence-configured asset on a LAV chassis. The LAV FOV provides a logistically self-contained, highly mobile, and lethal combined arms combat system to the Marine Air-Ground Task Force (MAGTF). The LAV Product Improvement Program funds the development and testing of modifications of four programs; the LAV Modification Program, the LAV Anti-Tank System Program, the LAV Survivability Program, and the LAV Indirect Fire Modernization Program. These programs will ensure that the LAV FOV will be capable of conducting its assigned missions by enhancing lethality and survivability; reliability, availability, maintainability and durability; as well as reducing operations and support costs.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: LAV MODIFICATIONS	0.490	2.251	8.314	-	8.314
Articles:	0	0	0		0
FY 2010 Accomplishments: Research and development of numerous LAV Modification projects to address minor modifications, safety, survivability, and obsolescence issues. Electrical Upgrade Phase 1&2/Recovery Aids.					
FY 2011 Plans: Research and development of numerous LAV Modification projects to address minor modifications, safety, survivability, and obsolescence issues. Electrical Upgrade Phase 3/Internal Stowage provisions/Driver's cooler/heater testing.					
FY 2012 Base Plans: Research and development of numerous LAV Modification projects to address minor modifications, safety, survivability, and obsolescence issues. Self Recovery Winch/Lightweight Underbelly Kit/Electrical Upgrade Phase 4/Technical Data Package/MRV Vehicle Commander Blast Shield/System Technical Support Contract.					
Title: LAV ANTI-TANK SYSTEM	5.650	12.509	10.910	-	10.910
Articles:	0	0	0		0
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
LAV-AT - Developed Milestone B documentation, conducted Business Case Analysis, test planning, and completed Analysis of Alternatives. FY 2011 Plans: LAV-AT - MS-B Approval, conduct Source Selection, Engineering & Manufacturing Development contract award (4 Prototypes/Vehicle Integration), Preliminary Design Review (PDR), Systems Requirements Review (SRR) FY 2012 Base Plans: LAV-AT - Critical Design Review, Complete Interfaces and Integration, Contractor Testing, Begin Developmental Testing and Technical Readiness Review.					
Title: LAV SURVIVABILITY UPGRADES Articles:	-	-	7.641 0	-	7.641 0
FY 2012 Base Plans: LAV SURV UPGRADES-EMD Phase RFP Development, Milestone B Development, MS B, System Development RFP Release, Source Selection					
Title: LAV Indirect Fire Modernization Articles:	-	-	13.089 0	-	13.089 0
FY 2012 Base Plans: LAV Indirect Fire Modernization-EMD Phase RFP Development, Milestone B Development, MS B, System Development RFP Release, Source Selection					
Accomplishments/Planned Programs Subtotals	6.140	14.760	39.954	-	39.954

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/2038: LAV	73.471	193.610	147.051	171.400	318.451	245.467	222.696	188.478	149.071	Continuing	Continuing

D. Acquisition Strategy

The LAV Modification program funds numerous low-dollar, yet extremely important minor modifications, support equipment and tools and other projects that increase LAV reliability and readiness while simultaneously reducing operations and support costs. The Marine Corps PM-LAV Modification Team uses multi-disciplined integrated project teams consisting of engineering, logistical, contracting and financial personnel to manage Modification projects. The majority of contracts issued under the Modification line are subject to the competitive acquisition process.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	1555: <i>Lt Armored Vehicle Prog</i>

"(U)ACQUISITION STRATEGY: The LAV Anti-Tank System program will focus on full and open competition to integrate a new turret into the LAV-AT variant with options for production. The LAV-ATM is a replacement for the obsolete M901A1 turret to correct operational and readiness deficiencies. It will be capable of firing the current family of TOW missiles and be forward compatible with the next generation of heavy anti armor missiles. The program was approved in December of 2009 as part of the Material Development Decision to enter at MS-B based on the technical maturity of the capabilities required, schedule, and budget. Milestone B is scheduled for Jan 2011 approval, leading to the Engineering & Manufacturing Development (EMD) phase. Once the EMD phase is complete, a combined MS C and Full Rate Production Review (FRPR) are planned to be followed by a tailored Production and Deployment Phase and Operations and Support Phase.

"(U)ACQUISITION STRATEGY: The LAV Survivability Upgrade program (Advanced Suspension Upgrades and Power Pack Replacement) will focus on full and open competition to integrate a new Advanced Suspension System into the Family of Light Armored Vehicles (FOLAV) with options for production. This program will further enhance the FOLAV survivability by improving the stand-off distance between the LAV and the ground while maintaining high mobility and automotive performance both on and off road. Currently, the Office of Naval Research (ONR) has been conducting a "Rolling Down Select" of potential competitors with a Technology Readiness Level target of TRL7 that will result in a system capable of meeting this requirement. The Power Pack effort will require integration and testing of the new OEM recommended power pack replacement that will be used in future new production vehicles. The current power pack will be obsolete and must be replaced in the LAV fleet.

(U) D. ACQUISITION STRATEGY: The Indirect Fire Modernization program will acquire and integrate an NDI Mortar system (ordnance and fire control system) into the refurbished existing LAV-Mortar variant chassis. The LAV Indirect Fire Modernization is a replacement for the M252 81mm mortar of the LAV-M variant to correct operational effectiveness deficiencies. The LAV-M will have greater range, improved lethality and greater responsiveness. The preferred material solution was determined from a trade off analysis completed in 2Q04. The study methodology was approved by the AoA IPT later that fiscal year. That analysis leveraged off the results of the completed EFSS AoA. Finalized Acquisition strategy, Acquisition Program Baselines and Test & Evaluation Master Plans will be prepared during MS B.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PROTOTYPES (Surv Upgrades)	C/CPFF	TBD:TBD	-	-		1.589	Mar 2012	-		1.589	0.000	1.589	
SYSTEM DEV (Surv Upgrades)	C/CPFF	TBD:TBD	-	-		2.434	Mar 2012	-		2.434	0.000	2.434	
Support Equipment (Anti-Tank)	C/FP	TBD:TBD	-	-		1.294	Jan 2012	-		1.294	0.000	1.294	
SYSTEM DEV (Indirect Fire)	C/CPFF	TDB:TBD	-	-		6.749	Mar 2012	-		6.749	Continuing	Continuing	Continuing
PRODUCT DEV. (MOD)	C/CPFF	TBD:TBD	4.876	1.826	Mar 2011	6.744	Mar 2012	-		6.744	Continuing	Continuing	Continuing
SYSTEM DEV (Anti-Tank)	C/CPFF	TBD:TBD	2.535	3.846	Jun 2011	1.322	Jan 2012	-		1.322	Continuing	Continuing	Continuing
PROTOTYPES (Anti-Tank)	C/FP	TBD:TBD	-	7.014	Jun 2011	-		-		-	0.000	7.014	
ILS DATA DEVELOPMENT (Anti-Tank)	C/FP	TBD:TBD	-	-		2.151	Jan 2012	-		2.151	Continuing	Continuing	Continuing
Subtotal			7.411	12.686		22.283		-		22.283			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt (Surv Upgrades)	MIPR	TACOM:Warren, MI	-	-		1.742	Oct 2011	-		1.742	0.000	1.742	
Program Mgmt (Indirect Fire)	MIPR	TACOM:Warren, MI	-	-		2.220	Oct 2011	-		2.220	0.000	2.220	
Program Mgmt (MOD)	MIPR	TACOM:Warren, MI	0.132	0.160	Oct 2010	0.591	Oct 2011	-		0.591	Continuing	Continuing	Continuing
Program Mgmt (Anti-Tank)	MIPR	TACOM:Warren, MI	1.476	1.112	Oct 2010	1.257	Oct 2011	-		1.257	Continuing	Continuing	Continuing
Subtotal			1.608	1.272		5.810		-		5.810			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev/Oper. T&E (Indirect Fire)	C/FP	TBD:TBD	-	-		3.930	Jul 2012	-		3.930	0.000	3.930	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Devl/Oper. T&E (Surv. Upgrades)	Various	TBD:TBD	-	-		1.657	Jun 2012	-		1.657	0.000	1.657	
Devl/Oper. T&E (MOD)	Various	TBD:TBD	0.642	0.195	Mar 2011	0.720	Mar 2012	-		0.720	Continuing	Continuing	Continuing
Devl/Oper. T&E (Anti-Tank)	Various	TBD:TBD	-	-		4.262	Mar 2012	-		4.262	Continuing	Continuing	Continuing
Subtotal			0.642	0.195		10.569		-		10.569			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech. Eng. Services (Indirect Fire)	C/FP	TBD:TBD	-	-		0.190	Nov 2011	-		0.190	0.000	0.190	
Tech. Eng. Services (Surv. Upgrades)	C/FP	TBD:TBD	-	-		0.219	Nov 2011	-		0.219	0.000	0.219	
Tech. Eng. Services (MOD)	C/FP	SURVICE: Bellcamp, MD	0.129	0.070	Jan 2011	0.259	Jan 2012	-		0.259	Continuing	Continuing	Continuing
Tech. Eng. Services (Anti-Tank)	C/FP	SURVICE: Bellcamp, MD	1.715	0.537	Feb 2011	0.624	Jan 2012	-		0.624	Continuing	Continuing	Continuing
Subtotal			1.844	0.607		1.292		-		1.292			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		11.505	14.760		39.954		-	39.954			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>
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LAV Anti-Tank Modernization	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
					MS-B ◆						DT				OT									IOC ◆				

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>
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LAV Indirect Fire Modernization	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
										MS-B				DT	OT																	
															K Award																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>
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LAV Survivability Upgrades	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
																					K Award ◆											
																	DT				OT											
									MS-B ◆												MS-C ◆											

2012PB - 0206623M - 1555

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1555: <i>Lt Armored Vehicle Prog</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>LAV Anti-Tank Modernization</i>				
IOC	4	2015	4	2015
MS-B	2	2011	2	2011
Developmental Testing	3	2012	2	2013
Operational Testing	4	2013	1	2014
MS-C	1	2014	1	2014
Production Contract Award	1	2014	1	2014
<i>LAV Indirect Fire Modernization</i>				
FOC	2	2016	2	2016
IOC	2	2015	2	2015
Production Contract Award	3	2013	3	2013
MS-C	3	2013	3	2013
Operational Testing	2	2013	2	2013
Developmental Testing	1	2013	1	2013
MS-B	2	2012	2	2012
<i>LAV Survivability Upgrades</i>				
Production Contract Award	1	2015	1	2015
Operational Testing	4	2014	1	2015
Developmental Testing	3	2013	3	2014
MS-C	1	2015	1	2015
MS-B	2	2012	2	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1901: <i>MC Grnd Wpnry Prod Improvement</i>	8.437	11.514	10.670	-	10.670	12.691	10.801	7.817	6.430	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops joint and Marine Corps unique improvements to infantry weapons technology, non-lethal systems technology, improvements for Night Vision Equipment, Rifle Combat Optics, Family of Individual Optics, and monitors national and international weapons developments.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Company and Battalion Mortars.</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Provided system development and demonstration, pre-Milestone C activities, and purchased Non-developmental Items (NDI) for testing and evaluation of candidate systems and modifications.</p> <p>FY 2011 Plans: This funding will be used to provide system development and demonstration, pre-Milestone C activities, and purchasing Non-developmental Items (NDI) for testing and evaluation of candidate systems and modifications.</p> <p>FY 2012 Base Plans: This funding will continue to be used to provide system development and demonstration, pre-Milestone C activities, and purchasing Non-developmental Items (NDI) for testing and evaluation of candidate systems and modifications.</p>	0.302 0	0.501 0	0.509 0	- 0	0.509 0
<p>Title: Family of Individual Optics (FOIO)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Funded technology to enable the development of the future optical system. As foreign optical development capability increases to match domestic ability, advancements were pursued to enable longer range engagements and reduced size, weight and power. Examples of these efforts included; range gated imagery</p>	1.761 0	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
collection enabling significantly increased range performance, and optical element tiling enabling the reduction of optical size and weight.					
<p>Title: Infantry Weapons Mods.</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: The Infantry Weapons Modification program developed joint and Marine Corps unique improvements to infantry weapons and fire support technology. The improvements addressed critical operational and logistics deficiencies in fielded infantry weapon systems and equipment. The funding permitted economical level-of-effort project participation to analyze, design, develop, and field modifications. This level-of-effort funding line allowed timely response to safety and performance issues that require immediate attention to maintain operational readiness.</p> <p>FY 2011 Plans: The Infantry Weapons Modification program develops joint and Marine Corps unique improvements to infantry weapons and fire support technology. The improvements address critical operational and logistics deficiencies in fielded infantry weapon systems and equipment. The funding permits economical level-of-effort project participation to analyze, design, develop, and field modifications. This level-of-effort funding line allows timely response to safety and performance issues that require immediate attention to maintain operational readiness.</p> <p>FY 2012 Base Plans: The Infantry Weapons Modification program will continue to develop joint and Marine Corps unique improvements to infantry weapons and fire support technology. The improvements will address critical operational and logistics deficiencies in fielded infantry weapon systems and equipment. The funding will permit economical level-of-effort project participation, to analyze, design, develop, and field modifications. This level-of-effort funding line will allow timely response to safety and performance issues that require immediate attention to maintain operational readiness.</p>	1.041 0	1.240 0	1.242 0	-	1.242 0
<p>Title: Mission Payload Module (MPM).</p> <p align="right">Articles:</p> <p>Description: New weapon system that launches non-lethal payloads to greater ranges with broader area coverage, a greater duration of effects, and volume of fire. This will be initially deployed from the Marine Corps Transparent Armored Gun Shield (MCTAGS) on the High Mobility Multipurpose Wheeled Vehicle (HMMWV'S)</p>	3.582 0	2.720 0	1.920 0	-	1.920 0

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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or the HMMWV's replacement vehicle. MPM will deliver counter-personnel, non-lethal effects applicable to controlling crowds, denying/defending areas,controlling access, and engaging threats.

FY 2010 Accomplishments:
Awarded two technology development (TD) contracts to General Dynamics and Ordnance Tactical Systems and Metal Storm Inc. The strategy is to use these contractors during the TD Phase to assess the feasibility of suppressing a human target with a thermobaric payload before proceeding into EMD with a single contractor. The TD Phase will ensure technology is at a Technology Readiness Level - 6 (TRL-6) before proceeding into EMD.

FY 2011 Plans:
Conduct government tests to evaluate the effectiveness of the non-lethal munitions payloads. These tests will determine the threshold levels of light, sound, heat, and blast overpressure produced by the contractor's munitions. The data will be analyzed using government validated and verified (VandV) models developed through the Joint Non-Lethal Weapons Directorate (JNLWD) to determine the level of suppression achieved by munitions. Additionally, the government will evaluate the technical adequacy of the proposed system design to ensure that technology within the proposed system design can meet performance specifications.

FY 2012 Base Plans:
Continue to conduct government tests to evaluate the effectiveness of the non-lethal munitions payloads. These tests will determine the threshold levels of light, sound, heat, and blast overpressure produced by the contractor's munitions. The data will be analyzed using government validated and verified (VandV) models developed through the Joint Non-Lethal Weapons Directorate (JNLWD) to determine the level of suppression achieved by munitions. Additionally, evaluate the technical adequacy of the proposed system design to ensure that technology within the proposed system design can meet the performance specifications.

<i>Title:</i> Night Vision Mod Line. (NVM)	1.474	2.333	2.361	-	2.361
<i>Articles:</i>	0	0	0		0

FY 2010 Accomplishments:
Technology improvements to current systems were pursued to include increased resolution projects for Imaging Intensifier (I2) tubes, which will provide enhanced capability to shoot and maneuver while reducing power and weight on head and weapon mounted optics.

FY 2011 Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Joint participation and Marine Corps unique activities for evaluation of safety, lethality, weight reduction and technology improvements for Marine Corps night vision devices. To accurately predict the life expectancy of legacy systems, a detailed reliability analysis/prediction will be conducted looking at both statistical and physics of failure. Further upgrades to I2 devices will also be pursued, potentially providing the war-fighter a fused solution upgrade to currently fielded equipment.</p> <p>FY 2012 Base Plans: Joint participation and Marine Corps unique activities for evaluation of safety, lethality, weight reduction and technology improvements for Marine Corps night vision devices.</p>					
<p>Title: Escalation of Force Equipment (EOFE)</p> <p align="right">Articles:</p> <p>Description: The initiative will fund the transformation of the existing Force Protection Capability Sets into a new set of pre-packaged, mission-specific modules that contains the individual and unit equipment required specifically for Operation Other Than War (OOTW) missions.</p> <p>FY 2011 Plans: To procure an additional 20 Escalation of Force - Multi Mission (EoF-MM) systems to meet an Urgent Needs Statement (UNS) submitted by the Operating Forces.</p> <p>FY 2012 Base Plans: To evaluate technology updates to the existing assets within the EoF-MM.</p>	-	0.049 0	0.054 0	-	0.054 0
<p>Title: Ocular Interruption (OI).</p> <p align="right">Articles:</p> <p>Description: Ocular Interruption (OI) is the replacement 'Dazzling Laser" program for the B.E. Meyers GBD-IIIIC and the Glare Mount 532P-M (Mini Green) laser. OI will be an 'eye-safe' system that will be used in the Escalation of Force Missions.</p> <p>FY 2011 Plans: Fund system engineering and program management, system test and evaluation, development engineering, Human Effects Center of Excellence support and Engineering and Manufacturing Development Contract.</p> <p>FY 2012 Base Plans:</p>	-	1.851 0	2.701 0	-	2.701 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue to fund system engineering and program management, system test and evaluation, development engineering, Human Effects Center of Excellence support and Engineering and Manufacturing Development Contract.					
<p>Title: Sniper System Capability Set (SSCS).</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Conducted testing to evaluate feasibility of modifying the M39 Enhanced Marksman Rifle to accept a suppressor. The proposed modification was developed by Precision Weapons Section, Weapons Training Battalion and PM Infantry Weapons,. The test was conducted by the Expeditionary Systems Evaluation Division (ESED), Crane. The test demonstrated that the rifle can be safely and accurately fired with a muzzle brake and suppressor attached. Follow-on testing is required to evaluate the impact of the suppressor on the endurance and barrel life of the system.</p> <p>FY 2011 Plans: Funds support testing to evaluate the suitability of a replacement for the current Sniper Rifle Drag Bag, which allows a Marine to transport his rifle and other gear while moving into firing position. In addition, funds will be used to support testing of a modular stock for the M40A5 Sniper Rifle and an evaluation of the life cycle and endurance of the M110 Semi-Automatic Sniper System (SASS). Funds will also be used to conduct an evaluation of the lifecycle of the M110 Semi-Automatic Sniper System (SASS).</p> <p>FY 2012 Base Plans: Funds are planned to conduct testing for a lightweight barrel for the M40 Series Sniper Rifle. The current system has increased in weight since its fielding due to the addition of multiple ancillary items and the potential addition of a metal stock. The test will evaluate the feasibility of obtaining a shorter, lightweight barrel that allows the system to maintain an accuracy of 1.0 Minutes-of-Angle. In addition, funds will be used for testing to evaluate the probability of hit for the M40 Sniper Rifle.</p>	0.277 0	0.302 0	0.308 0	-	0.308 0
<p>Title: Family of Optical Systems. (FOS)</p> <p align="right">Articles:</p> <p>Description: Family of Optical Systems (FOS). Transitions Family of Individual Optics to Family of Optical Systems to encompass all Optical Systems into this program. Provides handheld, helmet mounted and weapons optics systems including various thermal, image intensifier, magnified optical, laser range-finding,</p>	-	2.518 0	1.575 0	-	1.575 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
illuminating, and pointer functionalities. Replaces multiple single-purpose Night Vision Equipment (NVE) fielded to the Marine Corps. <i>FY 2011 Plans:</i> This funding will be utilized to support improvements on the technology that is currently used and develop enabling technology to be used in future optical systems. Research efforts will evaluate the possibility of combining / integrating disparate sensor technology to increase the overall capability. One example will be combining the Infrared (IR) and Image Intensificaton (I2) technologies into one system. To enable future technology development, an Analysis of Alternatives will be conducted. <i>FY 2012 Base Plans:</i> This funding will continue to be utilized to support improvements on the technology that is currently used and develop enabling technology to be used in future optical systems. Research efforts will continue to evaluate the possibility of combining / integrating disparate sensor technologies to increase the overall capability. One example will be combining the (IR) and (I2) technologies into one system.					
Accomplishments/Planned Programs Subtotals	8.437	11.514	10.670	-	10.670

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTEN/0603851M/2319: <i>CBG Non Lethal Weapons</i>	3.800	2.060	3.046	0.000	3.046	0.000	0.000	0.000	0.000	0.000	8.906
• PMC/2208001: <i>Weapons Enhncmnt Program (OOTW)</i>	9.478	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.478
• PMC/2208002: <i>Weapons Enhncmnt Program (MPM)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.074	7.181	0.000	13.255
• PMC/2208003: <i>Weapons Enhncmnt Program (OI)</i>	0.000	0.000	0.000	0.000	0.000	0.000	5.531	9.578	8.387	Continuing	Continuing
• PMC/4930001: <i>Night Vision Equipment (NVM)</i>	10.328	0.000	6.847	9.850	16.697	7.258	10.999	11.368	17.595	Continuing	Continuing
	2.195	2.178	1.226	0.000	1.226	1.311	0.840	0.993	1.252	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PMC/2220003: <i>Under \$5 Million</i> (<i>Com & Batt Mortars</i>)											

D. Acquisition Strategy

These programs range from off-the-shelf modifications to developmental items for safety, reliability, and technology up-grades to meet Marine Corps requirements.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ocular Interruption	Various	MCOTEA:Quantico, VA	-	0.325	Oct 2010	-		-		-	0.000	0.325	
Mission Payload Module	Various	AFRL:San Antonio,TX	0.663	1.145	Nov 2010	0.746	Nov 2011	-		0.746	0.000	2.554	
Night Vision Mod	Various	Various (Contract Industry):TBD	2.535	0.798	Dec 2010	1.557	Nov 2011	-		1.557	0.000	4.890	
Night Vision Mod	Various	NVESD:Ft. Belvoir, VA	3.168	0.900	Dec 2010	-		-		-	0.000	4.068	
Company/Battalion Mortar	WR	NSWC:Dahlgren, VA	3.418	0.501	Mar 2011	0.509	Mar 2012	-		0.509	Continuing	Continuing	Continuing
Scout Sniper Cap Sets	C/FFP	MCSC:Quantico, VA	0.618	-		-		-		-	0.000	0.618	
Family of Optical Systems	Various	Night Vision Lab:Ft. Belvoir, VA	-	0.935	Dec 2010	0.586	Dec 2011	-		0.586	0.000	1.521	
Family of Optical Systems	Various	Contract Industry:TBD	-	0.777	Dec 2010	0.443	Dec 2011	-		0.443	0.000	1.220	
Ocular Interruption	Various	HECOE:TBD	-	0.195	Oct 2010	-		-		-	0.000	0.195	
Ocular Interruption1	Various	TBD:TBD	-	0.851	Jul 2011	-		-		-	0.000	0.851	
Ocular Interruption2	Various	TBD:TBD	-	-		2.701	Jan 2012	-		2.701	0.000	2.701	
Subtotal			10.402	6.427		6.542		-		6.542			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Payload Module	Various	MCSC:Quantico, VA	1.275	1.200	Nov 2010	0.948	Nov 2011	-		0.948	0.000	3.423	
Night Vision Mod	Various	CEOSS:Quantico, VA	1.988	0.402	Dec 2010	0.593	Dec 2011	-		0.593	0.000	2.983	
Infantry Weapons Mods	C/FFP	MCSC:Quantico, VA	2.447	0.360	Jun 2011	0.357	Dec 2011	-		0.357	Continuing	Continuing	Continuing
Family of Optical Systems	Various	MCSC:Quantico, VA	-	0.554	Dec 2010	0.362	Dec 2011	-		0.362	0.000	0.916	
Ocular Interruption	C/FFP	MCSC:Quantico, VA	-	0.480	Jan 2011	-		-		-	0.000	0.480	
Subtotal			5.710	2.996		2.260		-		2.260			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>
PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>	

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FOS- (Crew Served) MS B																												
FOS- (Crew Served) Pre MS B Activities																												
FOS- (Individual) EMD																												
FOS- (Individual) MS B																												
FOS - (Individual) Technology Development																												
FOS - (Individual) MS A																												
FOS- Fused Optic Pre-MS A Activities (ongoing).																												
FOS- Analysis of Alternatives																												
FOS-Reliability Study																												
MPM																												
MPM - Technology Development Phase																												
MPM - Engineering & Manufacturing Phase																												
MPM - Low Rate Initial Production (LRIP)																												
MPM - Production & Deployment Phase																												
MPM - TD Contract Award																												
MPM - EMD Contract Award																												
MPM - LRIP Contract Award																												
MPM - Full Rate Production Contract Award																												
MPM- System Requirement Review (SRR)																												
MPM - Hardware Preliminary Design Review																												
MPM - Preliminary Design Review (PDR)																												
MPM - Critical Design Review (CDR)																												
MPM - Test Readiness Review (TRR)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MPM -TD Phase Testing																												
MPM -DT Testing																												
MPM - Operational Assessment																												
MPM - Operational Testing																												
Mortar Cannons																												
Mortar Cannons - 60mm FRP																												
Mortar Cannons - 60mm Fielding																												
Mortar Cannons - 81mm Qualification																												
Mortar Cannons - 81mm FAT																												
Mortar Cannons - 81mm FRP																												
Mortar Cannons - 81mm Fielding																												
Scout Sniper Cap Sets																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1901				
Ocular Interruption	1	2010	1	2016
Ocular Interruption - Eng & Manufacturing Dev (EMD)	4	2011	1	2014
Ocular Interruption - Low Rate Initial Production (LRIP)	2	2014	2	2014
Ocular Interruption - Production & Development	4	2014	4	2014
Ocular Interruption - LRIP Option Award	2	2014	2	2014
Ocular Interruption - FRP RFP Release	4	2014	1	2015
Ocular Interruption - FRP Contract Award	2	2015	2	2015
Ocular Interruption - Preliminary Design Review	4	2011	4	2011
Ocular Interruption - Critical Design Review / DRR	2	2012	2	2012
Ocular Interruption - Test Readiness Review	4	2012	4	2012
Ocular Interruption - System Verification Review	4	2012	4	2012
Ocular Interruption - Systems Qualification	3	2012	1	2013
Ocular Interruption - N/AIOT&E	2	2014	2	2014
Ocular Interruption - Production Readiness Review	4	2012	4	2012
FOS	1	2010	4	2016
FOS (Crew Served) EMD	2	2016	4	2016
FOS AAO Increase Technology Refresh Procurements	1	2010	4	2016
FOS- (Crew Served) MS B	1	2016	2	2016
FOS- (Crew Served) Pre MS B Activities	2	2011	4	2015
FOS- (Individual) EMD	3	2016	4	2016
FOS- (Individual) MS B	2	2016	3	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
FOS - (Individual) Technology Development	3	2013	4	2015
FOS - (Individual) MS A	2	2013	3	2013
FOS- Fused Optic Pre-MS A Activities (ongoing).	1	2010	1	2013
FOS- Analysis of Alternatives	3	2011	3	2012
FOS-Reliability Study	3	2010	3	2011
MPM	1	2010	2	2015
MPM - Technology Development Phase	3	2010	3	2011
MPM - Engineering & Manufacturing Phase	1	2012	4	2014
MPM - Low Rate Initial Production (LRIP)	1	2015	3	2015
MPM - Production & Deployment Phase	3	2015	4	2015
MPM - TD Contract Award	4	2010	4	2010
MPM - EMD Contract Award	1	2012	1	2012
MPM - LRIP Contract Award	1	2015	1	2015
MPM - Full Rate Production Contract Award	4	2015	4	2015
MPM- System Requirement Review (SRR)	3	2010	3	2010
MPM - Hardware Preliminary Design Review	4	2011	4	2011
MPM - Preliminary Design Review (PDR)	2	2012	2	2012
MPM - Critical Design Review (CDR)	2	2012	2	2012
MPM - Test Readiness Review (TRR)	4	2013	4	2013
MPM -TD Phase Testing	1	2011	2	2011
MPM -DT Testing	3	2013	2	2014
MPM - Operational Assessment	2	2014	2	2014
MPM - Operational Testing	2	2015	3	2015
Mortar Cannons	1	2010	4	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 1901: <i>MC Grnd Wpnry Prod Improvement</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Mortar Cannons - 60mm FRP	1	2010	4	2010
Mortar Cannons - 60mm Fielding	1	2011	4	2011
Mortar Cannons - 81mm Qualification	3	2011	4	2011
Mortar Cannons - 81mm FAT	1	2012	1	2012
Mortar Cannons - 81mm FRP	1	2012	2	2013
Mortar Cannons - 81mm Fielding	4	2012	4	2013
Scout Sniper Cap Sets	1	2010	1	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2086: <i>Soldier/Marine Enhancement</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2086: <i>Soldier/Marine Enhancement</i>	2.957	4.534	5.324	-	5.324	5.466	5.634	5.808	5.936	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Marine Expeditionary Rifle Squad (MERS) mission is to manage the infantry squad "squad as a system" by conducting integration, systems engineering, human factors, and modernization efforts across all the products that are worn, carried and consumed by the rifle squad. Physical integration, capability analysis, modeling and simulation, ergonomics, and configuration management are facilitated by this program in working with the various program managers and project officers in the development of their unique items that contribute to the squads overall capabilities. Weight and volume management are fundamental considerations in the insertion or modernization of any squad equipment. MERS works with Joint and NATO soldier modernization programs to harvest new technologies to increase the capability of the rifle squad. The program also ensures the integration of the rifle squad into the various mobility platforms currently in service and being developed to ensure a Marine and his equipment can operate effectively. This program is essential to ensure the combined synergistic equipment effects enhance the war-fighting functions of the Marine rifle squad towards the strategic Marine Corps war-fighting vision for the future.

Marine Enhancement Program (MEP) provides Research, Development, Test and Evaluation funding for low visibility, low cost items. It focuses on items of equipment which will benefit the individual Marine by reducing the load, increasing survivability, enhancing safety and improving combat effectiveness. The emphasis of the program is on non-developmental item / commercial off the shelf (NDI/COTS) available items which can be quickly evaluated and fielded. This program is coordinated with the Army's Soldier Enhancement Program (SEP).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *MEP	1.831	2.780	2.320	-	2.320
Articles:	0	0	0		0
FY 2010 Accomplishments: MEP funded the following efforts: Next Generation Improved Load Bearing Equipment (ILBE), Improved Helmet Suspension/Retention System, Integrated Intra-Squad Radio (IISR) Battery Charging Adapter, and the Pocket Laser Range Finder.					
FY 2011 Plans: MEP will provide funding for incomplete FY10 projects, as well as the Chest Rig and Individual Water Purification System which were both originally FY10 initiatives with Program Manager - Individual Combat Equipment (PM-ICE). However, ICE had to delay receiving R&D for these items. We also strongly anticipate projects with PM-					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2086: <i>Soldier/Marine Enhancement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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EPS, additional PM-ICE projects and possibly adding the Expeditionary Individual Fitness System as an FY11 initiative.

FY 2012 Base Plans:

Based on the mission and the nature of the MEP as an accelerated acquisition process based on future MEP candidate submissions/selections the projected projects we may fund for FY12 are yet to be determined.

Title: *Marine Expeditionary Rifle Squad (MERS)

Articles:

1.126	1.754	3.004	-	3.004
0	0	0		0

FY 2010 Accomplishments:

Continued to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. Significant efforts conducted with Improved Modular Tactical Vest (IMTV), Scalable Plate Carrier (SPC), Enhanced Combat Helmet (ECH), Joint Light Tactical Vehicle (JLTV), Joint Battle Command Platform (JBCP), and Ground Soldier System (GSS) this year. MERS received five Ground Soldier Systems from each of the three vendors to conduct a capability analysis. Performed significant efforts with JBC-P program office this year regarding a hand held device at the squad level. Conducted in theater and post deployment surveys with infantry battalions. Established and conducted data collection utilizing the Load Effects Assessment Program and conducted mobility assessments. Program Office stood up the Command's Institutional Review Board. Conducting user evaluations on various new items of infantry equipment. Began transition of Gruntworks Squad Integration facility to an on base facility at Camp Barrett. Designed 'Light' workshop recommendations, prototyping, and implemented recommendations. Accomplished significant efforts on power reductions and commonality within the squad. cContinued gathering anthropometric data on equipped Marines and physiological data while Marines conduct various tasks. Continued to engage the Science and Technology community on their various projects for integrated transition paths to programs of record. Continued to reduce weight and volume while increasing integrated capabilities with ergonomic solutions.

FY 2011 Plans:

Continue to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. Continue to develop Helmet mounted day, thermal and infrared I2 sensors as components of an integrated Headborne System. Continue to manage the Squad as a System and quantify weight, thermal and ergonomic effects in operational conditions. Will conduct data collection utilizing the Load Effects Assessment Program and conduct mobility assessments

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2086: <i>Soldier/Marine Enhancement</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>with 1st and 2nd MarDiv infantry battalions. Fully transition the Gruntworks Squad Integration Facility to Camp Barrett by through reconfiguration and upgrades to government R&D facility. This significant effort is to upgrade electrical, Heating Vacuum Air Conditioning (HVAC), plumbing and work spaces into a fully capable facility. The capability analysis conducted with Fires & Maneuver Integration Division (FMID) on the Ground Soldier System and Joint Battle Command Platform (JBCEP) systems will conclude during this fiscal year enabling the Marine Corps to respond with integrated capabilities and attributes needed for the infantry squad in the future. This will support decision briefs on direction the infantry will process in providing command and control digitally to the squad level. Continue to develop methodologies for internal routing of data and power in order to eliminate failure points of connectors and snag hazards. Work with PM ICE on finalization of Improved Modular Tactical Vest (IMTV) and Plate Carrier with Tactical Assault Panel on final integration checks as well as supporting integration work on Enhanced Combat Helmet (ECH). Assist PM ICE on new pack project and crew served weapons pack. Anticipate additional work with PM Infantry Weapons and PM Optics on powered rail solutions and integrated rifle control system for accessories. Continue efforts resident in 2010 that will include recommendations and implementation of the various studies conducted. Provide a Marine Corps position on level of involvement with Ground Soldier System. MERS Infantry Integration Working Group will determine prioritization of integration projects.</p> <p>FY 2012 Base Plans: Continue to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. Complete any remaining initiatives on transition to on-base Squad Integration Facility. Continue with recommendations and prototypes of command and control solutions to the rifle squad based on FY-11 capability analysis conducted and follow-on decisions. Insert Reconfigurable Vehicle Simulator into the Gruntworks Squad Integration Facility and provide direct link with Joint Light Tactical Vehicle (JLTV) on internal configurations to support equipped Marines. Utilize data collected from Marine Corps Load Effects Assessment Program (MC-LEAP) to determine integration issues directly effecting or enhancing mobility of a combat Marine. Objectively utilize MC-LEAP to make alterations of equipment that contributes positive effects to mobility metrics. Continue R&D efforts to develop an integrated headborne system solution. Complete powered rail and rifle accessory controller solution for transition to fielding of system. Re-evaluate the impact of Improved Modular Tactical Vest (IMTV), Plate Carrier (PC), and Tactical Assault Panel (TAP) in the operational environment in order to determine if changes are needed based on length of wear data from the operating forces. Continue to conduct in theater assessments and post deployment surveys with select infantry battalions. Work with Marine Corps Warfighting Laboratory (MCWL) on determining the material solutions that will be required for Expeditionary Marine Air-Ground Task Force (MAGTF) Operations</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2086: <i>Soldier/Marine Enhancement</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
as the replacement for Enhanced Company Operations. This transition will require increased work with Intelligence systems in order to provide sensor and biometric data to and from the rifle squad. Anticipate additional weapons and optics work to continue modernization of the lethality of the rifle squad. Continue to work integrated power solutions with expeditionary power systems and embedded power/data solution to optimize electrical components while minimizing training and cable hazards. The MERS Infantry Integration Working Group is composed of representatives from the Headquarters Marine Corps policy operations ground, the combat development directorate for Fires & Maneuver Integration and MERS.I This group determines the prioritization of integration projects.					
Accomplishments/Planned Programs Subtotals	2.957	4.534	5.324	-	5.324

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC BLI 220800: <i>Marine Enhancement Program</i>	10.680	3.261	3.266	0.000	3.266	3.368	3.482	3.598	3.675	0.000	31.330

D. Acquisition Strategy

Non Developmental Item/ Contractor of the Shelf (NDI/COTS)

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2086: <i>Soldier/Marine Enhancement</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MERS Product Development	C/FFP	Marine Corps Systems Command:Quantico, VA	1.775	0.715	Mar 2011	1.132	Mar 2012	-		1.132	0.000	3.622	Continuing
MEP Product Development	C/FFP	Marine Corps Systems Command:Quantico, VA	1.812	0.560	Mar 2011	0.650	Mar 2012	-		0.650	0.000	3.022	Continuing
Subtotal			3.587	1.275		1.782		-		1.782	0.000	6.644	

Remarks
Various contracts, MIPRS, Work Requests and Supply Requisitions are awarded through the year for the various initiatives in the MEP and MERS programs. Contract Method reflects where the majority of the funding is allocated. Contract award date reflects the first of multiple awards.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MEP Operational Test & Eval	C/FFP	Marine Corps Systems Command:Quantico, VA	1.164	0.350	Mar 2011	0.400	Mar 2012	-		0.400	0.000	1.914	Continuing
Subtotal			1.164	0.350		0.400		-		0.400	0.000	1.914	

Remarks
Various contracts, MIPRS, Work Requests and Supply Requisitions are awarded through the year for the various initiatives in the MEP and MERS programs. Contract Method reflects where the majority of the funding is allocated. Contract award date reflects the first of multiple awards.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MERS Developmental Test & Eval	C/FFP	Marine Corps Systems Command:Quantico, VA	1.552	0.320	Mar 2011	1.122	Mar 2012	-		1.122	0.000	2.994	Continuing
	C/FFP		2.573	1.187	Mar 2011	0.569	Mar 2012	-		0.569	0.000	4.329	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2086: <i>Soldier/Marine Enhancement</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost			
MEP Developmental Test & Eval		Various Marine Corps Systems Command: Quantico, VA												
Subtotal			4.125	1.507			1.691			-	1.691	0.000	7.323	

Remarks
Various contracts, MIPRS, Work Requests and Supply Requisitions are awarded through the year for the various initiatives in the MEP and MERS programs, therefore a specific contract award date cannot be identified. Contract award date reflects the first of multiple awards.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost			
MERS Program Mgmt/Tech Spt	C/FFP	Marine Corps Systems Command: Quantico, VA	1.815	0.719	Mar 2011	0.750	Mar 2012	-		0.750	0.000	3.284	Continuing	
MEP Program Mgmt/Tech Spt	C/FFP	Marine Corps Systems Command: Quantico, VA	1.442	0.683	Mar 2011	0.701	Mar 2012	-		0.701	0.000	2.826	Continuing	
Subtotal			3.257	1.402		1.451		-		1.451	0.000	6.110		

Remarks
Various contracts, MIPRS, Work Requests and Supply Requisitions are awarded through the year for the various initiatives in the MEP and MERS programs. Contract Method reflects where the majority of the funding is allocated. Contract award date reflects the first of multiple awards.

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.133	4.534	5.324	-	5.324	0.000	21.991	

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2112: <i>Lightweight 155mm Howitzer</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2112: <i>Lightweight 155mm Howitzer</i>	1.584	-	-	-	-	-	2.346	2.398	2.437	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Lightweight 155mm Howitzer (LW155), also known as the M777A2, provides direct, reinforcing, and general support fires to maneuver forces. It replaces all howitzers in all missions in the USMC and replaces the M198 howitzer as the general support artillery for light forces in the Army. The LW155 fires unassisted projectiles to a range of 15 miles and assisted projectiles to 19 miles, but the addition of the digital fire control system enables the weapon to program and fire the improved Excalibur precision-guided munition to ranges in excess of 25 miles with better than 10-meter Circular Error Probable (CEP) accuracy. The LW155 is the first ground combat system whose major structures are made of high strength titanium alloy and the system makes extensive use of hydraulics to operate the breech, load tray, recoil and wheel arms. The combination of titanium structures and the use of hydraulic systems resulted in a significant weight savings over the M198 system (7000 lbs.). Compared to the M198, the LW155 emplaces three-times faster and displaces four-times faster. It traverses 32 percent more terrain worldwide and is 70 percent more survivable than the M198. The LW155 was first introduced into the Marine Corps in April 2005 and since then 10th, 11th, 12th and 14th Marines and the schoolhouses have been fielded. The Army has been fielding the system to its Stryker Brigades and Fires Brigades. The LW155 is currently in OEF with both Services.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *LW155 Test and Evaluation	1.584	-	-	-	-
Articles:	0				
FY 2010 Accomplishments: System Test and Evaluation					
Accomplishments/Planned Programs Subtotals	1.584	-	-	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC BLI 218500: <i>155MM Lightweight Towed Howitzer</i>	60.371	113.956	5.552	16.000	21.552	5.545	6.054	6.271	6.497	0.000	1,320.000

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2112: <i>Lightweight 155mm Howitzer</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PMC BLI 700000: <i>SPARES</i>	0.904	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.078

D. Acquisition Strategy

This effort shall design, integrate and qualify a Laser Ignition System for the M777A2 Lightweight 155mm Howitzer (LW155) that will replace the current Primer Feed Mechanism (PFM) and M82 percussion primers. This product improvement will eliminate problems which have been experienced in OEF and OIF and result in significant life cycle cost savings by eliminating the needs for the acquisition of primers to fire artillery rounds.

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2237: <i>Amphibious Vehicle Test</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2237: <i>Amphibious Vehicle Test</i>	0.816	0.929	0.934	-	0.934	0.940	0.959	0.976	0.993	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) The Amphibious Vehicle Test Branch (AVTB) is a one-of-a-kind Department of Defense test facility for amphibious vehicles and supports the requirements of all services. The AVTB conducts developmental, combined developmental/operational, and follow-on testing and evaluation of production hardware. It also conducts Product Assurance Testing and Substitute or alternative parts and material testing for amphibious vehicles and associated equipment. Because of its year-round temperate climate, diverse terrain, and 17 miles of coastline, the AVTB is ideal for the amphibious vehicle, as well as ship related testing. The AVTB is in close proximity to San Clemente Island which is used frequently for live fire sea-to-shore testing and high-speed water testing. The AVTB is committed to testing product improvement programs, engineering change proposal design changes, and field change requests. The Amphibious Vehicle Test Branch (AVTB) serves as the primary Test & Evaluation facility for all amphibious vehicles.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Support Services	0.193	0.453	0.741	-	0.741
Articles:	0	0	0		0
FY 2010 Accomplishments: Provide the necessary support assets required to conduct safe and accurate simultaneous developmental testing on amphibious vehicle prototypes. Provide the maintenance, refurbishment, upgrade, and replacement of test equipment and instrumentation as necessary to provide program support, supplies, and services at the AVTB test site as well as various off-site testing locations to support Developmental Testing. This includes the upgrade of instrumentation for over the horizon (OTH) capability in developing weapons systems to support operational maneuver from the sea, providing organic supply support including management operations, general accounting, and a maintenance float of equipment; and providing intermediate maintenance (third echelon) of organic non-developmental communication electronic and ordnance equipment.					
FY 2011 Plans: Provide the necessary support assets required to conduct safe and accurate simultaneous developmental testing on amphibious vehicle prototypes. Provide the maintenance, refurbishment, upgrade, and replacement of test equipment and instrumentation as necessary to provide program support, supplies, and services at the AVTB test site as well as various off-site testing locations to support amphibious vehicle developmental Testing. This includes the upgrade of instrumentation for over the horizon (OTH) capability in developing weapons systems to support operational maneuver from the sea, providing organic supply support including management					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2237: <i>Amphibious Vehicle Test</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
operations, general accounting, and a maintenance float of equipment; and providing intermediate maintenance (third echelon) of organic non-developmental communication electronic and ordnance equipment.					
<i>FY 2012 Base Plans:</i> Provide the necessary support assets required to conduct safe and accurate simultaneous developmental testing on amphibious vehicle prototypes. Provide the maintenance, refurbishment, upgrade, and replacement of test equipment and instrumentation as necessary to provide program support, supplies, and services at the AVTB test site as well as various off-site testing locations to support scheduled amphibious vehicle developmental Testing. This includes the upgrade of instrumentation for over the horizon (OTH) capability in developing weapons systems to support operational maneuver from the sea, providing organic supply support including management operations, general accounting, and a maintenance float of equipment; and providing intermediate maintenance (third echelon) of organic non-developmental communication electronic and ordnance equipment.					
<i>Title:</i> Contracts	0.623	0.476	0.193	-	0.193
<i>Articles:</i>	0	0	0		0
<i>FY 2010 Accomplishments:</i> Provide funding for necessary services provided by Marine Corps Base, Camp Pendleton, California for electricity, heating, and other power charges; and long distance telephone support. Provide funding for calibration of laboratory test equipment and maintenance services provided by MCLB Barstow and 1st Force Service Support Group (FSSG).					
<i>FY 2011 Plans:</i> Provide funding for necessary services provided by Marine Corps Base, Camp Pendleton, California for electricity, heating, and other power charges; and long distance telephone support. Provide funding for calibration of laboratory test equipment and maintenance services provided by MCLB Barstow and 1st Force Service Support Group (FSSG).					
<i>FY 2012 Base Plans:</i> Provide funding for necessary services provided by Marine Corps Base, Camp Pendleton, California for electricity, heating, and other power charges; and long distance telephone support. Provide funding for calibration of laboratory test equipment and maintenance services provided by MCLB Barstow and 1st Force Service Support Group (FSSG).					
Accomplishments/Planned Programs Subtotals	0.816	0.929	0.934	-	0.934

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2237: <i>Amphibious Vehicle Test</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Work will be led in-house. Necessary contractor support will be provided by Marine Corps Base Camp Pendleton via existing contracts. General Services Administration will be used for vehicle leasing contract.

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2315: <i>Training Devices/Simulators</i>	12.328	2.226	14.642	-	14.642	20.091	15.499	12.291	12.487	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) Training simulators supported by this program element include Combined Arms Command & Control Training Upgrade System (CACCTUS), Deployable Virtual Training Environment (DVTE), Multiple Integrated Laser Engagement System (MILES) 2000, Marine Air-Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements, Range Modernization/Transformation (RM/T), Supporting Arms Virtual Trainer (SAVT), Squad Immersive Training Environment (SITE), and Training Support. These training systems provide tactical weapons and decision-making skill training from entry level through (MAGTF) staff level. Systems will be interoperable and will allow for mission planning, mission rehearsal and concept evaluation in a valid synthetic environment with objective, and timely feedback. Through live, virtual and constructive simulation, the Marine Corps will have the means to train jointly, educate, develop doctrine and tactics, formulate and assess operational plans, assess warfighting situations, and define operational requirements.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Supporting Arms Virtual Trainer (SAVT)</p> <p align="right">Articles:</p> <p>Description: The SAVT will advance the training capability, operational readiness, and tactical proficiency of USMC Joint Terminal Attack Controllers (JTACS), Forward Observers (FOs), and Forward Air controllers (FACs). The personnel will use training scenarios that require the placement of tactical ordnance on selected targets using Joint Close Air Support (JCAS) procedures and observed fire procedures for Naval Surface Fire Support (NSFS), artillery and mortar fire to perform destruction, neutralization, suppression, illumination/ coordinated illumination, interdiction and harassment fire missions.</p> <p>FY 2012 Base Plans: Provide modeling and simulation for Boeing AV8B Harrier II aircraft enhancements to SAVT, continued enhancements of Digital Channel Associated Signalling (CAS) to integrate Marine organic equipment, and integration of SAVT and Digital CAS providing interoperability amongst virtual training systems.</p>	-	-	0.375 0	-	0.375 0
<p>Title: Squad Immersive Training Environment (SITE)</p> <p align="right">Articles:</p> <p>Description: The Squad Immersive Training Environment (SITE) is an integrating construct or "toolkit" of Live, Virtual and Constructive (LVC) training capabilities used to significantly improve infantry squad operational</p>	-	-	1.978 0	-	1.978 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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readiness and squad leader tactical decision-making skills. The collection of LVC training capabilities within SITE will enhance opportunities for squad collective training to increase tactical proficiency, confidence, and readiness for real world operations. SITE will enhance skill transfer and assessment by enabling squads to finish, test, and remediate training in preparation for a capstone exercise such as pre-deployment training.

FY 2012 Base Plans:
This is a new start responding to the Marine Requirements Oversight Council (MROC) approval of the Squad Immersive Training Environment (SITE) Initial Capabilities Document (ICD) (Joint Interest). SITE funding will leverage existing and new Office Naval Research (ONR) transition deliverables to provide immersive training capabilities with existing programs and new program of record systems. The FY12 will deliver prototype/1st article of immersive training systems - specific system definition is pending prioritized findings of the AoA (Analysis of Alternatives).

Title: Deployable Virtual Training Environment (DVTE)	5.003	-	3.672	-	3.672
Articles:	0		0		0

Description: DVTE is a laptop Personal Computer (PC) based simulation system capable of emulating organic and supporting Infantry Battalion weapons systems and training scenarios to facilitate training and readiness based training. Its portable configuration allows Marines to train in areas where there are few options for training garrison, aboard ship, at remote reserve locations, and deployed. DVTE training includes language and culture training, platoon and squad level tactics, employment of supporting arms, and various Recognition of Combatants (ROC) packages. DVTE is part of a Commander's "training toolkit" contributing to the building block approach to standards based training focusing on achieving an improved level of combat readiness.

FY 2010 Accomplishments:
Awarded a software development contract to Applied Visual Technologies (AVT), Inc. The contract provides continued capabilities development for the Deployable Virtual Training Environment (DVTE). The enhancements include interoperability with Command and Control systems giving the Warfighter the opportunity to train with real tactical gear in a simulated environment. Additionally, this contract improves and enhances the DVTE Combined Arms Network simulations that simulate and stimulate a wide variety of weapons systems and platforms used in the Marine Corps.

FY 2012 Base Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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Continues DVTE network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan. Initiate additional efforts specified under the DVTE Capability Development Document (CDD) Increment II that includes Command, Control, Communications and Computers Integration (C4I) and DVTE interoperability with the Combined Arms Command and Control Upgrade System (CACCTUS).

Title: Range Modernization/Transformation (RM/T)	0.941	0.098	2.302	-	2.302
Articles:	0	0	0		0

Description: Range Modernization/Transformation (RM/T) developments are associated with modernizing live training ranges at major USMC bases and stations. This development effort enhances After Action Review (AAR) with ground truth feedback, realistic representation of Opposing Forces (OPFOR) and enhance range and exercise control capabilities. RM/T integrates Live, Virtual, and Constructive training technologies, thereby, enhancing fielded live-fire, force-on-target, and force-on-force training capabilities.

FY 2010 Accomplishments:
Upgrade and enhance the Tank Weapons Gunnery Simulation System (TWGSS)/Precision Gunnery System (PGS) hardware and software to integrate with the Instrumented-Tactical Engagement Simulation System (I-TESS). Upgrades and enhancements required for a Force-on-Force (FoF) Phase for the Operational Assessment 2 and Initial Operational Test and Evaluation (IOT&E) of the Expeditionary Fighting Vehicle (EFV), Amphibious Assault Vehicle (AAV), Light Armored Vehicle (LAV), and M1A1 Tank.

FY 2011 Plans:
Continues minimal development efforts of the Automatic Performance Evaluation and Lessons Learned (APELL) system prototypes at USMC locations.

FY 2012 Base Plans:
Complete integration of Tactical Audio Capture System (TACS) with Marine Corps Instrumented Training System (MC-ITS). Develop interfaces for range targetry to operate in the Live/Virtual/Constructive Training Environment (LVC-TE). In the LVC-TE range targetry and battlefield effects will be stimulated (by virtual and constructive simulations) at distant locations. Range targetry will also report status (active, inactive, damaged, destroyed) through the LVC-TE to constructive and virtual simulations.

Title: Multiple Integrated Laser Engagement System (MILES)	0.091	0.050	0.050	-	0.050
Articles:	0	0	0		0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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Description: MILES 2000 is the base technology for Range Instrumentation development that is used in Force-on-Force (FoF), Free Play, and FoF Target exercises. MILES 2000 is an integral component of the Position Location Instrumentation (PLI) providing individual Marine feedback and engagement adjudication.

FY 2010 Accomplishments:
Upgraded and enhanced the Tank Weapons Gunnery Simulation System (TWGSS)/Precision Gunnery System (PGS) hardware and software to integrate with the Instrumented-Tactical Engagement Simulation System (I-TESS). The upgrades and enhancements were required for a FoF phase for the Operational Assessment 2 and Initial Operational Test and Evaluation (IOT&E) of the Expeditionary Fighting Vehicle (EFV), Amphibious Assault Vehicle (AAV), Light Armored Vehicle (LAV), and M1A1 Tank.

FY 2011 Plans:
Continues minimal Live, Virtual and Constructive (LVC) training technologies integration with Tactical Video Capture System (TVCS), Deployable Instrumented Tactical System (DITS) and Immersive Infantry Trainer (IIT).

FY 2012 Base Plans:
Continues minimal Live, Virtual and Constructive (LVC) training technologies integration with the Automatic Performance Evaluation and Lessons Learned (APELL) system.

Title: Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements Articles:	2.013 0	0.127 0	2.775 0	-	2.775 0
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Description: Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) is the only Marine Corps aggregate-level constructive simulation system designed to support the training of Senior Commanders and their staffs in command and control processes and procedures. The system provides interactive, multi-sided, force-on-force, real-time modeling and simulation with stand-alone tactical combat scenarios for air ground, surface, and amphibious operations. With interfaces to fielded Marine Corps Command, Control, Communications and Computers (C4I) systems such as Command and Control Personal Computer (C2PC) and Intelligence Operations Server (IOS). MTWS provides the battle staff the ability to seamlessly train with and use other C4I systems during the execution on an MTWS supported training event. Through the implementation of a High Level Architecture (HLA) interface between MTWS and the entity-level Joint Conflict and Tactical Simulation (JCATS) system, high resolution tactical objectives can be simulated in JCATS and reflected within the context of a larger operation scenario conducted in MTWS.

FY 2010 Accomplishments:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Provided for the continued development of the MTWS HLA Bridge and integration into Joint Live, Virtual and Constructive (JLVC) Federation spirals 4 and 5 while providing Enhanced Mission Scenario Events List (MSEL) capability.</p> <p>FY 2011 Plans: Maintain databanks for continued development of the MTWS HLA Bridge and integration into the Joint Live, Virtual, and Constructive (JLVC) Federation.</p> <p>FY 2012 Base Plans: Increase the levels of development in the JLVC effort with development of Irregular Warfare (IW) simulation capabilities. These include modeling the kinetic and non-kinetic behaviors and automated Master Scenario Events List (MSEL) injects to focus the training audience on staff actions.</p>					
<p>Title: Combined Arms Command and Control Trainer Upgrade System (CACCTUS)</p> <p align="right">Articles:</p>	4.280 0	0.236 0	3.430 0	-	3.430 0
<p>Description: Combined Arms Command and Control Trainer Upgrade System (CACCTUS) is a combined arms staff training system that when fully fielded will enable comprehensive Marine Corps staff, unit, and team training both at home station Combined Arms Staff Training (CAST) facilities and through distributed training involving CAST facilities across the Marine Corps. CACCTUS is an upgrade to the USMC's CAST that provides fire support training to the Marine Air Ground Task Force (MAGTF) elements up to and including Marine Expeditionary Brigade (MEB) level. Using the system components and simulation capabilities, two dimensional (2D) and three dimensional (3D) visuals, interfaced Command, Control, Communications and Computers (C4I), synthetic terrain, and an After Action Review (AAR), the concept of operations for the CACCTUS system is to immerse the trainees in a realistic, scenario-driven environment to enable commands and their battle staffs to train or rehearse combined arms tactics, techniques and procedures for decision-making processes.</p> <p>FY 2010 Accomplishments: FY10 provided funds for the incremental development and user prioritized CACCTUS simulation product developments for all required testing coupled to fielding of systems to three Combined Arms Staff Trainer (CAST) training facilities at: Camp Pendleton, CA, Marine Corps Base Hawaii, Camp Courtney, and Okinawa, Japan. Completed installation and upgrading fielded sites with the newly developed system.</p> <p>FY 2011 Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue the development of MEB Staff training for modeling and simulation and greater Command, Control, Communications, Computers and Intelligence Systems Reconnaissance (C4ISR) capabilities in support of the integration of key elements of the Live, Virtual and Constructive (LVC) resources.					
<i>FY 2012 Base Plans:</i> Continue development of LVC training capabilities and in order to refine warfare specific software application in support of key company, battalion, regimental and MEB staff training requirements.					
<i>Title:</i> Training Support	-	1.715	0.060	-	0.060
<i>Articles:</i>		0	0		0
<i>Description:</i> Provide training solution development efforts for the modernization of training systems by providing high fidelity, immersive simulations and capabilities. Integrates existing live, virtual, and constructive training capabilities to provide fully coordinated Marine Air Ground Training Force (MAGTF) training exercises that realistically simulate the operating environment.					
<i>FY 2011 Plans:</i> Supports the development of Marine Expeditionary Brigade (MEB) Staff training for modeling and simulation and greater Command, Control, Communications, Computers and Intelligence Systems Reconnaissance (C4ISR) capabilities in support of the integration of key elements of the Live, Virtual and Constructive (LVC) resources.					
<i>FY 2012 Base Plans:</i> Continue to maintain databank development of the MAGTF Tactical Warfare Simulation (MTWS) High Level Architecture (HLA) bridge and integration into the Joint Live, Virtual, and Constructive (JLVC) Federation.					
Accomplishments/Planned Programs Subtotals	12.328	2.226	14.642	-	14.642

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/BLI#6532001: <i>Training Devices, CACCTUS</i>	4.101	6.134	3.242	0.000	3.242	4.472	4.589	3.616	3.668	999.999	1,052.048
• PMC/BLI#6532002: <i>Training Devices, MILES</i>	0.012	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	23.268
	77.277	49.234	2.835	24.573	27.408	30.884	31.605	32.391	33.364	999.999	1,345.381

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/BLI#6532003: <i>Training Devices, RM/T</i>											
• PMC/BLI#6532004: <i>Training Devices, DVTE</i>	0.000	0.000	0.714	0.000	0.714	2.705	1.927	0.000	0.000	0.000	5.346
• PMC/BLI#6532005: <i>Training Devices, SAVT</i>	0.000	1.078	0.661	0.000	0.661	0.656	0.000	0.000	0.000	0.000	2.395

D. Acquisition Strategy

- (U) CACCTUS - Competitive software development contract (CPFF) and Work Request to NSWC
- (U) DVTE - Competitively award development contract (CPFF)
- (U) MILES - Competitively awarded Broad Agency Announcement (BAA) Experimentation/Development contracts (CPFF)
- (U) RM/T - Competitive Cost plus Fixed Fee contract (CPFF) and Work Request to NSWC
- (U) SAVT - Government engineering lab labor (Work Request)
- (U) MTWS - Sole Source Firm Fixed Price (SS/FFP) and MIPR to Ft Monmouth
- (U) SITE - Competitive Cost plus Fixed Fee (CPFF) and Work Request to NAWCTSD

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CACCTUS - S/W Dev	SS/CPFF	Cole Engineering Systems Inc. (CESI):Orlando, FL	14.596	0.236	Jun 2011	-		-		-	0.000	14.832	
CACCTUS - S/W Dev	C/CPFF	TBD:TBD	-	-		3.249	Jun 2012	-		3.249	0.000	3.249	
CACCTUS - S/W Dev	Various	Various:Various	2.640	-		-		-		-	0.000	2.640	
Training Support -CACCTUS	C/CPFF	TBD:TBD	-	1.715	Apr 2011	-		-		-	0.000	1.715	
DVTE - S/W Dev	MIPR	Lockheed:Orlando, FL	2.222	-		-		-		-	0.000	2.222	
DVTE - S/W Dev	C/FFP	TBD:TBD	-	-		3.672	Jan 2012	-		3.672	0.000	3.672	
DVTE - S/W Dev	C/FFP	Bohemia Interactive:Orlando, FL	6.661	-		-		-		-	0.000	6.661	
DVTE - S/W Dev	Various	Various:Various	1.739	-		-		-		-	0.000	1.739	
MILES Technology Insertion	C/CPFF	SARNOFF:Princeton, NJ	-	0.050	Jan 2011	-		-		-	0.000	0.050	
MILES Continuous Technology Refresh	C/CPFF	Lockheed Martin:Orlando, FL	-	-		0.050	Dec 2011	-		0.050	0.000	0.050	
MILES MC-ITS Development	C/CPFF	Lockheed Martin:Orlando, FL	1.430	-		-		-		-	0.000	1.430	
RM/T TACS Dev	WR	NSWC:Corona, CA	2.619	-		0.450	Dec 2011	-		0.450	Continuing	Continuing	Continuing
RM/T OV-1 Dev	C/FFP	MITRE:Orlando, FL	0.073	-		-		-		-	0.000	0.073	
RM/T APELL	C/CPFF	SARNOFF:Princeton, NJ	3.952	0.098	Jan 2011	-		-		-	0.000	4.050	
RM/T PLI Integration	C/FP	CTC:Orlando, FL	1.278	-		-		-		-	0.000	1.278	
RM/T Range Safety Test	MIPR	US Army:Aberdeen Proving Ground	0.274	-		-		-		-	0.000	0.274	
RM/T DITS	C/FP	SAAB USA:Orlando, FL	1.045	-		-		-		-	0.000	1.045	
RM/T Competitive BAA	C/FP	Various:Various	1.253	-		-		-		-	0.000	1.253	
RM/T Instrumentation Support	WR	NSWC:Corona, CA	-	-		1.500	Dec 2011	-		1.500	Continuing	Continuing	Continuing
RM/T Target Technology Development	C/CPFF	TBD:TBD	-	-		0.352	Jan 2012	-		0.352	Continuing	Continuing	Continuing
SAVT Lab Effort	WR		-	-		0.375	Feb 2012	-		0.375	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		NAWC TSD:Orlando, FL											
MTWS - S/W Dev	SS/FFP	L-3 Communications:San Diego, CA	10.070	-		2.605	Jan 2012	-		2.605	0.000	12.675	
Training Support - MTWS- SW Dev	SS/FFP	L-3 Communications:San Diego, CA	-	-		0.060	Jan 2012	-		0.060	0.000	0.060	
Subtotal			49.852	2.099		12.313		-		12.313			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CACCTUS - S/W Dev Support	WR	NAWC:Orlando, FL	1.444	-		0.181	Oct 2011	-		0.181	Continuing	Continuing	Continuing
MTWS - S/W Dev Support	MIPR	Department of Energy (DOE):Livemore, CA	0.321	-		-		-		-	0.000	0.321	
MTWS - S/W Dev Support	MIPR	MITRE:Fort Monmouth, NJ	12.000	0.127	Feb 2011	0.170	Feb 2012	-		0.170	Continuing	Continuing	Continuing
SITE - Material Solution Analysis	WR	NAWCTSD:Orlando, FL	-	-		0.500	Oct 2011	-		0.500	Continuing	Continuing	Continuing
SITE - Material Solution Analysis	C/CPFF	Cole Engineering:Orlando, FL	-	-		1.478	Nov 2011	-		1.478	0.000	1.478	
Subtotal			13.765	0.127		2.329		-		2.329			

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		63.617	2.226	14.642	-	14.642		

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>

APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206623M <i>Marine Corps Ground Combat/Supporting Arms Systems</i>	PROJECT NUMBER AND NAME 2315 Training Devices/Simulators
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Combined Arms Command & Control Training Upgrade System (CACCTUS) PROGRAM SCHEDULE								
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Software Development Reviews Prototype Functionality User Evaluation		■						
Version 5.1 Release, Install Test & validation at Camp Lejeune, NC (CLNC)		◆	◆					
Version 5.1 Delivery, Simulation Installation at 29 Palms, CA			◆					
Initial Operating Capability (IOC) Combined Arms Sys Trainer			◆					
Hardware (HW) Install Camp Pendleton CA, Okinawa, and Hawaii and V5.1 Delivery and install			◆	◆				
Version 5.2 SW Release, Software (SW) Upgrade All Sites, Test and Validation				◆				
Version 5.3 SW Release, Software (SW) Upgrade All Sites, Test and Validation					◆			
Version 5.4 SW Release, Software (SW) Upgrade All sites, Test and Validation						◆		
Version 5.5 SW Release, Software (SW) Upgrade All sites, Test and Validation							◆	
Version 5.6 SW Release, Software (SW) Upgrade All sites, Test and Validation								◆

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>
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Exhibit R-4-4a Project Schedule/Detail		DATE: August 2010
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206623M <i>Marine Corps Ground Combat/Supporting Arms Systems</i>	PROJECT NUMBER AND NAME 2315 Training Devices/Simulators

Marine Air-Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) PROGRAM SCHEDULE								
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Contract Awards		◆	◆	◆	◆	◆	◆	◆
MTWS IPT/CCB	◆	◆	◆	◆	◆	◆	◆	◆
Version 3.4.3 Operational Testing Version 3.4.3 SW Release		◆						
Version 3.4.4 Operational Testing Version 3.4.4 SW Release			◆	◆				
Version 4.0.0.0 Operational Testing Version 4.0.0.0 SW Release					◆			
Version 4.0.1.0 Operational Testing Version 4.0.1.0 SW Release						◆		
Version 4.1.0.0 Operational Testing Version 4.1.0.0 SW Release							◆	
Version 4.1.1.0 Operational Testing Version 4.1.1.0 SW Release								◆
Program Support								
Hardware Refresh			◆			◆		

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>

**Deployable Virtual Training Environment (DVTE)
C2315**

Exhibit R-4-4a Project Schedule/Detail		DATE: August 2010
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 7 Operational Sys Dev	PROGRAM ELEMENT 0206623M Marine Corps Ground Combat/Supporting Arms Systems	PROJECT NUMBER AND NAME 2315 Training Devices/Simulators

Deployable Virtual Training Environment (DVTE) PROGRAM SCHEDULE								
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
SW Development Annual Version Update					◇	◇	◇	◇

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>

Squad Immersive Training Environment (SITE) (SITE) PROGRAM SCHEDULE								
	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
NAWTSD Labor Material Solution Analysis Phase					◇	◇	◇	◇
CESI Team Labor (Research Personnel) Material Solution Analysis Phase					◇	◇	◇	◇

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>

C2315E - MILES

	FY09	FY10	FY11	FY12
MILES MC-ITS Development				
MILES Technology Insertion				
MILES Continuous Technology Refresh				

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0206623M: *MC Ground Cmbt Spt Arms Sys*

PROJECT

2315: *Training Devices/Simulators*

Training Support

	FY11	FY12
CACCTUS SW Dev Rel V5	◇	
MTWS SW Dev		◇

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>

SAVT

	FY12	FY13	FY14
Govt Engineering Lab Labor			

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2315: <i>Training Devices/Simulators</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2315				
CACCTUS Program Support	1	2011	4	2012
CACCTUS - SW Dev Release V5	2	2010	2	2015
DVTE - SW Releases	2	2012	4	2016
MILES Technology Insertion	2	2011	4	2011
MILES Continuous Technology Refresh	1	2012	4	2012
MILES MC-ITS Development	1	2010	4	2011
MTWS - S/W Dev Contract	2	2012	4	2016
MTWS - S/W Dev Support	2	2011	2	2015
RM/T TACS Development	1	2010	4	2012
RM/T APELL Development	2	2011	4	2013
RM/T Instrumentation Support	1	2010	4	2016
RM/T Targetry Technology Development	3	2012	4	2014
SITE - Material Solution Analysis	1	2012	4	2016
SAVT Government Engineering Lab Labor	2	2012	4	2016
Training Support/CACCTUS SW Dev Rel V5	3	2011	2	2012
Training Support/MTWS S/W Dev Contract	2	2012	2	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2503: <i>Initial Issue</i>	9.075	12.271	6.888	-	6.888	8.973	7.585	7.521	7.613	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Family of Combat Equipment Support and Services provides research, development, test and evaluation on low cost items with emphasis on non-developmental/commercially available items. Much of the RDT&E is conducted in coordination/concert with other services and joint organizations, and in consideration of RDT&E efforts being pursued by the other Services. Items approved for procurement will transition into Procurement Marine Corps and the Operation and Maintenance Marine Corps lines for Individual Combat Equipment, Medical Equipment and Shelters. The focus is to provide state of the art combat equipment (e.g. lightweight helmet, sleeping bags, load bearing systems, etc.), medical equipment (e.g. Authorized Medical Allowance (AMAL)/Authorized Dental Allowance (ADAL), Enroute Care, Mobile Medical Monitors, etc.), and Family of Shelters (softwall, different frames and fabrics, etc.). The benefits will reduced logistics, less weight, improved combat effectiveness, better echelon I and II care for Marines, improved individual and unit protection, tactical mobility, etc. The employment of state-of-the-art equipment will ensure Marines are equipped with the best items that technology can offer.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: *Family of Ballistic Protection Systems</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Explored new commercial technologies to be inserted into current body armor to reduce weight, increase survivability, lethality and mobility. Both torso and head/neck ballistic studies conducted to assess blunt trauma/shock forces on the body and how ballistic materials/designs can afford the most protection while reducing weight. Modeling and simulation initiatives are being used to baseline current equipment and enable configuration/compatibility management of new equipment.</p> <p>FY 2011 Plans: Will explore new commercial technologies to be inserted into body armor to reduce weight, increase survivability, lethality and mobility. Both torso and head/neck ballistic studies will be conducted to assess blunt trauma/shock forces on the body and how ballistic materials/designs can afford the most protection while reducing weight. Modeling and simulation initiatives will be used to baseline current equipment and enable configuration/compatibility management of new equipment.</p>	3.933 0	5.296 0	-	-	-
<p>Title: *Clothing and Flame Resistant Organizational Gear</p> <p align="right">Articles:</p>	0.428 0	0.686 0	0.727 0	-	0.727 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p><i>FY 2010 Accomplishments:</i> Pursued designs, prototyping, user surveys, textile and physical properties testing and the full range of clothing design in response to new uniform initiatives.</p> <p><i>FY 2011 Plans:</i> Will pursue designing, prototyping, user surveys, textile and physical properties testing and the full range of clothing design in response to new uniform initiatives.</p> <p><i>FY 2012 Base Plans:</i> Will pursue designing, prototyping, user surveys, textile and physical properties testing and the full range of clothing design in response to new uniform initiatives.</p>					
<p><i>Title:</i> *Family of Mountain Cold Weather Clothing & Equipment (FMCWCE)</p> <p align="right"><i>Articles:</i></p>	0.850 0	1.234 0	1.240 0	-	1.240 0
<p><i>FY 2010 Accomplishments:</i> FMCWCE provided a capability set of clothing and equipment to facilitate Marine Air-Ground Task Force (MAGTF) operations in mountainous and cold weather environments. The intent is to reduce the individual load (weight/volume) of the Ground Combat Element (GCE), particularly dismounted infantry while maintaining or improving system performance. Mobility, survivability and sustainability requirements for the Command Element (CE), Combat Service Support Element (CSSE), and the Air Combat Element (ACE) is being met. This program is substantially improving current inventory items and adding new capabilities such as steep earth and alpine ice equipment for which we train Marines yet have no assets to perform these missions within the operating forces. Rapid technological advances in the outdoor commercial market make it possible to continuously update the capability provided by FMCWCE.</p> <p><i>FY 2011 Plans:</i> FMCWCE will provide a capability set of clothing and equipment to facilitate Marine Air-Ground Task Force (MAGTF) operations in mountainous and cold weather environments. The intent is to reduce the individual load (weight/volume) of the Ground Combat Element (GCE), particularly dismounted infantry while maintaining or improving system performance. Mobility, survivability and sustainability requirements for the Command Element (CE), Combat Service Support Element (CSSE), and the Air Combat Element (ACE) will also be met. This program will substantially improve current inventory items and add new capabilities such as steep earth and alpine ice equipment for which we train Marines yet have no assets to perform these missions within</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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the operating forces. Rapid technological advances in the outdoor commercial market make it possible to continuously update the capability provided by FMCWCE.

FY 2012 Base Plans:
FMCWCE will provide a capability set of clothing and equipment to facilitate Marine Air-Ground Task Force (MAGTF) operations in mountainous and cold weather environments. The intent is to reduce the individual load (weight/volume) of the Ground Combat Element (GCE), particularly dismounted infantry while maintaining or improving system performance. Mobility, survivability and sustainability requirements for the Command Element (CE), Combat Service Support Element (CSSE), and the Air Combat Element (ACE) will also be met. This program will substantially improve current inventory items and add new capabilities such as steep earth and alpine ice equipment for which we train Marines, yet have no assets to perform these missions within the operating forces. Rapid technological advances in the outdoor commercial market make it possible to continuously update the capability provided by FMCWCE.

Title: *Family of Improved Load Bearing Equipment	0.316	0.512	0.328	-	0.328
Articles:	0	0	0		0

FY 2010 Accomplishments:
This program supported the Marine Corps requirements for a replacement load bearing system and individual water purifier and supports continual system improvement throughout the life-cycle of the equipment.

FY 2011 Plans:
This program will support the Marine Corps requirements for a replacement load bearing system and individual water purifier and will support continual system improvement throughout the life-cycle of the equipment.

FY 2012 Base Plans:
This program will support the Marine Corps requirements for a replacement load bearing system and individual water purifier and will support continual system improvement throughout the life-cycle of the equipment.

Title: *Family of Individual Warfighter Equipment (formerly Combat Support Equipment)	0.086	0.136	0.138	-	0.138
Articles:	0	0	0		0

FY 2010 Accomplishments:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>		PROJECT 2503: <i>Initial Issue</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
Continued to enhance or improve unit operational capabilities and enhance unit morale. In addition, some items such as the field tarp and poncho will greatly enhance survivability, mobility and provide significantly improved field equipment to Marines.						
FY 2011 Plans: Continue to enhance or improve unit operational capabilities and enhance unit morale. In addition, some items such as the field tarp and poncho will greatly enhance survivability, mobility and provide significantly improved field equipment to Marines.						
FY 2012 Base Plans: Continue to enhance or improve unit operational capabilities and enhance unit morale. In addition, some items such as the field tarp and poncho will greatly enhance survivability, mobility and provide significantly improved field equipment to Marines.						
Title: *Family of Field Medical Equipment						
Articles:						
		2.897	3.651	3.761	-	3.761
		0	0	0		0
FY 2010 Accomplishments: Family of Field Medical Equipment: Continue the development of Vaccine and Reagent Refrigeration System (VARRS) to replace all refrigeration except the HEMACOOOL blood refrigerator in the AMAL inventory. The VARRS is rugged, well insulated, and will operate on battery power. The Rugged design will improve survivability over the current refrigeration systems in austere environments. Development of Commercial-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items to evaluate their functionality to improve the quality of warfighter's healthcare. Testing of Commercial-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items for the Enroute Care System to evaluate functionality for patient transportation post resuscitative surgery in forward echelons and for the replacement of the obsolete Narkomed ruggedized anesthesia machine. Testing of other medical equipment items to evaluate their functionality improving the quality of warfighter healthcare and to reduce the logistics footprint of USMC medical equipment. Plan to complete testing and initiation of technology insertion.						
FY 2011 Plans: Family of Field Medical Equipment: Complete the development of Vaccine and Reagent Refrigeration System (VARRS) to replace all refrigeration except the HEMACOOOL blood refrigerator in the AMAL inventory. The VARRS is rugged, well insulated, and will operate on battery power. The Rugged design will improve survivability over the current refrigeration systems in austere environments. Development of Commercial-off-						

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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the-shelf/Non-developmental (COTS/NDI) medical equipment items to evaluate their functionality to improve the quality of warfighter's healthcare. Testing of Commercial-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items for the Enroute Care System to evaluate functionality for patient transportation post resuscitative surgery in forward echelons and for the replacement of the obsolete Narkomed ruggedized anesthesia machine. Testing of other medical equipment items to evaluate their functionality improving the quality of warfighter healthcare and to reduce the logistics footprint of USMC medical equipment. Plan to complete testing and initiation of technology insertion.

FY 2012 Base Plans:
Family of Field Medical Equipment: Testing of Commercial-off-the-shelf/Non-developmental (COTS/NDI) medical equipment items for the Enroute Care System to evaluate functionality for patient transportation post resuscitative surgery in forward echelons and for the replacement of the obsolete Narkomed ruggedized anesthesia machine. Testing of other medical equipment items to evaluate their functionality improving the quality of warfighter healthcare and to reduce the logistics footprint of USMC medical equipment. Planned completion of testing and initiation of technology insertion. Testing of mobile and ruggedized field X-ray units to replace current digital radiological units that have exceed life expectancy.

Title: *Family of Shelters and Shelter Equipment	0.122	0.149	0.077	-	0.077
Articles:	0	0	0		0

FY 2010 Accomplishments:
Family of Shelters and Shelter Equipment: Command and Control Systems have out grown the current Modular Command Post Shelter in size and performance. Changing operational doctrine, logistic support systems and advances in technology require development of an advanced lightweight rapid deploying tactical shelter with a minimum of 420 sq. ft. Designed and engineered to increase capability, reduce weight, cost and cube of soft wall shelters. Explored and tested new technologies in coordination with the US. Army for insertion into the shelter.

FY 2011 Plans:
Family of Shelters and Shelter Equipment: Command and Control Systems have out grown the current Modular Command Post Shelter in size and performance. Changing operational doctrine, logistic support systems and advances in technology require development of an advanced lightweight rapid deploying tactical shelter with a

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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minimum of 420 sq. ft. Design and engineering to increase capability, reduce weight, cost and cube of soft wall shelters. Explore and test new technologies in coordination with the US. Army for insertion into the shelter.

FY 2012 Base Plans:
Family of Shelters and Shelter Equipment: Command and Control Systems have out grown the current Modular Command Post Shelter in size and performance. Changing operational doctrine, logistic support systems and advances in technology require development of an advanced lightweight rapid deploying tactical shelter with a minimum of 420 sq. ft. Design and engineering to increase capability, reduce weight, cost and cube of soft wall shelters. Explore and test new technologies in coordination with the US. Army for insertion into the shelter.

Title: Family of Combat Field Feeding	0.443	0.607	0.617	-	0.617
Articles:	0	0	0		0

FY 2010 Accomplishments:
Improvements on current technology for heating individual rations were explored to test individual ration heater concepts and equipment. Although some progress has been made in recent years to improve field feeding equipment, most current field messing equipment consists of manpower and maintenance intensive M59 ranges utilizing M2 burners setup within tents. The current Tray Ration Heater System has a large footprint, lacks a quick displacement capability, includes unsafe and hazardous components (specifically the M2 burners), and does not conform to the single fuel concept. Also, this current system is not compatible with tenets of Operational Maneuver from the Sea (OMFTS) and does not facilitate maneuverable warfare operations. Current cookware sanitizing equipment consists of 30 gallon containers used in consonance with immersion water heaters, fueled by gasoline (MOGAS).

FY 2011 Plans:
Improvements on current technology for heating individual rations will be explored to test individual ration heater concepts and equipment. Although some progress has been made in recent years to improve field feeding equipment, most current field messing equipment consists of manpower and maintenance intensive M59 ranges utilizing M2 burners setup within tents. The current Tray Ration Heater System has a large footprint, lacks a quick displacement capability, includes unsafe and hazardous components (specifically the M2 burners), and does not conform to the single fuel concept. Also, this current system is not compatible with tenets of Operational Maneuver from the Sea (OMFTS) and does not facilitate maneuverable warfare operations. Current

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
cookware sanitizing equipment consists of 30 gallon containers used in consonance with immersion water heaters, fueled by gasoline (MOGAS).					
<i>FY 2012 Base Plans:</i> Improvements on current technology for heating individual rations will be explored to test individual ration heater concepts and equipment. Although some progress has been made in recent years to improve field feeding equipment, most current field messing equipment consists of manpower and maintenance intensive M59 ranges utilizing M2 burners setup within tents. The current Tray Ration Heater System has a large footprint, lacks a quick displacement capability, includes unsafe and hazardous components (specifically the M2 burners), and does not conform to the single fuel concept. Also, this current system is not compatible with tenets of Operational Maneuver from the Sea (OMFTS) and does not facilitate maneuverable warfare operations. Current cookware sanitizing equipment consists of 30 gallon containers used in consonance with immersion water heaters, fueled by gasoline (MOGAS).					
Accomplishments/Planned Programs Subtotals	9.075	12.271	6.888	-	6.888

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/652200: <i>Field Medical Equipment</i>	21.384	3.432	24.079	16.744	40.823	15.297	26.217	11.986	10.877	0.000	151.996
• PMC/661300: <i>Combat Field Feeding System</i>	2.207	4.283	5.026	0.000	5.026	5.111	5.201	5.291	5.380	0.000	56.399

D. Acquisition Strategy
 Family of Ballistic Protection Systems, Family of Mountain Cold Weather Clothing and Equipment, Family of Improved Load Bearing Equipment, Family of Individual Warfighter Equipment, Clothing and Flame Resistant Organizational Gear, and Combat Field Feeding Systems items utilize various acquisition strategies. These programs leverage heavily on current developments and technology in commercial industry. As a result, the government's R&D phase is relatively short. Contracting is performed by either Marine Corps Systems Command Contracting Directorate, the Naval Research Laboratory or the U.S. Army Natick Soldier Research, Development and Engineering Center via Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts. ID/IQ contracts are used to decrease the government risk, allow maximum contract flexibility and capitalize on the savings realized by utilizing Economic Order Quantities.
 Shelters: The Shelter acquisition strategy is to modify Non-Developmental Items (NDI) to further meet the requirements of the Marine Corps, to support development of multi-service items through inter-service agreements and to adopt Commercial-Off-the-Shelf (COTS) items.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	2503: <i>Initial Issue</i>

Family of Field Medical Equipment: These programs leverage heavily on current development and technology in the commercial medical industry. The field medical acquisition strategy is to modify Non-Developmental Items (NDI) and adopt Commercial-Off-the-Shelf (COTS) items.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Ballistic Protection Systems	MIPR	USA NSRDEC:Natick, MA	6.333	0.835	Feb 2011	-		-		-	Continuing	Continuing	Continuing
Family of Ballistic Protection Systems	WR	NRL:Washington, DC	13.205	2.888	Feb 2011	-		-		-	Continuing	Continuing	Continuing
Family of Ballistic Protection Systems	WR	ONR:Arlington, VA	0.246	0.100	Feb 2011	-		-		-	Continuing	Continuing	Continuing
Improved Load Bearing Equipment	MIPR	USA NSRDEC:Natick, MA	2.214	0.512	Mar 2011	0.328	Jan 2012	-		0.328	Continuing	Continuing	Continuing
Family of Mountain Cold Weather	MIPR	USA NSRDEC:Natick, MA	3.783	0.299	Jan 2011	0.310	Jan 2012	-		0.310	Continuing	Continuing	Continuing
Combat Field Feeding Systems	MIPR	USA NSRDEC:Natick, MA	1.333	0.394	Mar 2011	0.401	Jan 2012	-		0.401	Continuing	Continuing	Continuing
Individual Warfighter Equipment	MIPR	USA NSRDEC:Natick, MA	0.070	0.075	Mar 2011	0.064	Mar 2012	-		0.064	Continuing	Continuing	Continuing
Clothing & FR Organizational Gear	MIPR	USA NSRDEC:Natick, MA	2.310	0.484	Dec 2010	0.494	Dec 2011	-		0.494	Continuing	Continuing	Continuing
Family of Field Medical	MIPR	USAMRMC:Ft. Detrick, MD	0.106	0.105	Dec 2010	-		-		-	0.000	0.211	
Family of Field Medical	MIPR	USAMRMC:Ft. Detrick, MD	0.159	0.157	Dec 2010	-		-		-	0.000	0.316	
Family of Field Medical	WR	NMRC:Silver Spring, MD	0.517	0.525	Dec 2010	1.795	Jan 2012	-		1.795	0.000	2.837	
Family of Field Medical	MIPR	AFMESA:Ft. Detrick, MD	1.373	1.775	Mar 2011	1.356	Jan 2012	-		1.356	0.000	4.504	
Subtotal			31.649	8.149		4.748		-		4.748			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Field Medical	WR	NHRC:San Diego, CA	0.360	0.376	Dec 2010	0.360	Dec 2011	-		0.360	0.000	1.096	

UNCLASSIFIED

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2503: <i>Initial Issue</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.360	0.376		0.360		-		0.360	0.000	1.096	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Field Medical	MIPR	USAMRMC:Ft. Detrick, MD	0.060	0.075	Jun 2011	-		-		-	0.000	0.135	
Family of Field Medical	MIPR	USAMRAA:Ft. Detrick, MD	0.532	0.608	Jun 2011	-		-		-	0.000	1.140	
Family of Shelters & Shelter Equipment	MIPR	USA NSRDEC:Natick, MA	0.132	0.149	Mar 2011	0.077	Dec 2011	-		0.077	0.000	0.358	
Family of Ballistic Protection Systems	MIPR	USA NSRDEC:Natick, MA	6.243	0.958	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Family of Ballistic Protection Systems	SS/CPFF	MCSC:Quantico VA	2.344	0.515	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Family of Mountain Cold Weather	MIPR	USA NSRDEC:Natick, MA	2.544	0.405	Dec 2010	0.425	Dec 2011	-		0.425	Continuing	Continuing	Continuing
Family of Mountain Cold Weather	C/FP	MCSC:Quantico, VA	0.030	0.040	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Family of Field Medical	WR	NAMRUSA:San Antonio, TX	-	-		0.060	Jan 2012	-		0.060	0.000	0.060	
Family of Field Medical	WR	NHRC:San Diego, CA	-	-		0.053	Dec 2011	-		0.053	0.000	0.053	
Family of Field Medical	MIPR	AFMESA:Ft. Detrick, MD	-	-		0.137	Dec 2011	-		0.137	0.000	0.137	
Subtotal			11.885	2.750		0.752		-		0.752			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2513: <i>Body Armor</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2513: <i>Body Armor</i>	-	-	5.332	-	5.332	5.436	5.576	5.752	5.852	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

This project was previously in Project C2503 Family of Ballistic Protection.

A. Mission Description and Budget Item Justification

Body Armor Development (BAD) provides the most technologically advanced ballistics protection at the lightest weight in the world today. With current combat operations, these items have generated considerable Congressional and public interest since these items are considered life-saving equipment. When evaluated in total, BAD programs provide the critical systems that save lives, reduce the severity of combat injuries, and increase combat effectiveness by keeping more Marines in the fight. A key component of all of the BAD programs is that as new threats emerge on the battlefield, BAD equipment must constantly adapt to meet these new threats. BAD programs are truly a force multiplier on the battlefield of today and tomorrow. It includes Modular Tactical Vest (MTV), Enhanced Small Arms Protective Inserts (ESAPI), Helmet, and Eye Protection.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: New Accomplishment/Planned Program Entry	-	-	5.332	-	5.332
Articles:			0		0
FY 2012 Base Plans: Explore new commercial technologies to be inserted into body armor to reduce weight, increase survivability, lethality and mobility. Conduct both torso and head/neck ballistic studies to assess blunt trauma/shock forces on the body and how ballistic materials/designs can afford the most protection while reducing weight. Modeling and simulation initiatives will baseline current equipment and enable configuration/compatibility management of new equipment.					
Accomplishments/Planned Programs Subtotals	-	-	5.332	-	5.332

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Marine Corps Body Armor Research, Development, Testing & Evaluation activities include seeking new developments in ballistic technology that feature reductions in weight, improvements in ballistic performance, enhanced operational effectiveness through improved product designs and the application of new material technologies

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	2513: <i>Body Armor</i>

to reduce total ownership costs by improving the expected service life of fielded systems. In order to accomplish these goals PM-Infantry Combat Equipment (ICE) uses a broad array of government and contractor performers to achieve the desired end state. This includes efforts being conducted in conjunction with partnered government performers, research and development contracts and partnership intermediaries where applicable. The Marine Corps also seeks to leverage advancements in industry capabilities to rapidly field nondevelopmental and commercially available off the shelf armor solutions after confirming performance through characterizing ballistic performance and expected subjective user acceptance as measured during user evaluations.

E. Performance Metrics

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>	1.923	1.542	1.946	-	1.946	2.372	2.420	2.472	2.516	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

High Mobility Artillery Rocket Systems (HIMARS) is a C-130 transportable, wheeled, indirect fire, rocket/missile system capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System Family of Munitions (MFOM). The system includes one launcher, two Re-Supply Systems, and the MFOM. HIMARS will provide the Fleet Marine Force with 24 hour ground-based, responsive General Support/General Support Reinforcing (GS/GSR) indirect fires which accurately engage targets at long range (60+km) with high volumes of lethal fire under all weather conditions throughout all phases of combat operations ashore to include irregular warfare and distributed operations. HIMARS is a significant improvement over currently fielded ground fire support systems. During a 24 hour period, the system will be expected to conduct multiple moves and multiple fire missions. HIMARS will satisfy the Marine Corps requirement for an indirect fire system that is responsive, maneuverable, and is capable of engaging targets at long range.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *HIMARS Systems Engineering	1.373	1.184	1.393	-	1.393
Articles:	0	0	0		0
Description: Primary and ancillary hardware development and systems engineering support, includes Navy, Marine Corps, Army and contractor development efforts. The U.S. Army Program Office continues to provide system updates to accommodate emerging requirements such as armor upgrades, and enhanced communications. This element provides engineering support for integration of the changes into the U.S.M.C. inventory.					
FY 2010 Accomplishments: Primary and ancillary hardware development and systems engineering support, includes Navy, Marine Corps, Army and contractor R&D efforts. The U.S. Army Program Office continues to provide system updates to accommodate emerging requirements such as armor upgrades, and enhanced communications. This element provides engineering support for integration of the changes into the U.S.M.C. inventory.					
FY 2011 Plans: Develop improved Guided Multiple Launch Rocket System (GMLRS) Ignition safety devices and conduct development on improved fire control systems.					
FY 2012 Base Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Conduct development on improved fire control systems.					
<p>Title: *HIMARS Testing</p> <p align="right">Articles:</p> <p>Description: Support Test and Evaluation Program with Army. Support Test and Evaluation Program for Marine Corps Principle End Items. The U.S. Army Program Office continues to provide improvements such as the alternate warheads. This funding includes support and oversight to ensure testing supports U.S.M.C. requirements.</p> <p>FY 2010 Accomplishments: Support Test and Evaluation Program with Army. Support Test and Evaluation Program for Marine Corps Principle End Items. The U.S. Army Program Office continues to provide improvements such as the alternate warheads. This funding includes support and oversight to ensure testing supports U.S.M.C. requirements.</p> <p>FY 2011 Plans: Support Test and Evaluation Program with Army. Support Test and Evaluation Program for Marine Corps Principle End Items. The U.S. Army Program Office continues to provide improvements such as the alternate warheads. This funding includes support and oversight to ensure testing supports U.S.M.C. requirements.</p> <p>FY 2012 Base Plans: Support Test and Evaluation Program with Army. Support Test and Evaluation Program for Marine Corps Principle End Items. The U.S. Army Program Office continues to provide improvements such as the alternate warheads. This funding includes support and oversight to ensure testing supports U.S.M.C. requirements.</p>	0.397 0	0.205 0	0.400 0	-	0.400 0
<p>Title: *HIMARS Program Support</p> <p align="right">Articles:</p> <p>Description: Program Management at Quantico, USMC Liaison Office at Army Program, USMC Test Unit at Ft Sill, and contractor support. HIMARS is a joint program run from the Army Program Office at Huntsville, AL. U.S.M.C. provides onsite liaison with the Army at Huntsville to support joint acquisition and program planning.</p> <p>FY 2010 Accomplishments:</p>	0.153 0	0.153 0	0.153 0	-	0.153 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Program Management at Quantico, USMC Liaison Office at Army Program, USMC Test Unit at Ft Sill, and contractor support. HIMARS is a joint program run from the Army Program Office at Huntsville, AL. U.S.M.C. provides onsite liaison with the Army at Huntsville to support joint acquisition and program planning.</p> <p>FY 2011 Plans: Program Management at Quantico, USMC Liaison Office at Army Program, USMC Test Unit at Ft Sill, and contractor support. HIMARS is a joint program run from the Army Program Office at Huntsville, AL. U.S.M.C. provides onsite liaison with the Army at Huntsville to support joint acquisition and program planning.</p> <p>FY 2012 Base Plans: Program Management at Quantico, USMC Liaison Office at Army Program, USMC Test Unit at Ft Sill, and contractor support. HIMARS is a joint program run from the Army Program Office at Huntsville, AL. U.S.M.C. provides onsite liaison with the Army at Huntsville to support joint acquisition and program planning.</p>					
Accomplishments/Planned Programs Subtotals	1.923	1.542	1.946	-	1.946

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/BLI 221200: <i>HIMARS SYSTEMS AN ROCKETS</i>	66.984	167.763	14.695	10.488	25.183	6.740	6.857	6.978	7.096	0.000	824.893

D. Acquisition Strategy

USMC HIMARS is procuring the Army rocket launcher, the current / future Multiple Launch Rocket System Family of Munitions (MFOM) and developing an Medium Tactical Vehicle Replacement (MTVR)-based Resupply System (truck(s) with associated trailer(s)). The Marine Corps launcher and ammo requirements closely match U.S. Army requirements. The US Army HIMARS program received increased funding and is now an Acquisition Category ACAT IC level program. Marine Corps Resupply System requirements are unique. Accordingly, the Marine Corps is an integrator and must ensure the required warfighting capability is fielded to the Marine Corps operating forces. The USMC has aligned funds to reflect an emphasis on not only hardware development, but also the integration of these principle end items while providing associated evaluation and oversight. Additionally, the Marine Corps program is establishing the training and support methodologies that will result in associated skill sets required within the Marine Corps. The Marine Corps strategy is incorporating Evolutionary Acquisition and capability upgrades to both the systems and rocket munitions. These improvements parallel the US Army's acquisition strategy.

E. Performance Metrics

Milestone Reviews

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev	C/FP	Lockheed Martin:Dallas, TX	15.227	0.646	Nov 2010	0.858	Nov 2011	-		0.858	0.000	16.731	
Ancillary Hardware Dev	C/FP	RTTC:Redstone, AL	1.753	0.262	Dec 2010	0.235	Dec 2011	-		0.235	0.000	2.250	
Systems Engineering	WR	NSWC:Dahlgren, VA	3.741	0.276	Dec 2010	0.300	Dec 2011	-		0.300	0.000	4.317	
Subtotal			20.721	1.184		1.393		-		1.393	0.000	23.298	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev Test & Eval	WR	NSWC:Dahlgren, VA	2.860	0.073	Nov 2010	0.400	Nov 2011	-		0.400	0.000	3.333	
Dev Test & Eval	WR	Redstone Test Ctr:Redstone, AL	1.790	0.132	Dec 2010	-		-		-	0.000	1.922	
Subtotal			4.650	0.205		0.400		-		0.400	0.000	5.255	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mngmnt	WR	MCSC:Quantico, VA	2.176	0.030	Oct 2010	0.030	Oct 2011	-		0.030	0.000	2.236	
Program Mngmnt	C/FFP	CEOSS:Quantico, VA	5.277	0.123	Oct 2010	0.123	Oct 2011	-		0.123	0.000	5.523	
Subtotal			7.453	0.153		0.153		-		0.153	0.000	7.759	

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			32.824	1.542		1.946		-		1.946	0.000	36.312	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 2928																												
Full Operational Capability				■																								
GMLRS Alternative Warhead Milestone B					■																							
GMLRS Alternative Warhead Milestone C															■													
GMLRS Alternative Warhead Operational Test																											■	
GMLRS Alternative Warhead Full Rate Production																											■	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 2928: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2928				
Full Operational Capability	4	2010	4	2010
GMLRS Alternative Warhead Milestone B	1	2011	1	2011
GMLRS Alternative Warhead Milestone C	1	2014	1	2014
GMLRS Alternative Warhead Operational Test	2	2015	2	2015
GMLRS Alternative Warhead Full Rate Production	3	2015	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 3098: <i>Fire Support System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3098: <i>Fire Support System</i>	19.255	20.559	27.219	-	27.219	20.008	18.072	7.563	7.451	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops joint and Marine Corps unique improvements to artillery fire support technology and fire support equipment. These initiatives include but are not limited to the Expeditionary Fire Support System (EFSS) munitions testing as well as testing and development of the Family of Artillery Munitions (FAM). Two new initiatives have begun in FY10, Common Laser Range Finder (CLRF) Refresh and Modeled Meteorological Information Manager (MIMM). The CLRF Refresh Research and Development effort is intended to develop an improved, lighter, CLRF that incorporates the latest True North Module (TNM). MIMM development sustains the capability of Marine artillerymen to obtain accurate, near real time, meteorological data through the use of models, and eliminates the need to track balloons either visually or electronically. The FS Mod Line associated with this PE provides resources for four fielded systems; Ground Counter Fire Sensor (GCFS), Improved Position Azimuth Determining System (IPADS), Marine Artillery Survey Set (MASS), and the Meteorological Station Group (MSG).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: *Common Laser Range Finder (CLRF)</p> <p align="right">Articles:</p> <p>FY 2011 Plans: The Common Laser Range Finder (CLRF) provides the ability to perform target detection, recognition, identification, and location determination. For FY11 CLRF Refresh will begin. The CLRF Refresh effort will develop a lighter weight more capable CLRF with a non magnetic True North Module determination capability.</p> <p>FY 2012 Base Plans: The Common Laser Range Finder (CLRF) provides the ability to perform target detection, recognition, identification, and location determination. For FY11 CLRF Refresh will begin. The CLRF Refresh effort will develop a lighter weight more capable CLRF with a non magnetic True North Module determination capability.</p>	-	5.871 0	11.610 0	-	11.610 0
<p>Title: *Modeled Meteorological Information Manager (MMIM)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: (Begin replacing the MMS in FY11) The RDT&E dollars is utilized to complete a software application required to create, receive and transmit modeled meteorological information from the Air Force Weather Agency databases and integrate the computer and communications hardware.</p> <p>FY 2011 Plans:</p>	1.363 0	0.980 0	0.486 0	-	0.486 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 3098: <i>Fire Support System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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The RDT&E dollars will be used to develop interfaces with the Marine Air Wing METMFR NEXGEN, Air Force regional and deployed weather squadrons and the Navy Fleet Numerical Meteorology and Oceanography Center. This will provide deployed artillery and target acquisition systems access to accurate meteorological information required to ensure safe and effective employment of weapon systems. This effort requires the development and testing of interfaces between the MMIM software and external weather agency databases. Currently the MMIM can access only one database. It is critical that the system have access to multiple sources of meteorological information to ensure the safe computation of artillery firing data.

FY 2012 Base Plans:

The RDT&E dollars will be used to develop interfaces with the Marine Air Wing METMFR NEXGEN, Air Force regional and deployed weather squadrons and the Navy Fleet Numerical Meteorology and Oceanography Center. This will provide deployed artillery and target acquisition systems access to accurate meteorological information required to ensure safe and effective employment of weapon systems. This effort requires the development and testing of interfaces between the MMIM software and external weather agency databases. Currently the MMIM can access only one database. It is critical that the system have access to multiple sources of meteorological information to ensure the safe computation of artillery firing data.

Title: *Expeditionary Fire Support Systems (EFSS)	15.851	10.382	12.181	-	12.181
Articles:	0	0	0		0

Description: Follow On Test and Evaluation (FOT&E) was completed in March 2008. Full Rate Production (FRP) decision made in May 2008. EFSS supports irregular warfare and distributed operations.

FY 2010 Accomplishments:

R&D dollars in the budget required for the following: EFSS weapon system upgrades, specifically digitization (there is currently a communications gap to the system) to support the guided rounds. Precision Extended Range Munition testing and development to provide the EFSS system an accurate extended range capability. Develop and produce hardware for the guided rounds and have the various field activities test the hardware. Integration to ballistics and firing tables (software development) and qualification of energetics. In addition, system weight reduction and armoring development are outyear candidates. EFSS supports irregular warfare and distributed operations.

FY 2011 Plans:

R&D dollars in the budget required for the following: EFSS weapon system upgrades, specifically digitization (there is currently a communications gap to the system) to support the guided rounds. Extended range guided

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 3098: <i>Fire Support System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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ammunition development. Develop and produce hardware for the guided rounds and have the various field activities test the hardware. Integration to ballistics and firing tables (software development) and qualification of energetics. In addition, system weight reduction and armoring development are outyear candidates. EFSS supports irregular warfare and distributed operations.

FY 2012 Base Plans:
R&D dollars in the budget required for the following: EFSS weapon system upgrades, specifically digitization (there is currently a communications gap to the system) to support the guided rounds. Extended range guided ammunition development. Develop and produce hardware for the guided rounds and have the various field activities test the hardware. Integration to ballistics and firing tables (software development) and qualification of energetics. In addition, system weight reduction and armoring development are outyear candidates. EFSS supports irregular warfare and distributed operations.

Title: *Fire Support Mods (FSM)	0.782	1.844	1.518	-	1.518
Articles:	0	0	0		0

FY 2010 Accomplishments:
The Fire Support Mods line provides technical refresh, maintenance support and operations support for fielded artillery, survey, and meteorological systems, and target acquisition systems to include the Ground Counter Fire Sensor (GCFS), Improved Position Azimuth Determining System (IPADS), Marine Artillery Survey Set (MASS), Meteorological Station Group (MSG), and True North Module for CLRF. RDT&E funding is used to develop new end items, components and SL-3 items; execution of product improvements/modifications; and upgrades to systems software. For FY10 GPS was integrated into the IPADS, data collection for Event Classification of GCFS acoustic events was completed, and TNM development began.

FY 2011 Plans:
Development of a mobile battery charging capability for GCFS, integration of GCFS Met sensor data with MMIM and completion of the TNM development for CLRF.

FY 2012 Base Plans:
Development of a mobile battery charging capability for GCFS, integration of GCFS Met sensor data with MMIM and completion of the TNM development for CLRF.

Title: *Family of Artillery Munitions (FAM)	0.203	0.312	0.316	-	0.316
Articles:	0	0	0		0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 3098: <i>Fire Support System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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<p><i>FY 2010 Accomplishments:</i> Support development of Advanced Cannon Artillery (ACAAP) and Excalibur to include Weapons Systems Explosives Safety Review Board (WSESRB) testing, program support, and travel. Actively monitor U.S. Army artillery ammunition development programs in order to leverage and influence Army developmental efforts.</p> <p><i>FY 2011 Plans:</i> Support development of Advanced Cannon Artillery (ACAAP) and Excalibur to include Weapons Systems Explosives Safety Review Board (WSESRB) testing, program support, and travel. Actively monitor U.S. Army artillery ammunition development programs in order to leverage and influence Army developmental efforts.</p> <p><i>FY 2012 Base Plans:</i> Support development of Advanced Cannon Artillery (ACAAP) and Excalibur to include Weapons Systems Explosives Safety Review Board (WSESRB) testing, program support, and travel. Actively monitor U.S. Army artillery ammunition development programs in order to leverage and influence Army developmental efforts.</p>					
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<i>Title:</i> *Insensitive Munitions	1.056	1.170	1.108	-	1.108
<i>Articles:</i>	0	0	0		0

<p><i>FY 2010 Accomplishments:</i> Two programs are included in the Insensitive Munitions (IM) funding line; Insensitive Munitions and Marine Ammunition Knowledge Enterprise (MAKE). The IM development will focus on improved packaging materials/ design, venting technology, development/ incorporation of a less sensitive propelling charge and all associated munitions qualification testing of the incorporated technologies. The MAKE effort develops an enterprise knowledge repository designed, evolved and updated to facilitate knowledge dominance. MAKE provides the enterprise web based access to data and information to enable the decision making process.</p> <p><i>FY 2011 Plans:</i> Two programs are included in the Insensitive Munitions (IM) funding line; Insensitive Munitions and Marine Ammunition Knowledge Enterprise (MAKE). The IM development will focus on improved packaging materials/ design, venting technology, development/ incorporation of a less sensitive propelling charge and all associated munitions qualification testing of the incorporated technologies. The MAKE effort develops an enterprise knowledge repository designed, evolved and updated to facilitate knowledge dominance. MAKE provides the enterprise web based access to data and information to enable the decision making process.</p> <p><i>FY 2012 Base Plans:</i></p>					
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Two programs are included in the Insensitive Munitions (IM) funding line; Insensitive Munitions and Marine Ammunition Knowledge Enterprise (MAKE). The IM development will focus on improved packaging materials/ design, venting technology, development/ incorporation of a less sensitive propelling charge and all associated munitions qualification testing of the incorporated technologies. The MAKE effort develops an enterprise knowledge repository designed, evolved and updated to facilitate knowledge dominance. MAKE provides the enterprise web based access to data and information to enable the decision making process.					
Accomplishments/Planned Programs Subtotals	19.255	20.559	27.219	-	27.219

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/BLI 473300: <i>Fire Support Mod</i>	1.886	7.158	2.549	0.000	2.549	1.649	1.299	2.419	1.504	0.000	56.215
• PMC/206400: <i>Expeditionary Fire Support Systems</i>	19.531	9.723	11.961	0.000	11.961	9.975	9.976	0.000	0.000	0.000	109.310
• PMC/BLI 4733001: <i>Common Laser Range Finder (CLRF)</i>	0.000	0.000	4.358	0.035	4.393	3.816	10.085	13.320	13.546	0.000	45.160
• PMC/BLI 4733002: <i>Modeled Meterological Information Manager (MMIM)</i>	0.686	1.458	1.921	0.000	1.921	1.432	0.454	0.443	0.453	Continuing	Continuing

D. Acquisition Strategy

These programs range from off-the-shelf modifications to developmental items. Development will typically be conducted through a government lab for example Naval Surface Warfare Center (NSWC) Dahlgren or CraneFire power enhancement used selected upgrades from Army developmental programs to create a system that more readily meets Marine Corps requirements. CLRF Refresh will be a developmental program utilizing a rolling down select, MMIM will consist almost entirely of component integration and testing followed by a Limited User Evaluation and fielding, and the GCFS effort will consist of development and testing all to take place at a government facility.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 3098: <i>Fire Support System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EFSS	Various	GDOTS:St. Petersburg, FL	19.339	3.851	May 2011	9.931	May 2012	-		9.931	0.000	33.121	
EFSS	Various	VARIOUS:Not Specified	2.880	0.631	Apr 2011	-		-		-	0.000	3.511	
Fire Support Mods	Various	VARIOUS:Not Specified	6.219	1.844	Jun 2011	1.518	Jun 2012	-		1.518	0.000	9.581	
CLRF	Various	NSWCDD:Dahlgren, VA	-	3.183	Jun 2011	11.610	Feb 2012	-		11.610	0.000	14.793	
MMIM	Various	SCC-LANT:Charleston, SC	1.387	0.300	Jun 2011	0.486	Feb 2012	-		0.486	0.000	2.173	
MMS	Various	NAVMAR:San Diego, CA	2.168	-		-		-		-	0.000	2.168	
Insensitive Munitions1	Various	GDOTS:Not Specified	0.650	1.170	Jun 2011	1.108	Jun 2012	-		1.108	0.000	2.928	
Insensitive Munitions2	Various	GDOTS:Not Specified	0.406	-		-		-		-	0.000	0.406	
Subtotal			33.049	10.979		24.653		-		24.653	0.000	68.681	

Remarks
FY10 \$2.7M Congressional (SAC-D) mark against BTID was incorrectly taken from the wrong PE (it was taken from PE 0206623M, Project Code C3098/EFSS vice PE 0206313M, Project Code C2273. The funds will be restored to the correct PE/Project Code but not until after submission of PB-11.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EFSS	Various	CTQ:Quantico, VA	3.563	-		-		-		-	0.000	3.563	
EFSS	WR	NSWCDD:Dahlgren, VA	2.964	0.600	Dec 2010	-		-		-	0.000	3.564	
Fam Artillery Munitions	WR	BAEST:Stafford, VA	1.387	0.312	Jun 2011	0.316	Jun 2012	-		0.316	0.000	2.015	
Fire Support Mods	Various	VARIOUS:Not Specified	4.910	-		-		-		-	0.000	4.910	
CLRF	Various	VARIOUS:Not Specified	-	0.588	Jun 2011	-		-		-	0.000	0.588	
Subtotal			12.824	1.500		0.316		-		0.316	0.000	14.640	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 3098: <i>Fire Support System</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EFSS	WR	NSWCDD:Dahlgren, VA	2.862	1.000	Mar 2011	2.000	Mar 2012	-		2.000	0.000	5.862	
EFSS	WR	MCPD:Fallbrook, CA	3.759	2.500	Mar 2011	0.250	Mar 2012	-		0.250	0.000	6.509	
MMS	WR	MCOTEA:MCTSSA	0.110	-		-		-		-	0.000	0.110	
MMIM	WR	MCOTEA:MCTSSA	0.090	0.680	Jun 2011	-		-		-	0.000	0.770	
CLRF	Various	VARIOUS:Not Specified	-	1.100	Jun 2011	-		-		-	0.000	1.100	
Subtotal			6.821	5.280		2.250		-		2.250	0.000	14.351	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EFSS	Various	GDOTS:St. Petersburg, FL	5.993	1.800	Dec 2010	-		-		-	0.000	7.793	
CLRF	Various	Not Specified:Not Specified	-	1.000	Jun 2011	-		-		-	0.000	1.000	
Subtotal			5.993	2.800		-		-		-	0.000	8.793	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		58.687	20.559	27.219	-	27.219	0.000	106.465

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy			DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>			PROJECT 3098: <i>Fire Support System</i>		

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3098																												
EFSS Full Operation Capability																												
MMIM MS B																												
MMIM System Integration & Test																												
MMIM LUE																												
MMIM MS C																												
MMIM IOC																												
MMIM MSG Phase Out																												
MMIM FOC (FY12)																												
CLRF MDD																												
CLRF MS A																												
CLRF PDR																												
CLRF MS B																												
CLRF System Intregration																												
CLRF System Demo																												
CLRF MS C																												
CLRF LRIP																												
CLRF IOT&E																												
CLRF FRPD																												
CLRF IOC																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 3098: <i>Fire Support System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3098				
EFSS Full Operation Capability	4	2012	4	2012
MMIM MS B	3	2010	3	2010
MMIM System Integration & Test	3	2010	3	2011
MMIM LUE	4	2011	4	2011
MMIM MS C	4	2011	4	2011
MMIM IOC	1	2012	1	2012
MMIM MSG Phase Out	1	2012	4	2012
MMIM FOC (FY12)	4	2012	4	2012
CLRF MDD	1	2011	1	2011
CLRF MS A	1	2011	1	2011
CLRF PDR	1	2012	1	2012
CLRF MS B	2	2012	2	2012
CLRF System Intregation	2	2012	4	2012
CLRF System Demo	4	2012	2	2013
CLRF MS C	2	2013	2	2013
CLRF LRIP	2	2013	4	2013
CLRF IOT&E	4	2013	4	2013
CLRF FRPD	4	2013	4	2016
CLRF IOC	2	2014	2	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>				PROJECT 4002: <i>Family of Raid Reconnaissance</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4002: <i>Family of Raid Reconnaissance</i>	3.562	3.391	0.801	-	0.801	0.421	0.430	0.439	0.448	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project supports multiple airborne/parachuting and specialized reconnaissance related programs focusing on immediate capability enhancements to numerous insertion and personnel equipment shortfalls currently existing in reconnaissance units throughout the operating forces. This includes improving airborne capability equipment and items for direct action missions that use specialized raid equipment.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Family of Raid/Reconnaissance Equipment (FRRE)	0.940	1.135	0.412	-	0.412
Articles:	0	0	0		0
FY 2010 Accomplishments: Upgraded high pressure Parachutist's High Altitude Oxygen System (PHAOS) and development of 3000 psi bottle and improvements to Parachutist's Individual Equipment Kit (PIEK).					
FY 2011 Plans: Integrate new materials into Multi-Mission Parachute System family of canopies for improved performance; evaluate next generation Automatic Activation Device (AAD) for parachuting safety; develop new Tandem Offset Resupply Delivery System (TORDS) canopy; integrate canopy safety release system; integrate signature reduction technologies to Full Spectrum Battle Equipment; update High Altitude High Opening Parachute Navigation System to provide position data on other parachutists; and evaluate life cycle replacement for the Military Tandem Tethered Bundle (MTTB) System.					
FY 2012 Base Plans: Planned technology upgrades and evaluation of reliability challenges presented by fielded systems.					
Title: Underwater Reconnaissance Capability (URC)	2.622	2.256	0.389	-	0.389
Articles:	0	0	0		0
FY 2010 Accomplishments: Procurement of prototypes for the Tactical Hydrographic Survey Equipment and support.					
FY 2011 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 4002: <i>Family of Raid Reconnaissance</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Observe mission profiles for the Tactical Hydrographic Survey Equipment; evaluate product improvements and reliability challenges presented by fielded systems, to include the Diver's Propulsion Device and Underwater Breathing Apparatus. FY 2012 Base Plans: Planned technology upgrades and evaluation of reliability challenges presented by fielded systems.					
Accomplishments/Planned Programs Subtotals	3.562	3.391	0.801	-	0.801

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/0206211M: <i>6518 AMPHIB SPT EQUIP</i>	23.750	11.718	5.533	0.000	5.533	10.895	7.327	7.231	5.324	0.000	71.778
• PMC/70000: <i>7000 URC</i>	0.254	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.254

D. Acquisition Strategy

(U) Family of Raid and Reconnaissance Equipment(FRRE) Acquisition strategy for Joint Precision Airdrop System (JPADS) Ultra Light Weight (ULW) includes market research survey to reveal commercially available systems with potential to meet requirements, followed by evaluation to further refine concept of operations and tailor performance specification requirements and avoid non-essential attributes. Full and open competition for production systems is planned. Base production contract with First Article Test will integrate Selective Availability Anti-Spoofing Module (SAASM) Global Positioning System (GPS) into the vendor's system, as well as optimize system for use with Marine Corps canopies. Options on contract will provide for procurement of production systems and supporting logistics elements upon successful completion of integration efforts. A planned Firm Fixed-Price Independent-Deliverables Independent-Quantities (IDIQ) contract will allow other DoD elements to procure systems using the Marine Corps contract vehicle if desired. In FY11/FY 12, the acquisition strategy is to fund engineering changes and product upgrade testing and development for Parachutist's High Altitude Oxygen System (PHAOS), Automatic Activation Device (AAD), High Altitude High Opening Parachute Navigation System (HAHOPNS), and Tandem Offset Resupply Delivery System (TORDS)/Military Tandem Tethered Bundle (MTTB) system.

(U) Underwater Reconnaissance Capability (URC): The acquisition strategy consists of market surveys to identify off-the-shelf/non-developmental item baseline competitions followed by release of desired capabilities/specifications and establishment of the trade space parameters. Project dependent, expect to down-select to best value. Follow-on testing/evaluations as required to be conducted. For technology upgrades to existing projects during FY11/12, engineering changes and product upgrade development and testing is planned.

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	4.461	-	-	-	-	-	-	-	-	0.000	4.461
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Marine Corps Cultural and Language Training Platform: This project prototypes a cultural and language training platform using broadband internet connectivity with collaborative applications and conducts a pilot study for its capability to meet MARFORRES language and culture training requirements. This effort will benefit Marines deploying out of CONUS. This platform may provide Marine Reservists required training while at home, reducing PERSTEMPO and associated TDY costs to attend an equivalent school at a remote location. The prototype language and cultural training capability will be based on the proven Special Operations Forces Teletraining System (SOFTS) platform. It will directly support our warfighters whose missions depend on the successful use of operational language and culture whenever deployed to a non-English speaking culture.

Expandable Rigid Wall Composite Shelter: The Marine Corps now uses 1970s technology rigid wall shelters. Funding is required to develop a new composite electromagnetic interference (EMI) capable expendable rigid wall shelter prototype that will provide a technologically superior structure. This superior structure provides energy efficiencies through a higher degree of insulation; increased roof and floor loads; and, enhanced blast, ballistic, and environmental protection. Additionally, composite shelters provide significant corrosion protection, and can be stacked six-high on ocean-going container ships. This highly mobile expendable EMI hardened shelter will provide the USMC with a lightweight, rugged, energy efficient, environmental sound and safer working environment for electronic maintenance and repair of critical communication, command and control, intelligence, and computer equipment in support of deployed operations and key mission requirements.

Remote Aiming and Sighting Optical Retrofit: Modifying a currently fielded PVS-14 optical sight to output a digital image which can be fused with the digital weapon sight image and display the resultant fused video. Reducing the power constraints on the system and minimize the battery pack to the size conducive to a helmet worn application. Developing high bandwidth wireless transfer of imagery via a personal area network. Developing a remote control which allows the operator to utilize the full functionality of the system without removing his hands from their natural shooting position. Advancing Image Intensified Tubes to a high resolution 2 micron pixel size (improvement over the current 6 micron pixel size). Modifying weapon mounted components to integrate with a powered rifle rail system.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Marine Corps Cultural and Language Training Platform	0.637	-
FY 2010 Accomplishments: Prototype a cultural and language training platform using broadband internet connectivity with collaborative applications and conduct a pilot study for its capability to meet MARFORRES language and culture training requirements.		
Congressional Add: Expandable Rigid Wall Composite Shelter	0.797	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 9999: <i>Congressional Adds</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2010	FY 2011
<i>FY 2010 Accomplishments:</i> Develop a new carbon fiber hybrid composite expendable shelter prototype that will provide technologically superior structure.		
<i>Congressional Add:</i> Remote Aiming and Sighting Optical Retrofit	3.027	-
<i>FY 2010 Accomplishments:</i> Modified a currently fielded PVS -14 to output a digital image which can be fused with the digital weapon sight image and display the resultant fused video. Reduced the power constraints on the system and minimize the battery pack to the size conducive to helmet worn application. Developed a high bandwidth wireless transfer of imagery via a personal area network. Developed a remote control which allows the operator to utilize the full functionality of the system without removing his hands from their natural shooting position. Advancing Image Intensified Tubes to a high resolution 2 micron pixel size (improvement over the current 6 micron pixel size). Modifying weapon mounted components to integrate with a powered rifle rail system.		
Congressional Adds Subtotals	4.461	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• 462000: <i>Expandable Rigid Wall Shelter</i>	3.653	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional Add

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 9C85: <i>Marine Personnel Carrier (MPC)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9C85: <i>Marine Personnel Carrier (MPC)</i>	3.087	26.811	34.910	-	34.910	66.953	127.028	115.253	130.030	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Marine Personnel Carrier (MPC) is part of a portfolio of capabilities that provide closure to real world operational gaps and shortfalls in the ability of the Marine Air Ground Task Force to conduct ground based maneuver tasks. The MPC, as the medium capability category platform, provides a bridge in capability between the New Amphibious Vehicle and Joint Light Tactical Vehicle and a balance between the performance, protection and payload attributes. The MPC family of vehicles includes the baseline armored personnel carrier and two supporting mission role variants: a command & control variant and a recovery & maintenance variant.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Marine Personnel Carrier (MPC)	3.087	26.811	34.910	-	34.910
Articles:	0	0	0		0
FY 2010 Accomplishments: MPC - Completed fabrication and began testing of the Marine Personnel Carrier Technology Demonstration vehicle.					
FY 2011 Plans: MPC - Complete testing of the Marine Personnel Carrier Technology Demonstration vehicle. Successfully pass Materiel Development Decision (MDD). Stand up System Integration Lab. Modeling and Simulation of ballistics and mobility. Initiate development of milestone documentation.					
FY 2012 Base Plans: MPC - Continue System Integration Lab. Complete development of milestone documentation. Prepare request for proposal. SSEB planning and initiation.					
Accomplishments/Planned Programs Subtotals	3.087	26.811	34.910	-	34.910

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDTEN/C10C191: <i>Marine Personnel Carrier (Cong Add)</i>	2.390	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.390

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 9C85: <i>Marine Personnel Carrier (MPC)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• RDTE/C1555G: <i>Marine Personnel Carrier (MPC)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.265
• PMC/203700: <i>Marine Personnel Carrier (MPC)</i>	0.000	0.000	0.000	0.000	0.000	0.000	20.000	143.284	145.720	Continuing	Continuing

D. Acquisition Strategy

The Marine Personnel Carrier (MPC) program will utilize Full and Open competition. The MPC is a family of vehicles consisting of a personnel carrier, a command and control platform and a maintenance and recovery vehicle. A source selection will be held to select up to two contractors. Each of these contractors will provide eight prototype personnel carrier vehicles that will be subjected to Government evaluation. The results of this evaluation will be used to support a Milestone decision. The results of the EMD efforts will be used to support a Milestone C decision as well as determine the Low Rate Initial Production manufacturer. The selected production source will also be tasked to perform EMD on the command and control and maintenance and recovery vehicles.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 9C85: <i>Marine Personnel Carrier (MPC)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Development	C/CPFF	TBD:TBD	0.373	5.404	Dec 2010	7.392	Nov 2011	-		7.392	Continuing	Continuing	Continuing
Subtotal			0.373	5.404		7.392		-		7.392			

Remarks
Modeling and Simulation of ballistics and mobility. Competitive Awards and other Government Agencies not yet determined.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	TACOM:Warren, MI	1.377	7.019	Oct 2010	12.813	Oct 2011	-		12.813	Continuing	Continuing	Continuing
Subtotal			1.377	7.019		12.813		-		12.813			

Remarks
PM costs to support Acquisition and Milestone Decisions, release of Requests for Proposals, plan and conduct source selection.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Devlp/Oper. T&E	Various	TBD:TBD	-	2.802	Mar 2011	2.706	Jun 2012	-		2.706	Continuing	Continuing	Continuing
Subtotal			-	2.802		2.706		-		2.706			

Remarks
Evaluation of Technology Demonstrator Test Bed Vehicle. Government Agencies not yet determined.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Eng. Services	Various	TBD:TBD	1.337	11.586	Dec 2010	11.999	Dec 2011	-		11.999	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 9C85: <i>Marine Personnel Carrier (MPC)</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			1.337	11.586		11.999		-		11.999				

Remarks
A Systems Integration Lab will be stood up in FY11 and continue in FY12. Competitive Awards and other Government Agencies not yet determined.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.087	26.811		34.910		-		34.910			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206623M: <i>MC Ground Cmbt Spt Arms Sys</i>	PROJECT 9C85: <i>Marine Personnel Carrier (MPC)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Marine Personnel Carrier (MPC)</i>				
MS-B	1	2013	1	2013
Development Tests	2	2014	1	2015
Operational Test	3	2015	3	2015
MS-C	4	2015	4	2015
Production Contract Award	4	2015	4	2015
Live Fire Test	2	2014	2	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	64.856	19.466	45.172	-	45.172	73.666	55.445	11.253	10.420	Continuing	Continuing
0201: <i>Logistical Veh Sys Replacement (LVSR)</i>	1.350	1.487	0.100	-	0.100	0.100	0.368	0.891	0.328	Continuing	Continuing
2316: <i>Combat Service Support Eng Equip</i>	51.719	10.135	9.210	-	9.210	8.157	4.369	4.538	4.609	Continuing	Continuing
2509: <i>Motor Transport Mod</i>	3.190	4.644	33.028	-	33.028	62.421	46.775	0.990	1.007	Continuing	Continuing
2929: <i>Testing Measuring Diag Equip & SE</i>	1.375	1.528	1.479	-	1.479	1.488	1.522	1.555	1.584	Continuing	Continuing
9999: <i>Congressional Addds</i>	3.505	-	-	-	-	-	-	-	-	0.000	3.505
9C90: <i>MTRV Mod</i>	3.717	1.672	1.355	-	1.355	1.500	2.411	3.279	2.892	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) provides funding for Marine Air-Ground Task Force requirements for Combat Service Support equipment improvement. It will enhance combat breaching capabilities of the ground combat elements, logistics, maintenance and transportation. The PE also provides improvements in all areas of Combat Service Support Equipment Vehicles by determining the replacement for the heavy, medium and light fleet vehicles. Alternative Power Sources for Communications Equipment (APSCE) is a suite of devices that provide the commander with the capability to use existing power to operate his communication equipment, computers and peripheral equipment instead of using batteries or fossil fuel generators. The Marine Corps Family of Automatic Test Systems (ATS), formerly TETS, provides automatic testing capability for use by technicians both in garrison and forward edge of Battlefield. This project includes improvements in all areas of the M1A1 main battle tank. The M1A1 tank provides armor protected firepower to the USMC ground combat element. Its advanced thermal sights provide superior target acquisition and target identification. High Performance Capabilities for Military Vehicles Project: This project is dedicated to applying the best practices of the motor sports industry to military vehicles including engineering expertise, equipment and technology. Marine Personnel Carrier Support System: Product Data Management and Technical Information Architecture Application development and integration to include requirements analysis, detailed system design, analysis of alternatives, implementation, and integration of a risk management tool.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	20.479	19.466	15.682	-	15.682
Current President's Budget	64.856	19.466	45.172	-	45.172
Total Adjustments	44.377	-	29.490	-	29.490
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	45.143	-			
• SBIR/STTR Transfer	-0.762	-			
• Program Adjustments	0.001	-	29.655	-	29.655
• Rate/Misc Adjustments	-	-	-0.165	-	-0.165
• Congressional General Reductions Adjustments	-0.005	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: *High Performance Capabilities for Military Vehicles Project*

Congressional Add: *Marine Personnel Carrier Support System*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	1.115	-
	2.390	-
Congressional Add Subtotals for Project: 9999	3.505	-
Congressional Add Totals for all Projects	3.505	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>				PROJECT 0201: <i>Logistical Veh Sys Replacement (LVSR)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0201: <i>Logistical Veh Sys Replacement (LVSR)</i>	1.350	1.487	0.100	-	0.100	0.100	0.368	0.891	0.328	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Logistical Vehicle System Replacement (LVSR) program will replace the current Logistical Vehicle System (LVS) fleet. This LVSR vehicle will increase mobility, maintainability, and reliability for the heavy fleet, while increasing off-road payload. Three (3) LVSR variants will replace the current five (5) LVS variants. The Cargo LVSR variant will be fielded prior to the LVSR Tractor and LVSR Wrecker that are options on the LVSR Cargo variant production contract. Initial Operation Test & Evaluation (IOT&E) for the LVSR Tractor and LVSR Wrecker variants is funded for 4th Quarter of FY10 through the 1st Quarter of FY11. FY12-FY16 funds the testing of Engineering Change Proposals for all variants.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: LVSR: Engineering/Program Management Articles:	0.200 0	-	-	-	-
FY 2010 Accomplishments: Logistics Vehicle System Replacement (LVSR) test planning, review and analysis support provided by US Army Materiel Systems Analysis Activity (AMSAA).					
Title: LVSR: Engineering Support Articles:	-	-	0.100 0	-	0.100 0
FY 2012 Base Plans: Development of Engineering Change Proposals (ECPs) for all variants (cargo, tractor and wrecker) of the Logistics Vehicle System Replacement (LVSR).					
Title: LVSR: Operational Test and Evaluation Articles:	1.150 0	1.487 0	-	-	-
FY 2010 Accomplishments: Preparation for and initiation of Initial Operational Test and Evaluation (IOT&E) for the Logistics Vehicle System Replacement (LVSR) Tractor and Wrecker variants.					
FY 2011 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 0201: <i>Logistical Veh Sys Replacement (LVSR)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Completion of Initial Operational Test and Evaluation (IOT&E) for the Logistics Vehicle System Replacement (LVSR) Tractor and Wrecker variants.					
Accomplishments/Planned Programs Subtotals	1.350	1.487	0.100	-	0.100

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC (BLI# 509300): <i>LVSR</i>	271.639	242.927	0.972	38.382	39.354	1.036	1.336	1.852	1.299	Continuing	Continuing
• PMC (BLI# 505000): <i>Motor Transport Modifications</i>	0.000	0.000	0.200	62.200	62.400	0.963	1.000	1.000	1.000	Continuing	Continuing
• PMC (BLI# 700000): <i>SPARES</i>	10.497	9.419	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The Logistics Vehicle System Replacement (LVSR) program consists of two separate phases. During the System Development and Demonstration (SD&D) phase, two contracts were awarded to procure prototypes for developmental testing. The SD&D phase winner was awarded a production contract to produce Low Rate Initial Production (LRIP) vehicles for operational testing. The LVSR Tractor and Wrecker variants have been designed and built, and are being tested under the LVSR Cargo production contract.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 0201: <i>Logistical Veh Sys Replacement (LVSR)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Variant Prototypes	Reqn	MCSC:Quantico, VA	16.793	-		-		-		-	0.000	16.793	
LVSR Source Selection	Reqn	MCSC:Quantico, VA	0.248	-		-		-		-	0.000	0.248	
FRC Prototypes	Reqn	DSR Systems, Inc.:St. Louis, MO	3.920	-		-		-		-	0.000	3.920	
FRC Prototypes	Reqn	TBD:Not Specified	0.637	-		-		-		-	0.000	0.637	
Subtotal			21.598	-		-		-		-	0.000	21.598	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Engineer & Tech Support	WR	NTSC:Orlando, FL	0.194	-		-		-		-	0.000	0.194	
LVSR Engineer Change Support	Reqn	MCSC:Quantico, VA	1.654	-		-		-		-	0.000	1.654	
LVSR Engineer Change Support	Reqn	Oshkosh Corp:Oshkosh, WI	-	0.787	Dec 2010	0.100	Mar 2012	-		0.100	1.696	2.583	
Subtotal			1.848	0.787		0.100		-		0.100	1.696	4.431	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Operational T&E	WR	MCOTEA:Quantico, VA	4.052	0.700	Dec 2010	-		-		-	0.000	4.752	
LVSR Operational T&E	Reqn	Oshkosh Corp:Oshkosh, WI	0.330	-		-		-		-	0.000	0.330	
LVSR Development Design & Test	Reqn	Oshkosh Corp:Oshkosh, WI	0.175	-		-		-		-	0.000	0.175	
LVSR Variant Test	MIPR	TACOM:Warren, MI	0.110	-		-		-		-	0.000	0.110	
LVSR Corrosion Test	WR	NSWC:Philadelphia, PA	0.217	-		-		-		-	0.000	0.217	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 0201: <i>Logistical Veh Sys Replacement (LVSR)</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Development Test	MIPR	Aberdeen Test Center:Aberdeen, MD	5.645	-		-		-		-	0.000	5.645	
LVSR Development Test	Reqn	Oshkosh Corp:Oshkosh, WI	1.622	-		-		-		-	0.000	1.622	
LVSR Development and Test	WR	NSWC:Indian Head, MD	0.024	-		-		-		-	0.000	0.024	
LVSR Live Fire	Reqn	SURVICE:Not Specified	0.410	-		-		-		-	0.000	0.410	
FRC Modeling and Simulation	Reqn	NSWC:Carderock, MD	0.355	-		-		-		-	0.000	0.355	
FRC Developmental T&E	Reqn	NATC:Carson City, NV	0.605	-		-		-		-	0.000	0.605	
Subtotal			13.545	0.700		-		-		-	0.000	14.245	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Contractor Support	Reqn	TBD:Not Specified	4.179	-		-		-		-	0.000	4.179	
LVSR Program Management Support	WR	MCSC:Quantico, VA	0.898	-		-		-		-	0.000	0.898	
FRC Contractor Support	Reqn	Sverdrup:Dumfries, VA	0.050	-		-		-		-	0.000	0.050	
FRC Program Management Support	WR	MCSC:Quantico, VA	0.050	-		-		-		-	0.000	0.050	
Subtotal			5.177	-		-		-		-	0.000	5.177	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		42.168	1.487	0.100	-	0.100	1.696	45.451

Remarks

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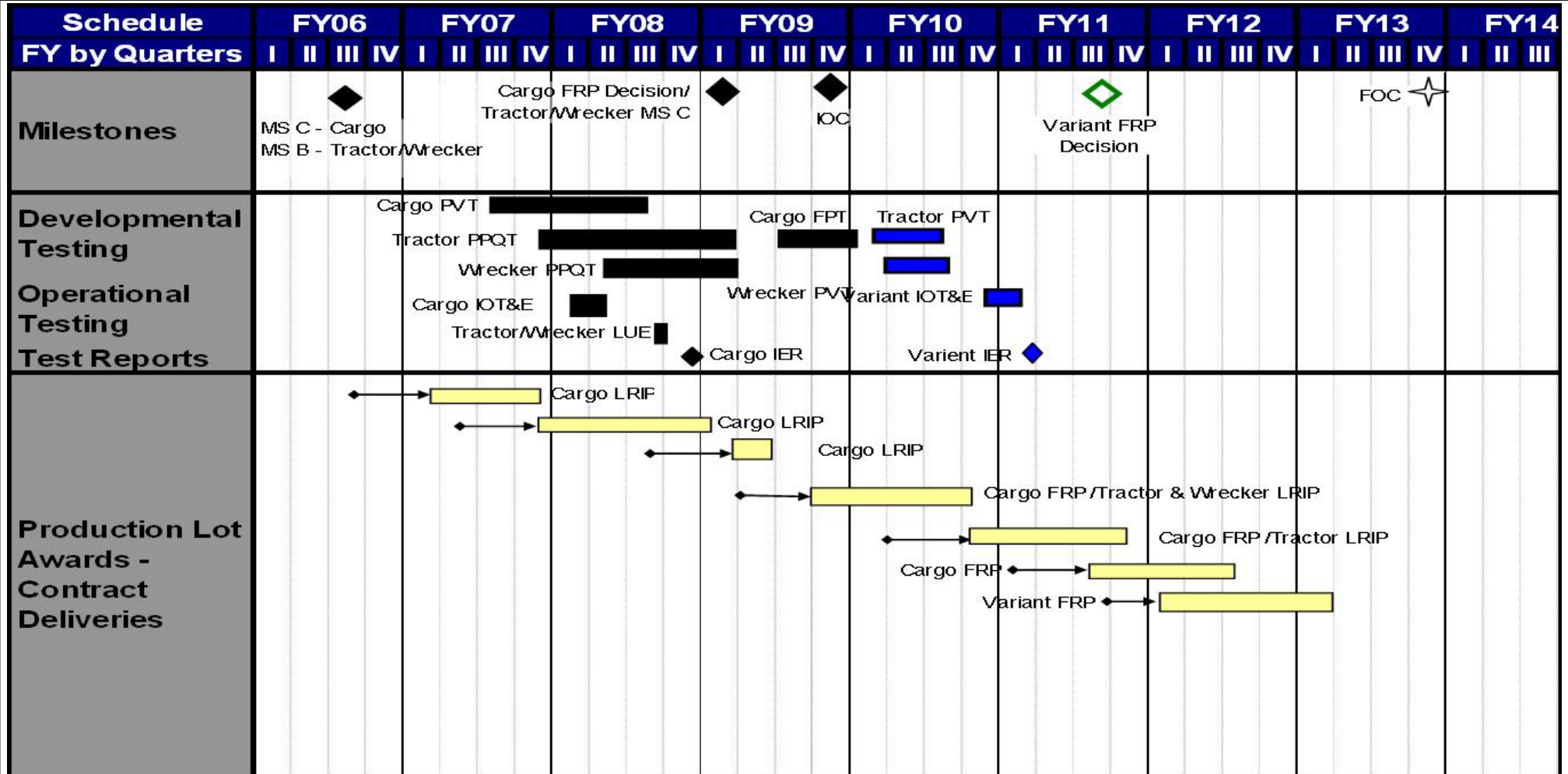
Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206624M: Marine Corps Cmbt Services
 Supt

PROJECT
 0201: Logistical Veh Sys Replacement (LVSR)



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 0201: <i>Logistical Veh Sys Replacement (LVSR)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0201				
LVSR Tractor and Wrecker Variant IOT&E	4	2010	1	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>				PROJECT 2316: <i>Combat Service Support Eng Equip</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2316: <i>Combat Service Support Eng Equip</i>	51.719	10.135	9.210	-	9.210	8.157	4.369	4.538	4.609	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The M1A1 Survivability/Lethality Program effort includes critical product improvements such as the application of additional armor, integration of counter-sniper fire technology, and improvement to existing secondary armament systems. These improvements directly address Marine Corps Lessons Learned, after action reports, and will ensure maximum survivability.

This project also includes improvements in all areas of the M1A1 main battle tank. The M1A1 tank provides armor protected firepower to the USMC ground combat element. Its advanced thermal sights provide superior target acquisition and target identification. Coupled with its 120mm cannon and suite of ammunition, it is the primary armor defeating weapon on the battlefield, that also provides lethal supporting fires to supported maneuver units. Continued funding is required to address obsolescence and support pre-planned product improvements.

Route Reconnaissance and Clearance (R2C). A spiral development project enhances the capabilities of the R2C systems, a family of systems fielded in support of Operation Iraqi Freedom (OIF) via the Urgent Needs Statement (UNS) process. This research and development effort will integrate future vehicles, robots, and associated equipment to provide standoff detection, marking, and neutralization of Explosive Hazards such as mines and Improvised Explosive Devices (IEDs). Enhancements for R2C will provide capabilities not found in the current inventory to defeat explosive hazards and will protect Marines and equipment while conducting route and area clearance operations. The integration of the next generation of armored security and support vehicles, Vehicle Mounted Mine Detectors (VMMDs), specialized robots, and a new suite of detection, marking, and neutralization systems will enable maneuver commanders to make timely and informed decisions in avoiding or neutralizing explosive hazards that impede their missions. Multiple detection and marking capabilities will detect a broader spectrum of explosive hazards and achieve higher overall effectiveness rates, while standoff and remote-controlled detection, marking, and neutralization capabilities will enhance force protection and system survivability. Operational speeds and rates will increase, which will better support the maneuver force operational tempo.

The Assault Breacher Vehicle (ABV) is a tracked combat engineer vehicle that provides deliberate and in-stride breaching capability of minefields and complex obstacles to the Ground Combat Element (GCE) of the Marine Air Ground Task Force (MAGTF). The ABV combines crew protection and vehicle survivability with the speed and mobility to keep pace with the maneuver force. The ABV is assigned to and employed by the Combat Engineer Battalion (CEB) as part of a synchronized operation to rapidly breach obstacles and create lanes for the MAGTF. FY2010 / FY2011 funding will be used to develop a Counter Improvised Explosive Device (CIED) capability, integrate an Insensitive Munition (IM) compliant line charge and integrate mine roller capability for the system. Standoff CIED capability from under armor will provide a significant increase in system flexibility and lethality while improving crew protection. An IM compliant line charge will permit safe loading of the charge while on the transport vessel well deck, enabling the ABV to begin performing its mission immediately upon touching the beach. Thus, the crew will not be forced to load the line charge on the shore, possibly under fire. Integration of a mine roller will increase the ABVs "proofing" (verifies no mines in the lane) capability, thus increasing mine clearing performance.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>
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The Engineer Modification Kit line funds modifications and initiatives which are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, product quality deficiencies and other issues that affect vehicle reliability, availability and readiness. This proactive and focused approach ensures proper vehicle sustainment and life cycle management in response to evolving needs of the Marine Corps fleet. Operational needs to provide personnel survivability on engineer equipment is essential to current and future operations. Research and development funding develops and integrates new lighter, compact armor technology and supports ballistic testing for applications to existing and future acquisitions.

Corrosion Prevention and Control (CPAC): The useful life of Marine Corps assets will be extended through a comprehensive CPAC RDT&E program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition.

The Mine Resistant Ambush Protected (MRAP) Family of Vehicles (FoV) provides Warfighters multi-mission platforms capable of mitigating Improvised Explosive Devices (IEDs), underbody mines, and small arms fire threats, which are currently the greatest casualty producers in Overseas Contingency Operations (OCO). Four vehicle categories (CATs) are being tested, procured, fielded and sustained: Category I - Urban combat operations, ambulance. Category II - Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III - Mine/IED clearance ops, explosive ordnance disposal. MRAP All Terrain Vehicle - Combat operations (ops) in rural, mountainous, urban terrain.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Engineering Mod Kits</p> <p align="right">Articles:</p> <p>FY 2012 Base Plans: Solve highest priority issues determined during the testing and integration of modifications for the Engineer Family of Systems.</p>	-	-	0.495 0	-	0.495 0
<p>Title: M1A1 Survivability/Lethality Program</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: The M1A1 Survivability/Lethality Program effort includeD critical product improvements such as, but not limited to, the application of additional armor, integration of counter-sniper fire technology, and improvement to existing secondary armanment systems. These improvements directly address Marine Corps Lessons Learned, after action reports, and will ensure maximum survivability.</p> <p>FY 2011 Plans: The M1A1 Survivability/Lethality Program effort includes critical product improvements such as, but not limited to, the application of additional armor, integration of counter-sniper fire technology, and improvement to existing</p>	0.449 0	1.967 0	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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secondary armanment systems. These improvements directly address Marine Corps Lessons Learned, after action reports, and will ensure maximum survivability.

Title: M1A1 Modifications	1.200	1.453	1.794	-	1.794
Articles:	0	0	0		0

FY 2010 Accomplishments:

Developed and tested a new forward observer/forward air controller suite for the Abrams main battle tank. Developed and tested a new commander's detachable spotlight. Developed a new armored junction box for the tank infantry phone kit. Validated the safety of the DM-11 120mm round. Developed ECPs for 15 tank modifications. All of these items improve the battlefield capability of the Abrams main battle tank and ensure its relevancy and mitigate obsolescence.

FY 2011 Plans:

This project includes improvements in all areas of the M1A1 main battle tank. The M1A1 tank provides armor protected firepower to the USMC ground combat element. Its advanced thermal sights provide superior target acquisition and target identification. Coupled with its 120mm cannon and suite of ammunition, it is the primary armor defeating weapon on the battlefield, that also provides lethal supporting fires to supported maneuver units. Continued funding addresses obsolescence and support of pre-planned product improvements. Modifications include safety, reliability, corrosion control, and technology up-grades to meet Marine Corps requirements.

FY 2012 Base Plans:

This project includes improvements in all areas of the M1A1 main battle tank. The M1A1 tank provides armor protected firepower to the USMC ground combat element. Its advanced thermal sights provide superior target acquisition and target identification. Coupled with its 120mm cannon and suite of ammunition, it is the primary armor defeating weapon on the battlefield, that also provides lethal supporting fires to supported maneuver units. Funding addresss obsolescence and support pre-planned product improvements. Modifications include safety, reliability, corrosion control, and technology up-grades to meet Marine Corps requirements.

Title: Route Reconnaissance and Clearance (R2C):	4.635	-	1.439	-	1.439
Articles:	0		0		0

FY 2010 Accomplishments:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Integrated future Route Reconnaissance and Clearance (R2C) vehicles with enhanced mobility and survivability, a suite of improved detection and marking capabilities, and robots with greater detection, marking, and neutralization capabilities.</p> <p>FY 2012 Base Plans: Integrates Automated Route Reconnaissance kits, vehicle optical sensor systems, and interrogation arm on CAT I and CAT II MRAPs. Provides Field User Evaluation for increment II which includes the shipment of CAT I, CAT II, and CAT III MRAPs, front end equipment, billeting, range costs, and data recorders.</p>					
<p>Title: R2C: Program management and engineering support</p> <p align="right">Articles:</p> <p>FY 2011 Plans: Program management and engineering support.</p> <p>FY 2012 Base Plans: Program management and engineering support for the entire R2C program.</p>	-	0.987 0	0.950 0	-	0.950 0
<p>Title: R2C: Conduct Developmental Testing</p> <p align="right">Articles:</p> <p>FY 2011 Plans: Increment I assets such as Light Weight Route Clearance blade and various sizes of the Mine roller systems are being integration Tested.</p> <p>FY 2012 Base Plans: Increment I and III assets and items are undergoing Developmental Testing, items include the Lightweight Integration Arm, Gyrocams and New Automated Route Recon Kits.</p>	-	1.914 0	2.155 0	-	2.155 0
<p>Title: Assault Breacher Vehicle (ABV)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Three(3) identified system improvements/upgrades: Improve Counter Improvised Explosive Device (CIED) capability, integrate Insensitive Munitions (IM) compliant line charge, and integrate a vehicle width mine roller.</p> <p>FY 2011 Plans:</p>	1.441 0	1.533 0	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>		PROJECT 2316: <i>Combat Service Support Eng Equip</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Three(3) identified system improvements/upgrades: Improve Counter Improvised Explosive Device (CIED) capability, integrate Insensitive Munitions (IM) compliant line charge, and integrate a vehicle width mine roller.					
Title: Corrosion Prevention and Control (CPAC)	2.046	2.281	2.377	-	2.377
Articles:	0	0	0		0
FY 2010 Accomplishments: Naval Surface Warfare Centers (NSWC) and Naval Research Laboratories (NRL) developed the CPAC Corrosion Products and Materials Processes (CPMP)which establish performance requirements and analysis of corrosion products introduced into the CPAC Program. These include the corrosion requirements for non-chrome hydraulic cylinders, development of metrics for a common Statement of Work for equipment life-cycle rework, development of metrics for corrosion service team vehicle service cycle times, and corrosion performance requirements for Chemical Agent Resistant Coating (CARC). CPAC analyzed bio-based CPCs for corrosion control and bedliner material for enhanced corrosion resistance in high wear areas on tactical vehicles. CPAC implemented zinc-rich coatings for enhanced corrosion performance, and dry film lubricants tasking. Naval Surface Warfare Center- Carderock Division (NSWCCD) and NRL have proven expertise in corrosion control with proven successes. These labs are testing various corrosion prevention capabilities for implementation in Technical Manual TM-4795-12.					
FY 2011 Plans: Based on the success of testing, the CPAC continues to use Government labs for the Corrosion Products and Materials Processes (CPMP), expansion of CARC specification requirements to include the usage of high-build coatings, implementation of the use of aerosol CARC touch-up coatings, corrosion requirements for conformal coatings to reduce corrosion on electronics systems, and any other emerging research issues.					
FY 2012 Base Plans: Based on the success of testing, the focus of the program's efforts will continue to utilize , NSWC and NRL to accomplish all developments.					
Title: MRAP FoV Engineering Upgrade Solutions	22.958	-	-	-	-
Articles:	0				
Description: The Mine Resistant Ambush Protected (MRAP) Family of Vehicles (FoV) provide Warfighters multimission platforms capable of mitigating Improvised Explosive Devices (IEDs), underbody mines, and small arms fire threats, which are currently the greatest casualty producers in Overseas Contingency Operations					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>(OCO). Four vehicle categories (CATs) are being procured, fielded and sustained: Category I - Urban combat operations, ambulance. Category II- Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III- Mine/IED clearance ops, explosive ordnance disposal. Category IV - MRAP All Terrain Vehicle - Combat operations (ops) in rural, mountainous, urban terrain.</p> <p>FY 2010 Accomplishments: Conducted ballistic testing of Engineering Upgrade Solutions to fielded vehicles. Provided survivability upgrades to the warfighter, focusing on: seat upgrades and seat improvements for the MRAP FoV, underbody blast mitigation, modeling and simulation, data collection boxes, and Rocket Propelled Grenade (RPG) Defeat. Suspension mobility solutions included Independent Suspension and soft soil solutions.</p>					
<p>Title: MRAP MATV Ballistic Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: The Mine Resistant Ambush Protected (MRAP) Family of Vehicles (FoV) provides Warfighters multimission platforms capable of mitigating Improvised Explosive Devices (IEDs), underbody mines, and small arms fire threats, which are currently the greatest casualty producers in Overseas Contingency Operations (OCO). Four vehicle categories (CATs) are being procured, fielded and sustained: Category I - Urban combat operations, ambulance. Category II- Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III- Mine/IED clearance ops, explosive ordnance disposal. Category IV - MRAP All Terrain Vehicle - Combat operations (ops) in rural, mountainous, urban terrain.</p> <p>FY 2010 Accomplishments: The MATV Test and Evaluation funds ballistic tests for the MATV variant, which supported the research and development effort of survivability, underbody improvement kit testing, mobility analysis and Battle Damage Assessment Report (BDAR)support.</p>	8.000 0	-	-	-	-
<p>Title: MRAP 1 Ballistic Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: The MRAP Family of Vehicles (FoV) provides Warfighters multimission platforms capable of mitigating Improvised Explosive Devices (IEDs), underbody mines, and small arms fire threats, which are currently the greatest casualty producers in Overseas Contingency Operations (OCO). Four vehicle categories (CATs) are being procured, fielded and sustained: Category I - Urban combat operations, ambulance. Category</p>	10.990 0	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
II- Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III- Mine/IED clearance ops, explosive ordnance disposal. Category IV - MRAP All Terrain Vehicle - Combat operations (ops) in rural, mountainous, urban terrain. <i>FY 2010 Accomplishments:</i> Funds supported ballistic testing on the MRAP FoV, modeling and simulation analysis, mobility analysis and ballistic Field Service Representative support.					
Accomplishments/Planned Programs Subtotals	51.719	10.135	9.210	-	9.210

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/6520-1: <i>EOD Systems- R2C</i>	74.804	49.569	43.136	35.557	78.693	44.203	48.856	55.866	66.946	Continuing	Continuing
• PMC/6520-2: <i>EOD Systems- ABV</i>	53.691	21.195	0.000	8.100	8.100	0.000	0.000	0.000	0.000	Continuing	Continuing
• PMC/667000: <i>CPAC</i>	8.495	0.485	0.485	0.000	0.485	0.484	0.579	0.577	0.587	Continuing	Continuing

D. Acquisition Strategy

(U) The M1A1 Survivability/Lethality: Program will utilize Army initiatives and programs (such as Belly Armor and Universal Headrest) as much as possible. However, it will also require modifications to some Army efforts (such as the Mine Resistant Seat and Rear View Sensor System). Lastly, it involves unilateral USMC efforts to research, develop, and evaluate programs to improve the survivability and lethality of the USMC tank. These efforts include the Improved Loader's Weapon Station, Laser Rangefinder/Designator, Laser Warning System, Tank Commander's Forward Unity Periscope upgrade, and Counter Sniper Protection Systems. When possible, these programs will use existing Army contracts and internal contracting activities when required.

(U) The M1A1 Modification: Program leverages Army developmental programs to create a system that more readily meets Marine Corps requirements. Modification includes safety, reliability, corrosion control, and technology up-grades to meet Marine Corps requirements. M1A1 Mods will exercise options on existing contracts of varying types to conduct research and analysis associated with the development of modifications and corrosion prevention to the M1A1 Tank and supporting platforms.

(U) Route Reconnaissance and Clearance (R2C): Starting in FY10, procure a fleet of standardized Route Reconnaissance and Clearance systems based upon the successful route clearance teams operating in Iraq; use Capabilities Production Documents for current systems and leverage contracts already in place. Concurrently support a research and development effort to integrate future vehicles with enhanced mobility and survivability, a suite of improved detection and marking capabilities, and robots with greater detection, marking, and neutralization capabilities.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	2316: <i>Combat Service Support Eng Equip</i>

(U) Engineering Mod Kits: This is a roll-up line of various engineering efforts, modifications and other related items less than \$5 Million each. This program provides for significant improvements to a various pieces of engineering equipment by enhancing their capabilities and improving readiness.

(U) Corrosion Prevention and Control (CPAC) Program The Program will execute the RDT&E Program through direct allocation of funding to the Naval Surface Warfare Center - Carderock Division Corrosion Research and Engineering Branch for comprehensive program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
M1A1 MODIFICATIONS	C/CPFF	TACOM:TACOM	1.411	0.892	Jan 2011	0.586	Jan 2012	-		0.586	0.000	2.889	
M1A1 MODIFICATIONS	C/FFP	ABERDEEN PRV:APG, MD	1.170	0.561	Dec 2010	0.400	Dec 2011	-		0.400	0.000	2.131	
M1A1 MODIFICATIONS	C/FFP	FORT BELVOIR:FORT BELVOIR, VA	0.200	-		0.158	Jan 2012	-		0.158	0.000	0.358	
M1A1 MODIFICATIONS	SS/FFP	BENET LABS:WATERVELIET, NY	0.250	-		0.250	Jan 2012	-		0.250	0.000	0.500	
M1A1 MODIFICATIONS	C/FFP	PICATINNY ARSENAL:PICATINNY, NJ	0.414	-		0.400	Jan 2012	-		0.400	0.000	0.814	
M1A1 SLES	C/CPFF	NCSC:MCB QUANTICO, VA	0.473	1.967	Dec 2010	-		-		-	0.000	2.440	
JAB Development	C/FFP	MCSC:Quantico, VA	2.225	-	Dec 2010	-		-		-	0.000	2.225	
ABV CIED Dev and Integration	WR	NSWC:Panama City, FL	0.912	1.533	Nov 2010	-		-		-	0.000	2.445	
R2C Sys Articles & Integration	WR	NSWC:Panama City, FL	4.660	-		1.439	Dec 2011	-		1.439	0.000	6.099	
Subtotal			11.715	4.953		3.233		-		3.233	0.000	19.901	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support-R2C	C/FP	EG&G:Stafford, VA	-	0.987	Dec 2010	0.950	Nov 2011	-		0.950	0.000	1.937	
Subtotal			-	0.987		0.950		-		0.950	0.000	1.937	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Proj 2316																																
Spiral 1 Integration and Developmental Test	█	█	█	█																												
R2C Increment I Production									█	█	█	█																				
R2C Increment II Integration													█	█	█	█																
R2C Increment II Production																	█	█	█	█												
R2C Increment III Integration																																
R2C Increment III IOT&E																									█	█	█	█				
Increment III Production																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2316: <i>Combat Service Support Eng Equip</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2316				
Spiral 1 Integration and Developmental Test	1	2010	4	2010
R2C Increment I Production	1	2012	2	2012
R2C Increment II Integration	2	2012	4	2012
R2C Increment II Production	2	2013	4	2013
R2C Increment III Integration	2	2013	4	2013
R2C Increment III IOT&E	3	2015	4	2015
Increment III Production	2	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2509: <i>Motor Transport Mod</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2509: <i>Motor Transport Mod</i>	3.190	4.644	33.028	-	33.028	62.421	46.775	0.990	1.007	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Marine Corps Tactical Transportation Program manages procurement and life cycle sustainment for more than 40,000 principle end items divided among four fleets: Light Fleet, Medium Fleet, Heavy Fleet, and Special Fleet. A sustained effort is maintained in the Marine Corps for development and testing in support of fleet Service Life Extension Program (SLEP) initiatives, vehicle quality deficiency resolutions, safety initiatives, environmental/state transportation mandated vehicle changes, and system component refresh modifications efforts. Given transportation asset operational availability declines at a steady rate over time, SLEP, Fleet overhauls, and enhanced depot level modifications are essential in maintaining a viable transportation capability in the Marine Corps Operating Forces.

The HMMWV survivability improvement initiative (HSII) will be an improvement to the current armored HMMWV ECV which provides an inadequate amount of underbelly protection against current and anticipated future threat levels. Additionally, HSII intends to return lost payload and automotive performance prior to up-arming light tactical vehicles. Funding will provide development activity by various vendors addressing survivability and automotive performance improvements. Improved Recovery Vehicle (IRV) project includes improvements in all areas of the M88A2 Improved Recovery Vehicle. Continued funding is required to address obsolescence and support pre-planned product improvements. Additionally, funding will provide development by the original equipment manufacturer (OEM) to address lessons learned and develop safety related engineering change proposals (ECPS) to correct hazards noted during the standard day to day operation of the M88A2 Improved Recovery Vehicle.

P-19 Replacement will replace the aging A/S32P-19A Crash Fire Rescue fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle will be outfitted with advanced fire suppression equipment and provide rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19 Replacement may also be employed to fight structure fires in support of base camps and as firefighting support to other elements of the MAGTF, such as ammunition supply points, Petroleum, Oil, and Lubricants (POL) distribution points, or hazardous material storage facilities.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Improved Recovery Vehicle (IRV)	0.497	0.451	0.120	-	0.120
Articles:	0	0	0		0
FY 2010 Accomplishments: Continued joint participation with US Army on evaluation of prospective modifications, and began development of an On board air compressor, a Organizational/Operational Plan (O&O) KPP.					
FY 2011 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2509: <i>Motor Transport Mod</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue joint participation with US Army on evaluation of prospective modifications, and continue testing of the onboard air compressor. FY 2012 Base Plans: Continue joint participation with US Army on evaluation of prospective modifications, and begin research and development of On Board Air Compressor ancillary tools and equipment.					
Title: High Mobility Multi-Wheeled Vehicle ECV (HMMWV-ECV) Articles:	0.309 0	0.324 0	30.000 0	-	30.000 0
FY 2010 Accomplishments: Accomplished Joint RPG net testing in ongoing efforts and we progress with DARPA. FY 2011 Plans: We plan to perform efforts that will support our need to Develop and Test advanced Armoring Materials for the HMMWV. FY 2012 Base Plans: We will award a contract to support HSII Prototype Design/Development and prototype testing to include LFT&E, RAM-D, Fire Suppression, Corrosion, and Performance.					
Title: FRC: Flatrack Articles:	1.284 0	3.261 0	-	-	-
FY 2010 Accomplishments: FRC Prototype Design/Development. Prototypes are planned to be delivered during the 1st quarter of FY11. FY 2011 Plans: Prototype testing is planned to begin during 2nd quarter FY11.					
Title: P-19 Replacement Articles:	-	-	2.286 0	-	2.286 0
Description: The Aircraft Rescue & Fire Fighting (ARFF) vehicle will be equipped with fire suppression compounds and extinguishing agents, handheld extinguishers, and specialized rescue tools used by firefighters extinguishing aircraft or structural fires, providing protection for rescue personnel, cooling explosive ordnance, extricating wounded aircrew members, dispatching emergency response capabilities to crash and structural					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2509: <i>Motor Transport Mod</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
alarms, supporting mutual aid agreements with local, state, and federal agencies, all ultimately leading to the successful execution of the mission.					
FY 2012 Base Plans: We will issue a Request for Proposal and award a contract to support P-19 Prototype Design/Development.					
Title: Motor Transport Modification (MTM): Test	1.100	0.608	0.622	-	0.622
Articles:	0	0	0		0
FY 2010 Accomplishments: We are performing work that support the Testing, integration, and evaluation of Transportation Systems modifications.					
FY 2011 Plans: We plan to Continue testing, integration, and evaluation of Transportation Systems modifications identified for potential application on our Motor Transportation assets.					
FY 2012 Base Plans: Funds will be used to Continue the testing, integration, and evaluation of Transportation Systems modifications identified for potential application on our Motor Transportation assets.					
Accomplishments/Planned Programs Subtotals	3.190	4.644	33.028	-	33.028

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 523000: <i>Motor T Mod</i>	2.756	2.803	1.804	0.000	1.804	2.803	2.885	2.966	3.018	Continuing	Continuing
• 504500: <i>HMMWV</i>	36.523	17.843	0.000	0.000	0.000	38.226	42.431	0.000	0.000	Continuing	Continuing
• 509700: <i>FOTT</i>	34.538	41.286	21.848	24.826	46.674	39.517	125.440	109.146	104.978	Continuing	Continuing
• 206100: <i>IRV</i>	59.191	17.313	4.164	0.000	4.164	4.325	4.092	3.848	3.913	Continuing	Continuing

D. Acquisition Strategy
The Motor Transport Modification (MTM) program is a sustained program line for "level of effort" programs. Funding will focus on streamlined acquisitions of Commercial-Off-The-Shelf Non-Developmental Items (COTS/NDI) that can be identified, integrated, and tested in a short amount of time. Successful modifications and tests are intended for follow-on procurement and incorporation into existing system component upgrades, SLEPS, or rapid COTS/NDI fielding for the Fleet Marine Forces (FMF).

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2509: <i>Motor Transport Mod</i>

HSII will pursue a multi-faceted approach in which the first facet will be to modernize the current unarmored HMMWV A2s and ECVs. The second approach will be an increase in survivability of the current ECV through various armor developments/technologies. The third level will consist of a fully recapitalized vehicle receiving performance and survivability upgrades. Expect a high degree of development and testing in FY12/13 with anticipated production consideration of all levels to begin by second quarter FY14.

The Flatrack Refueling Capability (FRC) program original acquisition strategy consisted of a joint procurement contract with the US Army. FY07 RDTE funds were used to procure two prototypes developed by DSR Systems Inc. After development and initial testing the Army decided not to procure the DSR system. Our revised acquisition strategy will only include US Marine Corps requirements. Further analysis has resulted in the new acquisition strategy focused on contract for Commercially available Items via a Small Business Set Aside procurement. These funds will procure one prototype for Developmental Testing and Field Users Evaluation (FUE). After successfully testing, the Marine Corps will procure the approved acquisition objective (AAO) quantity.

The Improved Recovery Vehicle (IRV) program also leverages Army developmental programs to create a system that more readily meets Marine Corps heavy recovery vehicle requirements. Improvements include safety, reliability, and technology upgrades.

P-19 Replacement will replace the aging A/S32P-19A fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle will be outfitted with advanced fire suppression equipment and provide rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19 Replacement may also be employed to fight structure fires in support of base camps and as firefighting support to other elements of the MAGTF, such as ammunition supply points, Petroleum, Oil, and Lubricants (POL) distribution points, or hazardous material storage facilities.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services</i> <i>Supt</i>	PROJECT 2509: <i>Motor Transport Mod</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMMWV Sys Dev & Demonstration	C/FFP	TBD:TBD	-	-		15.000	Feb 2012	-		15.000	0.000	15.000	
HMMWV Technology Development	C/FFP	TBD:TBD	-	-		8.000	Nov 2011	-		8.000	0.000	8.000	
IMPROVED RECOVERY VEH	C/CPFF	TACOM:WARREN, MI	0.515	0.451	Dec 2010	0.120	Dec 2011	-		0.120	0.000	1.086	
MT Armor Testing	MIPR	APG:MD	2.245	0.506	Nov 2010	0.622	Dec 2011	-		0.622	Continuing	Continuing	Continuing
HMMWV Test	MIPR	NATC:NV	1.588	0.324	Dec 2010	6.000	Jul 2012	-		6.000	Continuing	Continuing	Continuing
FRC Developmental Testing	C/FFP	Heil CO:Athens, TN	-	3.261	Dec 2010	-		-		-	0.000	3.261	
P-19 Replacement	MIPR	TBD:TBD	-	-		2.182	Dec 2011	-		2.182	Continuing	Continuing	Continuing
Subtotal			4.348	4.542		31.924		-		31.924			

Remarks
 Source selection for the P-19 Replacement development effort is scheduled for fourth quarter FY11. Performing activity/location will be unknown until source selection is complete.
 FY 11 HMMWV and MT and FY 12 MT Tests To Be Determine (TBD) efforts and cost are determined each year in accordance with the current readiness reports.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMMWV Program Management and travel	C/FFP	MCSC:VA	-	-		1.000	Dec 2011	-		1.000	0.000	1.000	
P-19 Program Management and travel	C/FFP	MCSC:VA	0.202	0.102	Dec 2010	0.104	Dec 2011	-		0.104	0.000	0.408	
Subtotal			0.202	0.102		1.104		-		1.104	0.000	1.408	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		4.550	4.644		33.028	-		33.028			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2509: <i>Motor Transport Mod</i>

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 2509																												
P-19 Replacement Engineering Manufacturing & Dev																												
Milestone B																												
Contract Award																												
PDR																												
Official Design Review/DRR																												
System Verification Review																												
Production Readiness Review																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2509: <i>Motor Transport Mod</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 2509</i>				
P-19 Replacement Engineering Manufacturing & Dev	2	2012	4	2014
Milestone B	1	2012	1	2012
Contract Award	1	2012	1	2012
PDR	3	2012	3	2012
Official Design Review/DRR	4	2013	4	2013
System Verification Review	4	2014	4	2014
Production Readiness Review	4	2014	4	2014

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2929: <i>Testing Measuring Diag Equip & SE</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2929: <i>Testing Measuring Diag Equip & SE</i>	1.375	1.528	1.479	-	1.479	1.488	1.522	1.555	1.584	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Marine Corps Family of Automatic Test Systems (ATS) formerly called Third Echelon Test Sets (TETS), provides automatic test program capability for use by technicians both in garrison and the forward edge of the battlefield; specifically in the areas of interactive electronic technical manuals, condition/predictive based maintenance, and embedded sensors and prognostics.

The Marine Corps Automatic Test Equipment (MCATE) program provides development of sustainment technology for automatic test equipment used in organizational/intermediate maintenance facilities.

The Autonomic Logistics (AL) program provides weapon system sensor data collection and processing for information conversion to provide situational awareness.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Marine Corps Automated Test Equipment	1.139	1.282	1.228	-	1.228
Articles:	0	0	0		0
Description: Overall thrust of this program is to develop advanced technology concepts for automatic test and integrate these subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. The focus is on demonstrating the military utility of technologies and applying them to our ATS acquisition programs. A primary secondary thrust is to prevent obsolescence in our current automatic test systems by identifying new technologies that can be implemented immediately.					
FY 2010 Accomplishments: Performed analysis and research on the requirements for a new full capability automatic test system as well as a downsized, specified capability Electro-Optical (EO) tester. Began initiatives planned for research of new testing techniques, laser safety and system automatic test.					
FY 2011 Plans: Plan future research and development on a test program set translator and develop an ubiquitous device to control USMC automatic test. Continue initiatives planned for research of new testing techniques.					
FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 2929: <i>Testing Measuring Diag Equip & SE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Plan future analysis and research on the requirements of solutions for improved digital I/O and common interfaces. Continue initiatives for research or new testing techniques.					
Title: Autonomic Logistics	0.236	0.246	0.251	-	0.251
Articles:	0	0	0		0
FY 2010 Accomplishments: Initiated an economic analysis to address a Marine Corps Analysis of Alternatives (AoA) to support pre-milestone A activities for Autonomic Logistics Service Program (AL).					
FY 2011 Plans: Complete the economic analysis. Review economic analysis recommendations and conduct gap analysis to support the Autonomic Logistics Service Program (AL).					
FY 2012 Base Plans: Focus on various studies supporting pre-milestone A activities in support of Autonomic Logistics Services (AL) in anticipation of a milestone A decision in FY14.					
Accomplishments/Planned Programs Subtotals	1.375	1.528	1.479	-	1.479

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/41811: <i>Calibration</i>	9.841	9.918	2.176	0.000	2.176	2.228	2.288	2.350	2.390	0.000	57.838
• PMC/41812: <i>TETS</i>	1.297	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	119.172
• PMC/41813: <i>Autonomic Logistics</i>	4.552	1.019	1.093	0.000	1.093	3.270	3.409	3.548	3.608	0.000	134.199

D. Acquisition Strategy
Automatic Test Systems (ATS) and Marine Corps Automatic Test Equipment (MCATE) program's work is being done through Marine Corps Systems Command (MCSC) contracts and in-house at Marine Corps Logistics Base (MCLB), Albany, GA, and Naval Air Systems Command (NAVAIR), Lakehurst, NJ.

Autonomic Logistics (AL) is Competitive through Marine Corps Systems Command contracts and funding will focus on pre-milestone A activities in support of AL . All other work is being done in-house and at government engineering facilities.

E. Performance Metrics
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services</i> <i>Supt</i>	PROJECT 2929: <i>Testing Measuring Diag Equip & SE</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Study & Hardware (MCATE) 2	C/FFP	MCSC:Quantico, VA	-	0.425	Dec 2010	-		-		-	0.000	0.425	
Study & Hardware (MCATE) 4	C/FFP	MCSC:Quantico, VA	-	-		0.505	Mar 2012	-		0.505	0.000	0.505	
Study & Hardware (MCATE) 5	C/FFP	MCSC:Quantico, VA	-	-		0.409	Jan 2012	-		0.409	0.000	0.409	
Subtotal			-	0.425		0.914		-		0.914	0.000	1.339	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support (ALS)	C/FFP	MCSC:Quantico, VA	3.591	0.246	Feb 2011	0.251	Nov 2011	-		0.251	0.000	4.088	
Engineering Support (MCATE)	WR	MCLB:Albany, GA	2.033	0.857	Nov 2010	0.314	Nov 2011	-		0.314	0.000	3.204	
Subtotal			5.624	1.103		0.565		-		0.565	0.000	7.292	

Remarks
ALS FY11 & FY12 funds will focus on pre-milestone A activities for the Autonomic Logistics Service (ALS) Program.

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		5.624	1.528	1.479	-	1.479	0.000	8.631

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	3.505	-	-	-	-	-	-	-	-	0.000	3.505
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Add: High Performance Capabilities for Military Vehicles Project
FY2010 Plans (C10C190) Currently coordinating to ascertain congressional intent and direction.

Congressional Add: Marine Personnel Carrier Support System
FY2010 Plans
(C10C191) Currently coordinating to ascertain congressional intent and direction.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: High Performance Capabilities for Military Vehicles Project	1.115	-
FY 2010 Accomplishments: N/A		
Congressional Add: Marine Personnel Carrier Support System	2.390	-
FY 2010 Accomplishments: N/A		
Congressional Adds Subtotals	3.505	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services</i> <i>Supt</i>	PROJECT 9C90: <i>MTVR Mod</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9C90: <i>MTVR Mod</i>	3.717	1.672	1.355	-	1.355	1.500	2.411	3.279	2.892	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The MTVR Modication program line funds numerous and very important modifications and initiatives that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, beneficial suggestions and other issues that affect vehicle reliability, availability, maintainability and readiness. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management and it allows the program office the flexibility to develop and implement improvements as need to respond to the evolving needs of the Marine Corps.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Title: Medium Tactical Vehicle Replacement (MTVR): Energy Efficiency</p> <p align="right">Articles:</p> <p>FY 2012 Base Plans: Funding will support PMO participation in the Office of Naval Research (ONR) Future Naval Capability (FNC) initiative for hybridization/fuel demand reduction for the MTVR vehicles. Which supports the CMC priorities for reducing costs, logistics footprint and improved environment.</p>	-	-	0.500 0	-	0.500 0
<p>Title: Medium Tactical Vehicle Replacement (MTVR): ECP</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Funding supports Live Fire Testing and Evaluations for the MTVR vehicle and Troop Carrier to assess vehicle vulnerabilities and crew protection as per the approved LFT&E strategy and the live fire event design plan.</p> <p>FY 2011 Plans: Funding will support Transportability test and ECP development for the MTVR program. Transportability testing helps to evaluate the current maximum safe MTVR lifting weight, evaluate, engineer and price vehicle upgrades to lift MTVRs at highway Gross Vehicle Weight Rating (GVWR). Important data from this testing will prevent issues which could negatively impact deployments and the ability of other services or agencies to transport the MTVR.</p> <p>FY 2012 Base Plans:</p>	0.350 0	0.422 0	0.200 0	-	0.200 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 9C90: <i>MTRV Mod</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funding will support Engineering Change Proposal (ECP) development and testing for the MTRV program. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.					
<p>Title: Medium Tactical Vehicle Replacement (MTRV): Safety</p> <p align="right">Articles:</p>	2.458 0	0.221 0	0.100 0	-	0.100 0
<p>FY 2010 Accomplishments: Funding supported Live Fire Testing and Evaluations for the MTRV vehicle and Troop Carrier to assess vehicle vulnerabilities and crew protection as per the approved LFT&E strategy and the live fire event design plan. Testing has begun on UUNS Fire Suppression Systems for MTRV Vehicle Cab.</p> <p>FY 2011 Plans: Funding will support Transportability test and ECP development for the MTRV program. Transportability testing helps to evaluate the current maximum safe MTRV lifting weight, evaluate, engineer and price vehicle upgrades to lift MTRVs at highway Gross Vehicle Weight Rating (GVWR). Important data from this testing will prevent issues which could negatively impact deployments and the ability of other services or agencies to transport the MTRV.</p> <p>FY 2012 Base Plans: Funding will support Engineering Change Proposal (ECP) development and testing for the MTRV program in response to UUNS requiring quick egress from a catastrophic event to protect th warfighter and MTRV from fire outbreaks in the cab and troop carrier and to protect the engine from fire damage. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.</p>					
<p>Title: Medium Tactical Vehicle Replacement (MTRV): Upgrade</p> <p align="right">Articles:</p>	0.324 0	0.428 0	0.255 0	-	0.255 0
<p>FY 2010 Accomplishments: Funding supported Live Fire Testing and Evaluations for the MTRV vehicle and Troop Carrier to assess vehicle vulnerabilities and crew protection as per the approved LFT&E strategy and the live fire event design plan.</p> <p>FY 2011 Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services</i> <i>Supt</i>	PROJECT 9C90: <i>MTVR Mod</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Funding will support Engineering Change Proposal (ECP) development and testing for the MTVR program. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.</p> <p>FY 2012 Base Plans: Funding will support Engineering Change Proposal (ECP) development and testing for the MTVR program to enhance blast mitigation and the survivability of the warfighter being transported on the MTVR through initiatives to include 5-point restraints, blast protection seats and floor mats, modified ladders and improved lifting points. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.</p>					
<p>Title: Medium Tactical Vehicle Replacement (MTVR): Obsolescence</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Funding supported Live Fire Testing and Evaluations for the MTVR vehicle and Troop Carrier to assess vehicle vulnerabilities and crew protection as per the approved LFT&E strategy and the live fire event design plan.</p> <p>FY 2011 Plans: Funding will support Engineering Change Proposal (ECP) development and testing for the MTVR program. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.</p> <p>FY 2012 Base Plans: Funding will support Engineering Change Proposal (ECP) development and testing for the MTVR program for the integration of brackets and cables to accommodate add-on components (BFT, CVRJ, Intercoms, DVE, etc) for non-OEF funded vehicles. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.</p>	0.370 0	0.380 0	0.200 0	-	0.200 0
<p>Title: Medium Tactical Vehicle Replacement (MTVR): Quality</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Funding supported Live Fire Testing and Evaluations for the MTVR vehicle and Troop Carrier to assess vehicle vulnerabilities and crew protection as per the approved LFT&E strategy and the live fire event design plan.</p> <p>FY 2011 Plans:</p>	0.215 0	0.221 0	0.100 0	-	0.100 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206624M: <i>Marine Corps Cmbt Services Supt</i>	PROJECT 9C90: <i>MTVR Mod</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Funding will support Engineering Change Proposal (ECP) development and testing for the MTVR program. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.					
<i>FY 2012 Base Plans:</i> Funding will support Engineering Change Proposal (ECP) development and testing for the MTVR program. Continual changes in threat environment requires on-going vehicle modifications to address new and changing threats which must be developed and tested.					
Accomplishments/Planned Programs Subtotals	3.717	1.672	1.355	-	1.355

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PMC/BLI 5050: <i>MTVR Modifications</i>	2.936	5.253	8.189	33.600	41.789	9.258	3.419	4.785	3.354	Continuing	Continuing
• 0206315M/508800: <i>MTVR</i>	139.313	92.280	5.833	392.391	398.224	0.675	46.232	50.046	35.881	Continuing	Continuing

D. Acquisition Strategy
The strategy for the MTVR Modification initiative is to be proactive in our approach. This will aid in the prevention of parts obsolescence, potential safety concerns, and support the needs of the Marine Corps. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management and it allows the program office the flexibility to develop and implement improvements as required to respond to evolving needs. The anticipated life of the MTVR was partially based on the vehicle being at curb weight a large percentage of its life time. Due to the addition of the MTVR Armor System, various other components and the current high optempo, it is anticipated that the MTVR life expectancy will be lessened. It is important to ensure MTVR sustainment in any and all circumstances and this Modification line supports this effort.

E. Performance Metrics
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

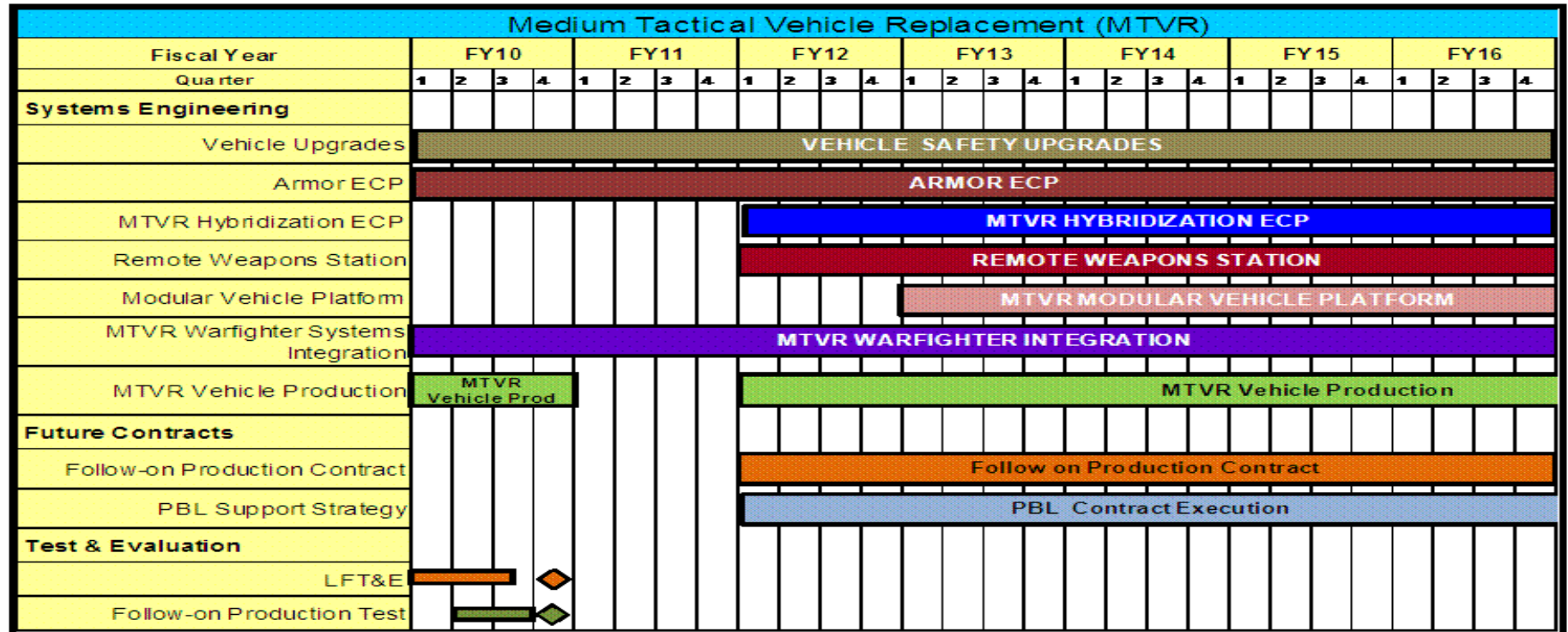
1319: Research, Development, Test & Evaluation, Navy
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0206624M: Marine Corps Cmbt Services
Supt

PROJECT

9C90: MTRV Mod



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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	24.775	20.316	14.101	4.050	18.151	16.144	14.401	14.081	14.339	Continuing	Continuing
2272: <i>Intel Command and Control (C2) Sys</i>	24.775	20.316	14.101	4.050	18.151	16.144	14.401	14.081	14.339	Continuing	Continuing

Note

- * Funds for Project C2272 were realigned to PE 0206625M in FY 2010. Prior to that, they were carried in PE 0206313M.
- * Topographic Production Capability(TPC),and Tactical Exploitation Group(TEG) have merged into DCGS-MC. Funding for these efforts under PE 0206625M has been realigned to DCGS-MC PE 0305208M effective FY 2011.

A. Mission Description and Budget Item Justification

This Program Element (PE) includes funds for Intelligence Command and Control (C2) which supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	29.776	20.316	17.705	-	17.705
Current President's Budget	24.775	20.316	14.101	4.050	18.151
Total Adjustments	-5.001	-	-3.604	4.050	0.446
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-3.493	4.050	0.557
• Rate/Misc Adjustments	-	-	-0.111	-	-0.111
• Congressional General Reductions Adjustments	-0.001	-	-	-	-
• Congressional Directed Reductions Adjustments	-5.000	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>
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Change Summary Explanation

FY12 Baseline adjustments reflect technical realignments from RDT&E to PMC/OMMC.
FY12 total increase reflects \$4.050M OCO request for Tactical Remote Sensor System (MASINT), Team Portable Collection System and CESAS (SIGINT), and IAS Mod Kit (All-Source Intel) R&D efforts that will execute quickly with immediate pay-offs for deployed forces in support of OEF.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>				PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2272: <i>Intel Command and Control (C2) Sys</i>	24.775	20.316	14.101	4.050	18.151	16.144	14.401	14.081	14.339	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

Global Command and Control System Integrated Imagery and Intelligence (GCCS I3) is a joint program that is designed to enhance the operational Commander's situation awareness and track management through the use of a standard set of integrated, linked tools and services that maximize commonality and interoperability across the tactical theater, and national communities. GCCS-I3 operates in joint and service specific battlespace and is interoperable, transportable, and compliant with the DoD mandated Common Operating Environment (COE). FY 2011 RDTE funds support the development of GCCS-I3 4.x software enhancements and USMC Intelligence systems interoperability testing and certification program with the Joint Interoperability Test Command (JITC).

Distributed Common Ground System-Marine Corps (DCGS - MC) - formerly known as Distributed Common Ground/Surface-Integration (DCGS-I), is a collection of Service Systems that will contribute to joint and combined warfighter needs for Intelligence, Surveillance and Reconnaissance (ISR) support, with the Global Information Grid (GIG) providing unconstrained communications circa 2012 to support the Department of Defense (DoD) ISR Enterprise end-state. The DCGS Integrated Backbone (DIB) is the architecture that will tie the Service DCGS systems together into one Family of Systems (FOS). The DIB will provide the tools, standards, architecture, and documentation for the DCGS community to achieve a Multi-Intelligence (Multi-INT) (e.g. Imagery Intelligence (IMINT), Signals Intelligence (SIGINT), Measurement and Signature Intelligence (MASINT), Counterintelligence/Human Intelligence (CI/HUMINT)), network centric environment with the interoperability to afford individual nodes' access to the information needed to execute their respective missions to include Irregular Warfare. The Marine Corps will conduct DIB integration research and development to meet a congressionally mandated implementation deadline. DCGS funding has been realigned to new PE 0305208M effective FY 2011.

TROJAN SPIRIT II - is an SHF multi-band satellite communications terminal, available in either HMMWV-mounted or transit case configuration, that provides dedicated tactical communications capability at the TS/SCI and Secret Collateral levels to USMC intelligence units. TROJAN SPIRIT terminals provide connectivity into JWICSS, NSANET and SIPRNET via the TROJAN Network Control Center.

Technical Control Analysis Center (TCAC), consisting of the AN/UHQ-83 TCAC Remote Analysis Workstation (RAWS), AN/MYQ-9 TCAC Transportable Workstation, Multi-Level Security (MLS) and One Roof system, is the focal point of Radio Battalions (RADBN), Marine Corps Special Operations Command (MARSOC), and Fixed Wing Marine Electronic Attack Squadron (VMAQ) Signals Intelligence (SIGINT) operations. The TCAC automatically collects, stores, retrieves and plays back digital voice signals; fuses and analyzes SIGINT data from tactical, theater and national collectors and databases for dissemination to tactical commanders. TCAC provides SIGINT analysis applications to deployable MAGTF units capable of directing and managing the technical and operational functions of other RADBN SIGINT/EW

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
<p>assets. The TCAC provides termination of national, theater and tactical data networks for data exchange with the tactical SIGINT/EW assets, the Intelligence Analysis System (IAS), national databases, and provided USMC tactical SIGINT collection and analytical data into the Real-Time Regional Gateway (RTRG) and Distributed Common Ground System (DCGS).</p> <p>Joint Surveillance Target Attack Radar (JSTARS) connectivity program will research and integrate a client software connectivity solution which will allow the JSTARS Moving Target Indicator (MTI), Fixed Target Indication (FTI) and Synthetic Aperture Radar (SAR) data to be passed from the JSTARS Common Ground Station (CGS) to lower echelons within the Marine Air-Ground Task Force (MAGTF). Additionally, the Marine Corps will continue future MTI and Common Data Link (CDL) sensor capabilities research and development.</p> <p>Tactical Remote Sensor Systems (TRSS) will provide all weather direction, location determination, targeting, and tactical indications and warning of enemy activity in the Marine Air Ground Task Force (MAGTF) Commander's Area of Interest. The TRSS is an equipment suite consisting of three primary sub-systems: Unattended Ground Miniature Sensors (UGMS); Relay Systems; and monitoring systems. The sensor systems will include seismic/acoustic sensors, electro-magnetic sensors, infrared (passive) sensors; and air-delivered sensors. The relay systems include dual channel duplex commendable and single channel repeaters. The monitoring system includes the Sensor Mobile Monitoring System (SMMS). The composition of the three sub-systems are comprised of several individual components. As the Product Improvement Program proceeds, upgrading of individual components will occur on an as needed basis. FY12 R&D OCO funding for TRSS will enable the completion of the Imaging and Processor Board II/Common Sensor Radio integration, which will allow procurement to quickly follow.</p> <p>Team Portable Collection System - Multi-Platform Capable (TPCS-MPC) - is a semi-automated, man/team portable system providing intercept, collection, direction-finding, reporting and collection management to MAGTF commander. It provides special signals intercept, and DF capability for each system and is modular, lightweight and team transportable. The next upgrades will be the multi-platform capability and will allow the system to exploit information from more technically advanced target sets and will provide the MAGTF commander with a modular and scalable carry on/carry off suite of equipment. FY12 R&D OCO funding for TPCS is required to meet new requirements to integrate new Special Intelligence technologies. FY12 OCO funds are needed to complete the development, integration, modification, and testing efforts initiated in FY10. These new RadBn Mods FUE'd systems will be transitioned into the TPCS configuration to include MoonDate, 4453 Receivers, ICS3, Internal DF Processor, precision location tools, and Snap-in Sleeve Design. OCO funds are necessary to complete the development of these technology insertions in order to execute procurement and fielding to meet emerging OEF requirements.</p> <p>Wide Field of View Persistent Surveillance (WFVPS) (formerly Angel Fire) is a capability that supports persistent Intelligence, Surveillance and Reconnaissance (ISR), Improvised Explosive Device (IED) mitigation, and actionable intelligence in urban and other operations (e.g. disaster relief, security, etc). It delivers broad area, near real time, geo-registered imagery down to the tactical level of execution. Consisting of airborne and ground components such as the Airborne payload consists of an imager sensor (currently Electro-Optical (EO), on-board processors, and an air-to-ground communication link. Ground distribution network consist of the ground receive station, servers, storage and viewer client stations. AF is hosted on manned platforms, currently the King Air A-90p pilots fly the plane while the sensors can be controlled from the ground through autonomous software. The USMC objective EFVPS system will reside on an UAS.</p> <p>MAGTF Secondary Imagery Dissemination System (MSIDS) is the only ground prospective Family of Systems (FoS) that provides organic tactical digital imagery collection, transmission and receiving capability to the MAGTF Commander. MSIDS is comprised of components necessary to enable Marines to capture, manipulate, annotate, transmit or receive images in Near Real Time (NRT), internally with subordinate commands that are widely separated throughout the area of operations and externally with higher adjacent commands. MSIDS capability resides with the MAGTF G/S-2 sections and Ground Reconnaissance Battalions, Light Armored</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	2272: <i>Intel Command and Control (C2) Sys</i>

Reconnaissance Battalions, Infantry Battalion Scout Sniper Platoons and Marine Special Operations Command. The MSIDS FoS extends the digital imaging capability to all echelons within the MEF, down to and including battalions and squadrons. Captured images are capable of being forwarded throughout the MAGTF through the use of Base Station Workstation/Communication Interface (BW/CI), Out Station Workstation/Communication Interface (OW/CI) or existing C4ISR architecture. Images can also be transmitted to the Tactical Exploitation Group (TEG) for more detailed processing and analysis. A recent increase of the MSIDS Video Exploitation Workstation (VEW) requirement within Infantry Battalions and Wing units, down to the squadron level, has grown from 18 to 140 in the past year. The VEW is utilized to import, manipulate, annotate still and video imager, create intelligence products, lift still frames from video, view multi-format TV signals and provide a field briefing capability. MSIDS FoS is currently employed in every location world-wide where the Marine Corps participates in military operations to include Irregular Warfare. MSIDS is currently or has been employed in Iraq, Kuwait, Afghanistan, Haiti, Philippines, and Horn of Africa.

Intelligence Equipment Readiness (IER) - Effective FY12 the TENCAP program funding line will be merged into the IER funding line. The funding will continue to support rapid prototyping and integration of emerging technologies involving national systems data. The IER provides a responsive capability to alleviate Marine Corps intelligence systems shortfalls created by the rapidly evolving missions, threats and command relationships associated with the Overseas Contingencies Operations (OCO). The program provides for rapid technology insertion, as well as quick reaction training and logistics, to meeting the time sensitive intelligence infrastructure requirements of Marine Corps Operating Forces and the theater and service intelligence organizations supporting those forces. IER rapidly mitigates intelligence infrastructure shortfalls through exploitation of COTS, GOTS and Non-Developmental Item technology to the greatest extent practical. This effort also centralizes support for Marine Corps intelligence infrastructure items and systems that are not separately identified within the program funding lines. IER addresses requirements that span the entire Marine Corps intelligence systems architecture.

Intelligence Analysis Systems, Family of Systems (IAS FoS) supports the employment of systems that provide timely planning and all source fusion, analysis, and dissemination of intelligence across the Intelligence Community of the Marine Air Ground Task Force (MAGTF). IAS FoS ensures its systems are scalable dependant on the mission, and ensures that tactical intelligence is tailored to meet specific mission requirements from conventional to irregular warfare. FY12 R&D OCO funding for IAS Mod Kits is requested to conduct integration, system testing, and evaluation of technology to incorporate into Intelligence Analysis Systems (IAS) Family of Systems (FoS) to directly support the Marines in OEF-A. Current intelligence efforts in Afghanistan have demonstrated a compelling need for COTS/GOTS product purchases to provide improved linking of structured and unstructured data sources, data and information discovery, and improved interoperability of data and exchange amongst the existing toolset applications. Without funding, the impact to OEF-A, as well as other Marine Corps overseas efforts, will be the lack of the Marines, and IAS FoS's ability to stay up-to-date with current technology (COTS/GOTS) that allows an increase in response time of intelligence analysis process, better quality intelligence products, and timely dissemination for units in support of OEF, or other overseas contingency operations.

Radio Reconnaissance Equipment Program (RREP) provides the Radio Battalions (RadBns), Radio Reconnaissance Platoons (RRP), and the Marine Corps Forces Special Operations Command (MARSOC) Direct Support Teams with mission unique Signals Intelligence/Ground Electronic Warfare (SIGINT/EW) Equipment suites. The latest suite of equipment, the SIGINT Suite 3 (SS-3) is comprised of technology and equipment necessary to prosecute advanced signals. The RRP Marines are trained and equipped to support the full spectrum of Marine Expeditionary Unit Special Operations Capable (MEU SOC) mission profiles as well as provide real time, imbedded support to any special operations scenario. This provides the supported commander greater flexibility in employing his SIGINT assets when the use of conventional RadBn assets are not feasible. RREP is currently maintaining the SS-3 using an evolutionary development approach that inserts the latest technology into the suite as it becomes mature. This enables the SS-3 to remain a current platform against emerging threats.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Counterintelligence (CI) and Human Intelligence (HUMINT) Equipment Program (CIHEP) provides the MAGTF with integrated, standardized, and interoperable information (automated data processing), communication, and specialized equipment to conduct the full spectrum of tactical CI/Force Protection to include Irregular Warfare, HUMINT, and technical collection operations in accordance with applicable national oversight directives. CIHEP provides each CI/HUMINT Company (CIHCo) with a suite of state-of-the-market equipment comprised of commercial-off-the-shelf, government-off-the-shelf, and non-developmental items (COTS/GOTS/NDI). It integrates audio, video, imagery, communications, technical surveillance and computer equipment into lightweight, modular, scalable, deployable packages. CIHEP enhances the capability to collect, receive, process, and disseminate CI/HUMINT information from overt, sensitive, technical, tactical, and Force Protection, in the service, joint, and combined forces area of operations.

Intelligence Broadcast Receiver (IBR) The USB ENTR is the newest part of the Intelligence Broadcast Receiver family conforming to the DoD Integrated Broadcast Service (IBS) objectives of interoperability and commonality across the Services to receive and process near real-time intelligence data. The USB ENTR system is an integral portion of 7 additional Programs of Record, providing a significant reduction in size and weight from the currently fielded system. The USB ENTR provides access to IBS data via UHF SATCOM broadcast channels delivering near real-time intelligence information within Combatant Commanders theater of operation allowing intelligence analysis to respond to accelerated operations cycles supporting the Global War on Terrorism. The USB ENTR is the follow-on to the currently fielded system (Commanders Tactical Terminal) which, if not replaced prior to the NSA mandated cryptographic modernization date (classified) will become obsolete and unusable. In addition, the recently fielded Joint Tactical Terminal (JTT) IBR solution also requires a critical upgrade to meet the cryptographic modernization date in order to continue supporting GWOT operations.

Tactical Exploitation of National Capabilities (TENCAP) is a program designed to enhance the ability of tactical Marine Corps forces to exploit the capabilities of national intelligence-gathering systems. Congressionally directed, it requires close liaison with the intelligence community and involves complex and highly-sensitive activities. Effective FY12 the TENCAP program funding line will be merged into the IER funding line. The funding will continue to support rapid prototyping and integration of emerging technologies involving national systems data.

Communication Emitter Sensing and Attacking System (CESAS) has assumed the mission of sensing and denying the enemy the use of the electromagnetic spectrum, thereby disrupting the enemy's command and control system. The CESAS covers the High Frequency (HF), Very High Frequency (VHF) and Ultra High Frequency (UHF) frequency ranges against enemy emitters using modern modulation schemes. It is a D-30, Tier 3 system which allows flexible employment to conduct Electronic Attack (EA) while on the move or in a stationary position, thus optimizing the Commanders' ability to employ this asset for the greatest success of the mission. FY12 R&D OCO funding for CESAS is required to support software upgrades and Information Assurance updates for systems supporting Marine Expeditionary Brigade (MEB) ground Electronic Attack (EA) activities in Operation Enduring Freedom (OEF). This funding will also assist in the development of the advanced componentry required to reduce equipment damage realized by the Radio Battalions (RadBns) due to enemy engagement and platform suspension issues across rugged terrain.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: *CESAS: Engineering and Program Management Support Services	-	-	-	0.500	0.500
Articles:	0	0	0	0	0
FY 2012 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>		PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
N/A					
FY 2012 OCO Plans: This funding is required to support software upgrades and Information Assurance updates for systems supporting Marine Expeditionary Brigade (MEB) ground Electronic Attack (EA) activities in Operation Enduring Freedom (OEF). This funding will also assist in the development of the advanced componentry required to reduce equipment damage realized by the Radio Battalions (RadBns) due to enemy engagement and platform suspension issues across rugged terrain.					
Title: *Intelligence Analysis System, Mod Kit: Program Management					
Articles:					
Description: Effective FY12 The Global Command Control Station (GCCS) I3 funding line is merged into the Intelligence Analysis System (IAS) funding line.					
FY 2012 Base Plans: Program management support for the integration and updates of the GCCS I3 software into the IAS FoS software baseline. Planned purchase of R&D prototyping software/hardware efforts for future IAS FoS software baselines.					
Title: *Intelligence Analysis System, Mod Kit: Development Support					
Articles:					
Description: Effective FY12 The Global Command Control Station (GCCS) I3 funding line is merged into the Intelligence Analysis System (IAS) funding line.					
FY 2012 Base Plans: Planned to support software development and integration of all IAS FoS related COTS and GOTS software.					
FY 2012 OCO Plans: Funding is requested to conduct integration, system testing, and evaluation of technology to incorporate into Intelligence Analysis Systems (IAS) Family of Systems (FoS) to directly support the Marines in OEF-A. Current intelligence efforts in Afghanistan have demonstrated a compelling need for COTS/GOTS product purchases to provide improved linking of structured and unstructured data sources, data and information discovery, and improved interoperability of data and exchange amongst the existing toolset applications. Without funding, the impact to OEF-A, as well as other Marine Corps overseas efforts, will be the lack of the Marines, and IAS FoS's					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
	-	-	2.214 0	-	2.214 0
	-	-	0.334 0	1.400 0	1.734 0

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
ability to stay up-to-date with current technology (COTS/GOTS) that allows an increase in response time of intelligence analysis process, better quality intelligence products, and timely dissemination for units in support of OEF, or other overseas contingency operations.					
<p>Title: *GCCS-I3: Software Engineering Support</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Supported integrating and updating GCCS I3 software into the IAS FoS software baseline. Additionally, funds were used to support integrating quarterly patches for distribution to OPFOR.</p> <p>FY 2011 Plans: Planned Integration and updates in support of incorporating GCCS I3 software into the IAS FoS software baseline.</p>	0.866 0	0.856 0	-	-	-
<p>Title: *GCCS-I3: Program Support</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Provided program management support for the integration and updates of the GCCS I3 software into the IAS FoS software baseline.</p> <p>FY 2011 Plans: Planned program management support for the integration and updates of the GCCS I3 software into the IAS FoS software baseline.</p>	0.597 0	0.587 0	-	-	-
<p>Title: *GCCS-I3: Acquisition Logistics Support</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Supported services related to the storage and shipment of GCCS I3 software to include configuration management</p> <p>FY 2011 Plans: Planned to provide support services related to the storage and shipment of GCCS I3 software to include configuration management.</p>	0.129 0	0.129 0	-	-	-
<p>Title: *GCCS-I3: Program Testing</p>	0.134	0.141	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p align="right">Articles:</p> <p>FY 2010 Accomplishments: Supported integration level testing of GCCS I3 in the IAS FoS software baseline.</p> <p>FY 2011 Plans: Planned to support integration level testing of GCCS I3 in the IAS FoS software baseline.</p>	0	0			
<p>Title: *DCGS-MC: Test and Evaluation Support</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: DCGS-MC conducted prototype developmental testing in support of the Milestone A, Technology Development phase while coordinating JITC and MCOTEA system capability observations during Empire Challenge '10.</p>	1.450 0	-	-	-	-
<p>Title: *DCGS-MC: Integration</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Conducted Squadron Expeditionary Exploitation Suite design, development, integration, test, and Field User Evaluation (FUE) activities. Prototyped, refined and implemented the user interface for the DCGS-MC Portal and initiated definition & development of the DCGS-MC Intelligence Analyst Semantic WIKI.</p>	2.615 0	-	-	-	-
<p>Title: *DCGS-MC: Engineering and Technical Support</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Requirements analysis and support to the CDD development, preparation and conduct of System Requirements Review, development of the Software Development Plan, Systems Engineering Plan and the Test and Evaluation Master Plan.</p>	1.136 0	-	-	-	-
<p>Title: *DCGS-MC: Studies and Analysis</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Design of the prototype DCGS-MC Increment 1 System, for use in Empire Challenge 2010, based on integration of most recent DCGS Integration Backbone software, and full integration of the Marine Corps GEOINT capabilities provided by the Topographic Product Capability.</p>	3.978 0	-	-	-	-

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Development and execution of a field user evaluation (FUE) for the processing, exploitation and enterprise exposure of USMC Tactical Imagery (F-18 ATARS) data for Afghanistan operations. Title: *TROJAN SPIRIT: Engineering and Technical Support	0.414	0.412	0.431	-	0.431
Articles:	0	0	0		0
FY 2010 Accomplishments: Completed engineering and technical support.					
FY 2011 Plans: Planned engineering and technical support.					
FY 2012 Base Plans: Management and Technical Support which includes studies and analysis of next generation Special Intelligence Communications (SI COMMS) systems.					
Title: *Technical Control and Analysis Center PIP (TCAC-PIP): Software Upgrade	1.836	1.827	1.392	-	1.392
Articles:	0	0	0		0
FY 2010 Accomplishments: Completed software development, integration and testing for COE 4.X and future releases.					
FY 2011 Plans: Planned Software Upgrade.					
FY 2012 Base Plans: Continued Software Upgrade for the RAWS Transportable Work Station (TWS) and planned integration of the Cyber Analysis Tools into the TCAC Family of Systems (FOS).					
Title: *Technical Control and Analysis Center PIP (TCAC-PIP): Program Management Support	0.070	0.077	0.545	-	0.545
Articles:	0	0	0		0
FY 2010 Accomplishments: Planned program management support.					
FY 2011 Plans: Planned program management support.					
FY 2012 Base Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued program management support for the Integration of the Cyber Analysis Tools into the TCAC FOS.					
Title: *Joint Surveillance Target Attack Radar System (JSTARS): Engineering and Tech Support Articles:	0.033 0	0.050 0	-	-	-
FY 2010 Accomplishments: Planned engineering, technical and management support.					
FY 2011 Plans: Continued engineering, technical and management support.					
Title: *Joint Surveillance Target Attack Radar System (JSTARS): MTI Integration Articles:	0.199 0	0.500 0	-	-	-
FY 2010 Accomplishments: Completed Moving Target Indicator(MTI) integration into ground element.					
FY 2011 Plans: Continue MTI integration into USMC Intelligence Systems.					
Title: *Tactical Remote Sensor System (TRSS): RSMS VER 4.2.2. Articles:	0.375 0	0.850 0	0.295 0	-	0.295 0
FY 2010 Accomplishments: Completed evolutionary software development of Remote Sensor Management System (RSMS) versions 4.2.2 and 5.0.					
FY 2011 Plans: Continued evolutionary software upgrade from Remote Sensor Management System (RSMS) VER 5.0 to Sentinel VER 2.0.					
FY 2012 Base Plans: Continue TRSS evolutionary software upgrade to Sentinel VER 3.0.					
Title: *Tactical Remote Sensor System (TRSS): Engineering and Tech Support Articles:	0.100 0	0.500 0	0.307 0	-	0.307 0
FY 2010 Accomplishments:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Completed on-going engineering and technical management support. FY 2011 Plans: Continued on-going engineering and technical management support. FY 2012 Base Plans: Continue on-going engineering and technical management support.					
Title: *Tactical Remote Sensor System (TRSS): CSR Integration Articles:	1.413 0	0.700 0	- 0	0.400 0	0.400 0
FY 2010 Accomplishments: Completed planned development of Imaging and Processor Board II/Common Sensor Radio (CSR) integration. FY 2011 Plans: Continued evolutionary efforts for CSR integration. FY 2012 Base Plans: N/A FY 2012 OCO Plans: Planned completion of CSR integration.					
Title: *Tactical Remote Sensor System (TRSS): Urban Sensor System(USS) Articles:	0.680 0	1.947 0	- -	- -	- -
FY 2010 Accomplishments: Completed planned phase of Urban Sensor System (USS) development. FY 2011 Plans: Continued planned development of USS.					
Title: *Tactical Remote Sensor System (TRSS): IOT&E, Increment II Articles:	0.100 0	0.120 0	0.100 0	0.250 0	0.350 0
FY 2010 Accomplishments: Completed support of initial operational test and evaluation (IOTE) and Increment II efforts. FY 2011 Plans:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy				DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>		PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
Planned upgrades to Increment II.					
FY 2012 Base Plans: Planned IOT&E for the TRSS CSR baseline.					
FY 2012 OCO Plans: Planned IOT&E for the TRSS CSR baseline.					
Title: *Team Portable Collection System (TPCS): System Development					
Articles:					
	-	1.213	1.000	1.500	2.500
		0	0	0	0
FY 2011 Plans: Planned system development of upgrades.					
FY 2012 Base Plans: Plan system development of technology insertion upgrades.					
FY 2012 OCO Plans: RDTE is required to meet new requirements to integrate new Special Intelligence technologies. These new requirements are not currently funded in the FYDP thus FY12 OCO funds are needed to complete the development, integration, modification, and testing efforts initiated in FY10. These new RadBn Mods FUE"d systems will be transitioned into the TPCS configuration to include MoonDate, 4453 Receivers, ICS3, Internal DF Processor, precision location tools, and Snap-in Sleeve Design. OCO funds are necessary to complete the development of these technology insertions in order to execute subsequent FY13 procurement and deployment to meet emerging OEF requirements.					
Title: *Team Portable Collection System (TPCS): Training Development and Test Support					
Articles:					
	1.415	1.307	1.972	-	1.972
	0	0	0		0
FY 2010 Accomplishments: Planned training development and test support.					
FY 2011 Plans: Plan training development and test support.					
FY 2012 Base Plans: Continue efforts for training development and test support.					
Title: *Team Portable Collection System (TPCS): Program Support					
	0.117	1.500	0.721	-	0.721

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Articles:	0	0	0		0
FY 2010 Accomplishments: Completed program support and management.					
FY 2011 Plans: Planned program support and management.					
FY 2012 Base Plans: Planned program support and management.					
Title: *Wide Field of View Persistent Surveillance (WFVPS): Engineering and Technical Support Articles:	0.226 0	0.490 0	0.434 0	-	0.434 0
FY 2010 Accomplishments: Completed engineering and technical support.					
FY 2011 Plans: Planned engineering and technical support.					
FY 2012 Base Plans: Continued engineering and technical support for Persistent Intelligence Surveillance and Reconnaissance (P-ISR).					
Title: *MAGTF Secondary Imagery Dissemination System: Program and Tech Support Articles:	0.049 0	0.050 0	0.050 0	-	0.050 0
FY 2010 Accomplishments: Continued on-going technical support for product development of hardware and software refresh.					
FY 2011 Plans: Continue on-going technical support for product development of hardware and software refresh.					
FY 2012 Base Plans: Continue on-going technical support for product development of hardware and software refresh.					
Title: *MAGTF Secondary Imagery Dissemination System: Engineering Support Articles:	0.218 0	0.220 0	0.238 0	-	0.238 0
FY 2010 Accomplishments:					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continued on-going engineering support for development of hardware and software refresh.						
FY 2011 Plans: Continue on-going engineering support for development of hardware and software refresh.						
FY 2012 Base Plans: Continue on-going engineering support for development of hardware and software refresh.						
Title: *Intelligence Equipment Readiness (IER): Program and Technical Support		0.200	0.197	2.523	-	2.523
	Articles:	0	0	0		0
FY 2010 Accomplishments: Planned program management and technical support.						
FY 2011 Plans: Planned program management and technical support.						
FY 2012 Base Plans: Continued program management and technical support for Rapid Technology Insertion. \$1M increase in FY12 due to re-alignment of IER PMC and OMMC into RDT&E appropriation to address development efforts in Rapid Technology Insertion to rapidly mitigate intelligence infrastructure shortfalls. An additional \$618K increase in FY12 as a result of the merger of the Tactical Exploitation of National Capabilities (TENCAP) program into the IER funding line. The funding will continue to support rapid prototyping and integration of emerging technologies involving national systems data.						
Title: *Intelligence Analysis System, Mod Kit: Software Support		0.866	0.965	-	-	-
	Articles:	0	0			
FY 2010 Accomplishments: Supported software development and integration of all IAS FoS related COTS and GOTS software. Additionally, funds were used to support integrating quarterly patches for distribution to OPFOR.						
FY 2011 Plans: Planned to support software development and integration of all IAS FoS related COTS and GOTS software.						
Title: *Intelligence Analysis System, Mod Kit: Acquisition Logistics Support		0.519	0.523	-	-	-
	Articles:	0	0			
FY 2010 Accomplishments:						

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Supported the purchase of R&D prototyping software/hardware efforts for future IAS FoS software baselines. FY 2011 Plans: Planned to support the purchase of R&D prototyping software/hardware efforts for future IAS FoS software baselines.					
Title: *Radio Recon Equipment Program: Program and Technical Support Articles:	0.804 0	0.821 0	0.831 0	-	0.831 0
FY 2010 Accomplishments: Completed project management and technical support for research and test of new technologies for system upgrades. FY 2011 Plans: Planned project management and technical support for research and test of new technologies for system upgrades. FY 2012 Base Plans: Planned project management and technical support for research, testing, and integration efforts for technical refresh and upgrades of program hardware and software.					
Title: *Counterintel and Human Intel Equip (CIHEP): Engineering and Technical Support Articles:	0.039 0	0.040 0	0.133 0	-	0.133 0
FY 2010 Accomplishments: Continued engineering, integration and technical support for the refresh of program hardware and software. FY 2011 Plans: Continue engineering, integration and technical support for the refresh of program hardware and software. FY 2012 Base Plans: Planned engineering, integration, and technical support for continuing the refresh of program hardware and software.					
Title: *Counterintel and Human Intel Equip (CIHEP): Program Management Support Articles:	0.089 0	0.090 0	-	-	-
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Planned program management support.						
FY 2011 Plans: Planned program management support.						
Title: *Intelligence Broadcast Receiver (IBR): Engineering and Technical Support		0.495	0.493	0.421	-	0.421
	Articles:	0	0	0		0
FY 2010 Accomplishments: Completed engineering and technical support.						
FY 2011 Plans: Planned engineering and technical support.						
FY 2012 Base Plans: Continued contractor program support for USB ENTR Integration, Common Message Format and Tactical Receive Segment Software Testing.						
Title: *Intelligence Broadcast Receiver (IBR): Contractor Support		0.138	0.147	0.160	-	0.160
	Articles:	0	0	0		0
FY 2010 Accomplishments: Completed contractor program support.						
FY 2011 Plans: Planned contractor program support.						
FY 2012 Base Plans: Planned contractor program support for USB ENTR Integration, Common Message Format and Tactical Receive Segment Software Testing.						
Title: *Tactical Exploitation of National Capabilities (TENCAP): Program Support		3.320	3.372	-	-	-
	Articles:	0	0			
FY 2010 Accomplishments: Completed on-going program support and management; evaluate National Intelligence data systems for MAGTF applicability.						
FY 2011 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue program support and management; evaluate National Intelligence data systems for MAGTF applicability.					
Title: *Tactical Exploitation of National Capabilities (TENCAP): Technical Assessments	0.155	0.192	-	-	-
Articles:	0	0			
FY 2010 Accomplishments: Planned technical assessments of emerging National data dissemination capabilities.					
FY 2011 Plans: Planned technical assessments of emerging National data dissemination capabilities.					
Accomplishments/Planned Programs Subtotals	24.775	20.316	14.101	4.050	18.151

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012			FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC 47471: <i>DCGS</i>	0.635	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.635
• PMC 47474: <i>JSTARS</i>	6.338	4.843	0.384	0.000	0.384	3.239	3.001	1.405	2.789	Continuing	Continuing
• PMC 47475: <i>TRSS</i>	5.403	10.249	9.862	4.714	14.576	9.544	8.602	9.276	9.135	Continuing	Continuing
• PMC 47476: <i>TPCS</i>	0.858	49.308	19.061	0.000	19.061	5.208	4.089	22.103	25.486	Continuing	Continuing
• PMC 47478: <i>MSIDS</i>	8.492	16.565	1.970	8.507	10.477	1.727	4.172	1.985	2.026	Continuing	Continuing
• PMC 47479: <i>IER</i>	11.019	5.434	2.831	5.000	7.831	2.777	1.928	2.137	1.628	Continuing	Continuing
• PMC 474710: <i>IAS</i>	4.534	20.132	2.210	1.400	3.610	14.125	13.590	3.568	6.868	Continuing	Continuing
• PMC 474712: <i>CIHEP</i>	6.455	9.956	6.712	1.440	8.152	5.323	9.432	9.184	9.751	Continuing	Continuing
• PMC/4767: <i>DCGS</i>	0.000	26.371	10.789	0.000	10.789	19.513	13.510	21.078	8.881	Continuing	Continuing
• PMC/474713: <i>TCAC</i>	1.431	15.737	12.741	3.078	15.819	11.881	11.409	6.622	8.932	Continuing	Continuing
• PMC/474715: <i>IBR</i>	6.806	4.250	0.392	6.993	7.385	0.437	0.450	0.415	0.422	Continuing	Continuing
• PMC/474716: <i>CESAS</i>	0.000	2.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PMC/474718: <i>RREP</i>	1.081	12.966	1.348	9.900	11.248	1.378	1.420	1.468	1.493	Continuing	Continuing
• PMC474737: <i>TROJAN SPIRIT</i>	0.107	11.907	0.111	0.000	0.111	0.113	0.116	0.118	0.120	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012	FY 2012	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC474733: <i>JW/CS</i>	6.867	7.108	4.662	6.100	10.762	3.315	3.436	2.134	2.185	Continuing	Continuing

D. Acquisition Strategy

(U) ACQUISITION STRATEGY GCCS-I3: This program promotes and ensures joint interoperability among all combatant commands for theater and national level common operational picture and integrated imagery and intelligence data in compliance with ICD 501. Engineering and technical support is provided to PM IDF&D systems integration efforts for incorporation of the COE and GCCS I3 software baseline. Integration is performed at the Integrated Team Solution Facility and SPAWAR. SPAWAR will be used as the hub for the majority of the integration effort of the GCCS I3 initiative.

(U) ACQUISITION STRATEGY DCGS-MC: The Marine Corps DCGS-MC project officer will leverage the USAF DCGS 10.2 Research, Development Test and Evaluation (RDT&E) effort and focus on the development of the DCGS Integrated Backbone (DIB) for the DCGS-MC. Additionally, the DCGS-MC will leverage MAGTF Legacy system DIB compliancy efforts.

(U) ACQUISITION STRATEGY TROJAN SPIRIT: Procure and continuously improve USMC TROJAN SPIRIT systems to meet evolving Marine Corps operational needs while maintaining interoperability with the Army TROJAN Network and maintaining, as closely as practical, configuration common to the Army TROJAN SPIRIT systems.

(U) ACQUISITION STRATEGY TCAC: The acquisition of components for the TCAC will maximize the use of existing equipment, NDI/COTS/GFE equipment/software. The integration effort for TCAC hardware components will be accomplished under the control of the SSA, MCSC. Software integration and support will be accomplished by contractors under the control of the Project Officer. These activities report to and are directed by the Program Manager, Intelligence, Data, Fusion and Dissemination (IDF&D) Systems, Marine Corps Systems Command (MARCORSYSCOM). Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, with separate contractual agreements.

(U) ACQUISITION STRATEGY JSTARS: JSTARS will utilize ongoing Army JSTARS contracts for continue development of MTI and MTI Sensor capabilities as well as upgrades to the JSTARS Common Software baseline. Post Deployment Software Support (PDSS) will be provided through the Army Communications-Electronics Command (CECOM), Ft Monmouth, NJ. Surveillance Control Data Link (SCDL) refresh efforts will conducted in conjunction with the Army JSTARS Program Office. Development of a Moving Target Indicator capability for integration into the Distributed Common Ground System-Marine Corps will continue through MTCSC.

(U) ACQUISITION STRATEGY TRSS: The TRSS are typically Non-Developmental Item (NDI) integration efforts, making maximum use of the efforts of hardware and software initially developed by other DoD organizations and programs. The initial phases of each Increments are cost-plus fixed-fee efforts, while the production phase, which encompasses the production, fielding, training and initial support of the systems, are firm-fixed price efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	2272: <i>Intel Command and Control (C2) Sys</i>

(U) ACQUISITION STRATEGY TPCS: TPCS, the ever-increasing sophistication of target threats and information technology necessitates an evolutionary acquisition approach. TPCS will make incremental improvements through maximum use of COTS, GOTS and NDI. These technology insertions and product improvements will ensure the Radio Battalions maintain cutting edge technologies and collection capabilities.

(U) ACQUISITION STRATEGY TPC: The TPC will refresh and upgrade the existing TPC equipment as technology advances. As new technology emerges, the current fielded systems will need incremental hardware and software refreshes to sustain operational requirements and to meet the ORD requirement compliance with the NGA US Imagery and Geospatial Information System. The TPC program uses existing Government contracts for hardware/software development and integration. Full-time contractor support is provided through the Commercial Enterprise Omnibus Support Services (CEOss) contract. Additionally, all full time engineering and integration support is provided by Northrop Grumman Information Technology TASC through the Information Technology Omnibus Procurement II (ITOP II) contract under the auspices of the MCSC Information Technology Modernization 2000 (ITM2K) Project Office. Maintenance support will be managed by MARCORLOGBASES Albany and MCSC, Albany and through separate contractual agreements.

(U) ACQUISITION STRATEGY TEG: The TEG Program Office leverages the advantages of its multi-service common software baseline and inherent Joint service interoperability. Development, integration, interoperability, security certification and accreditation and acquisition is divided between three prime contractors: Northrop Grumman Electronic Systems, Baltimore, MD (NGB) (through a classified contract); Space and Naval Warfare Systems Center, Charleston, SC (SSCC), and MTC Services Corporation. An incremental refresh is currently ongoing for the TEG Main.

(U) ACQUISITION STRATEGY WFVPS: MCCDC maintains sponsorship of the Angel Fire UUNS. Marine Corps funds Air Force Research Lab to support the United States Air Force (USAF) in the development of subsequent sensor spirals as a technology demonstration supporting Marines operating in the CENTCOM AOR. In keeping with the Program Decision Memorandum (PDM) of November 2007. Development, integration, interoperability and testing are divided between AFRL, Los Alamos National Laboratory (LANL) and the NRL.

(U) ACQUISITION STRATEGY MSIDS: Research, test and integrate new technology to keep pace with the evolving Marine Corps operational needs. Acquisition will maximize the use of NDI/COTS hardware and software to ensure the supporting units maintain cutting edge technology and collection capabilities.

(U) ACQUISITION STRATEGY IER: This program seeks to support a wide range of technology solutions based on the requests received from the Operating Forces and/or PM Intelligence Program of Record. The request must require solution evaluation beyond merely acquisition to be recommended as an Intelligence Systems Readiness (ISR) candidate. Each request will be validated by the ISR team and approved by the Project Officer and PM Intel before solution evaluation begins. The ISR program will use COTS/GOTS/NDI solutions to the greatest extent possible.

(U) ACQUISITION STRATEGY IAS: The IAS program uses existing Government contracts for hardware and software development and integration. The system is comprised primarily of Commercial Off-the-Shelf (COTS) and Government Off-The-Shelf (GOTS) equipment. The IAS FoS utilizes an evolutionary strategy to ensure periodic incorporation of state-of-the-art technology that meets both current and future Marine Corps intelligence requirements while maintaining system readiness and reliability.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	2272: <i>Intel Command and Control (C2) Sys</i>

(U) ACQUISITION STRATEGY RREP: Research, test, and integrate new technology to keep pace with the evolving Marine Corps operational needs. Acquisition will maximize the use of NDI/COTS hardware and software to ensure the supporting units maintain cutting edge technology and collection capabilities.

(U) ACQUISITION STRATEGY CIHEP: The CIHEP Acquisition Strategy is designed to procure, integrate, and field upgrades over a three year period. The purchase and integration of these products provides the CI/HUMINT operator the benefit of recent HW and SW advances along with scalability, portability and interoperability with MAGTF systems. To the maximum extent possible existing contracts and relationships with other entities (within MCSC and otherwise) are leveraged to effect cost savings and capitalize on research and development already being done. CIHEP is designed as a modular system and is horizontally fielded to the CI/HUMINT Companies in blocks as the integration of individual modules are completed. With COTS/GOTS/NDI equipment, all applicable commercial warranties are passed through to the government. Additionally, Field Service Technicians at each of the Marine Expeditionary Forces will maintain, repair and replace suite components.

(U) ACQUISITION STRATEGY IBR: Existing external RDTE contract will be used for Common Interactive Broadcast (CIB) upgrade development and COMSEC upgrade integration for USB ENTR and Joint Tactical Terminal (JTT)- SR to meet DoD and NSA mandates for MIL-STD waveform integration and COMSEC modernization.

(U) ACQUISITION STRATEGY TENCAP: Work will be led in-house. Necessary contractor support will be acquired using existing contracts.

(U) ACQUISITION STRATEGY CESAS: CESAS continues to be a combination of evolutionary and incremental development. Cost savings will be optimized by designed open architecture of systems for rapid insertion of new technology, maintaining integration and production team relationships, leveraging off of cooperative service ventures and technology development.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TENCAP	C/FP	L3 COMM:STAFFORD, VA	28.530	3.564	Dec 2010	-		-		-	0.000	32.094	
TPCS	C/CPFF	SPAWAR:CHARLESTON, SC	6.143	2.520	May 2011	1.000	Mar 2012	1.500	Feb 2012	2.500	0.000	11.163	
TRSS	C/FP	VARIOUS:Not Specified	4.762	2.647	Nov 2010	0.300	Dec 2011	0.400	Dec 2011	0.700	0.000	8.109	
TROJAN SPIRIT	MIPR	CECOM:FT. MONMOUTH, NJ	0.414	0.412	Dec 2010	-		-		-	0.000	0.826	
TCAC	C/CPFF	SPAWAR:CHARLESTON, SC	-	-		0.598	Dec 2011	-		0.598	0.000	0.598	
IAS	C/CPFF	VARIOUS:Not Specified	1.739	-		0.316	Feb 2012	1.400	Jan 2012	1.716	0.000	3.455	
TCAC	Various	MCSC:QUANTICO, VA	-	-		0.761	Apr 2012	-		0.761	0.000	0.761	
CESAS	WR	NRL:ARLINGTON, VA	-	-		-		0.500	Feb 2012	0.500	0.000	0.500	
Subtotal			41.588	9.143		2.975		3.800		6.775	0.000	57.506	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GCCS-I3	Various	VAR:VAR	6.942	1.609	Feb 2011	-		-		-	0.000	8.551	
TRSS	Various	VAR:VAR	11.546	1.350	May 2011	0.302	Feb 2012	-		0.302	0.000	13.198	
MSIDS	Various	VAR:VAR	0.267	0.270	May 2011	0.288	Nov 2011	-		0.288	0.000	0.825	
CIHEP	WR	NPS:MONTEREY, CA	0.253	0.130	May 2011	0.133	Mar 2012	-		0.133	0.000	0.516	
IAS	Various	VAR:VAR	8.923	1.488	Jan 2011	2.232	Jan 2012	-		2.232	0.000	12.643	
TCAC	Various	VAR:VAR	5.274	1.847	Dec 2010	-		-		-	0.000	7.121	
IBR	C/CPFF	MTCSC:STAFFORD, VA	0.919	0.640	May 2011	0.581	Dec 2011	-		0.581	0.000	2.140	
IER	Various	VAR:VAR	1.736	0.197	Jan 2011	2.323	May 2012	-		2.323	0.000	4.256	
JSTARS	C/CPFF	MTCSC:STAFFORD, VA	0.122	0.550	Nov 2010	-		-		-	0.000	0.672	
RREP	Various	NSWC:CRANE, IN	0.467	0.275	Feb 2011	0.240	Jan 2012	-		0.240	0.000	0.982	

UNCLASSIFIED

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RREP	C/CPFF	MTCSC:STAFFORD, VA	0.267	0.476	Dec 2010	0.498	Dec 2011	-		0.498	0.000	1.241	
RREP	Various	MCSC:QUANTICO, VA	0.070	0.070	Dec 2010	0.093	Feb 2012	-		0.093	0.000	0.233	
WFVPS	Various	VAR:VAR	0.226	0.490	May 2011	0.434	Feb 2012	-		0.434	0.000	1.150	
TROJAN SPIRIT	C/CPFF	MTCSC:STAFFORD, VA	-	-		0.431	Dec 2011	-		0.431	0.000	0.431	
TCAC	C/CPFF	MTCSC:STAFFORD, VA	-	-		0.553	Dec 2011	-		0.553	0.000	0.553	
IER	C/CPFF	MTCSC:STAFFORD, VA	-	-		0.200	Mar 2012	-		0.200	0.000	0.200	
Subtotal			37.012	9.392		8.308		-		8.308	0.000	54.712	

Remarks
 IAS - Various CPFF will award as various direct cites and work requests
 TCAC - Various CPFF will award as various direct cites and work requests

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TRSS	Various	MCOTE:QUANTICO, VA	0.552	0.120	Jan 2011	0.100	Jan 2012	0.250	Jan 2012	0.350	0.000	1.022	
TCAC	Various	MCOTE:QUANTICO, VA	0.110	0.057	Dec 2010	0.025	Feb 2012	-		0.025	0.000	0.192	
GCCS-I3	MIPR	JITC:FT HUACHUCA, AZ	0.308	0.104	Mar 2011	-		-		-	0.000	0.412	
TPCS	Various	MCOTE:QUANTICO, VA	1.637	-		0.300	Mar 2012	-		0.300	0.000	1.937	
TPCS	C/CPFF	SPAWAR:CHARLESTON, SC	-	-		1.672	Mar 2012	-		1.672	0.000	1.672	
Subtotal			2.607	0.281		2.097		0.250		2.347	0.000	5.235	

UNCLASSIFIED

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				

Remarks
(TPCS)- MCOTEA to award in various methods, ie. CPFF, FFP
(TPCS)- Various CPFF will award as various direct cites and work requests.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
TPCS	WR	SPAWAR:CHARLESTON, SC	0.150	1.500	Apr 2011	0.721	Feb 2012	-		0.721	0.000	2.371		
Subtotal			0.150	1.500		0.721		-		0.721	0.000	2.371		

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			81.357	20.316		14.101		4.050		18.151	0.000	119.824	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

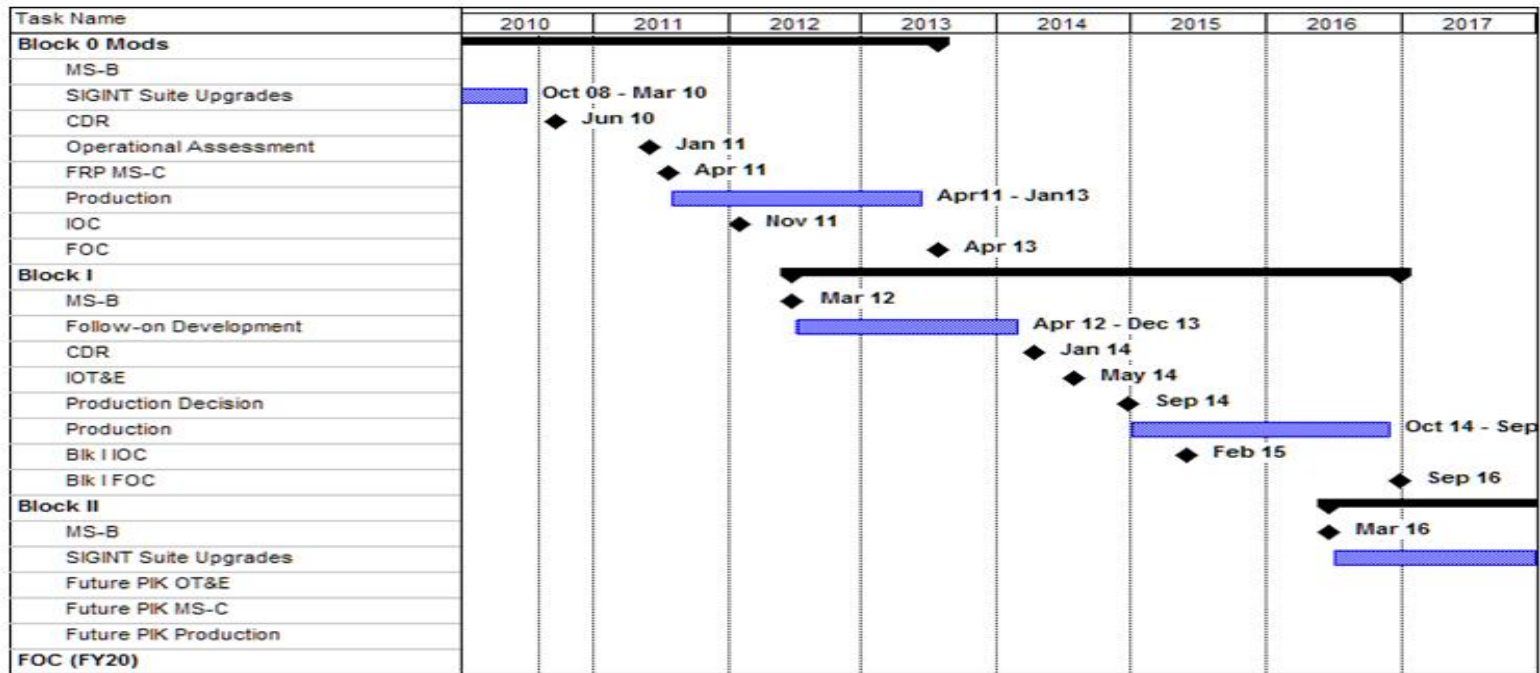
PE 0206625M: USMC Intelligence/Electronics Warfare Sys

PROJECT

2272: Intel Command and Control (C2) Sys



TPCS Program Schedule

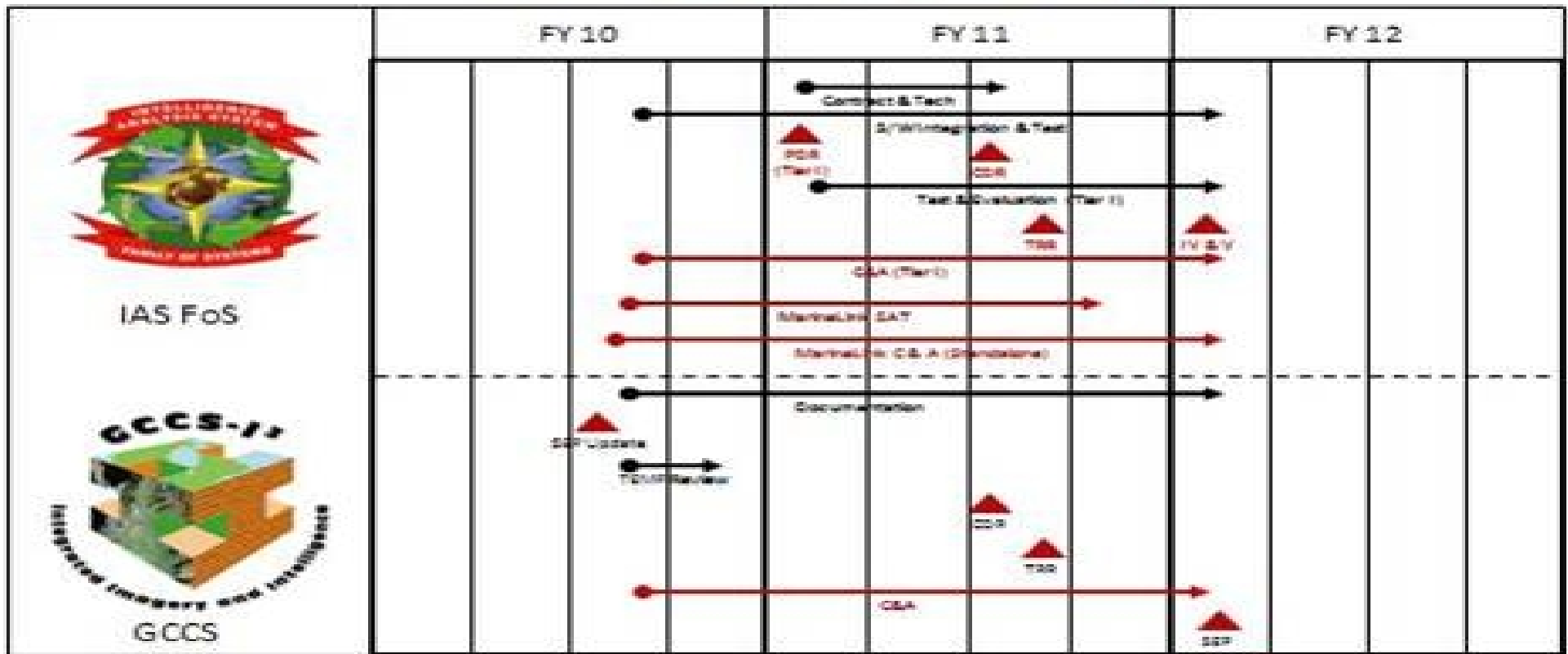


APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0206625M: USMC Intelligence/Electronics Warfare Sys

PROJECT
 2272: Intel Command and Control (C2) Sys

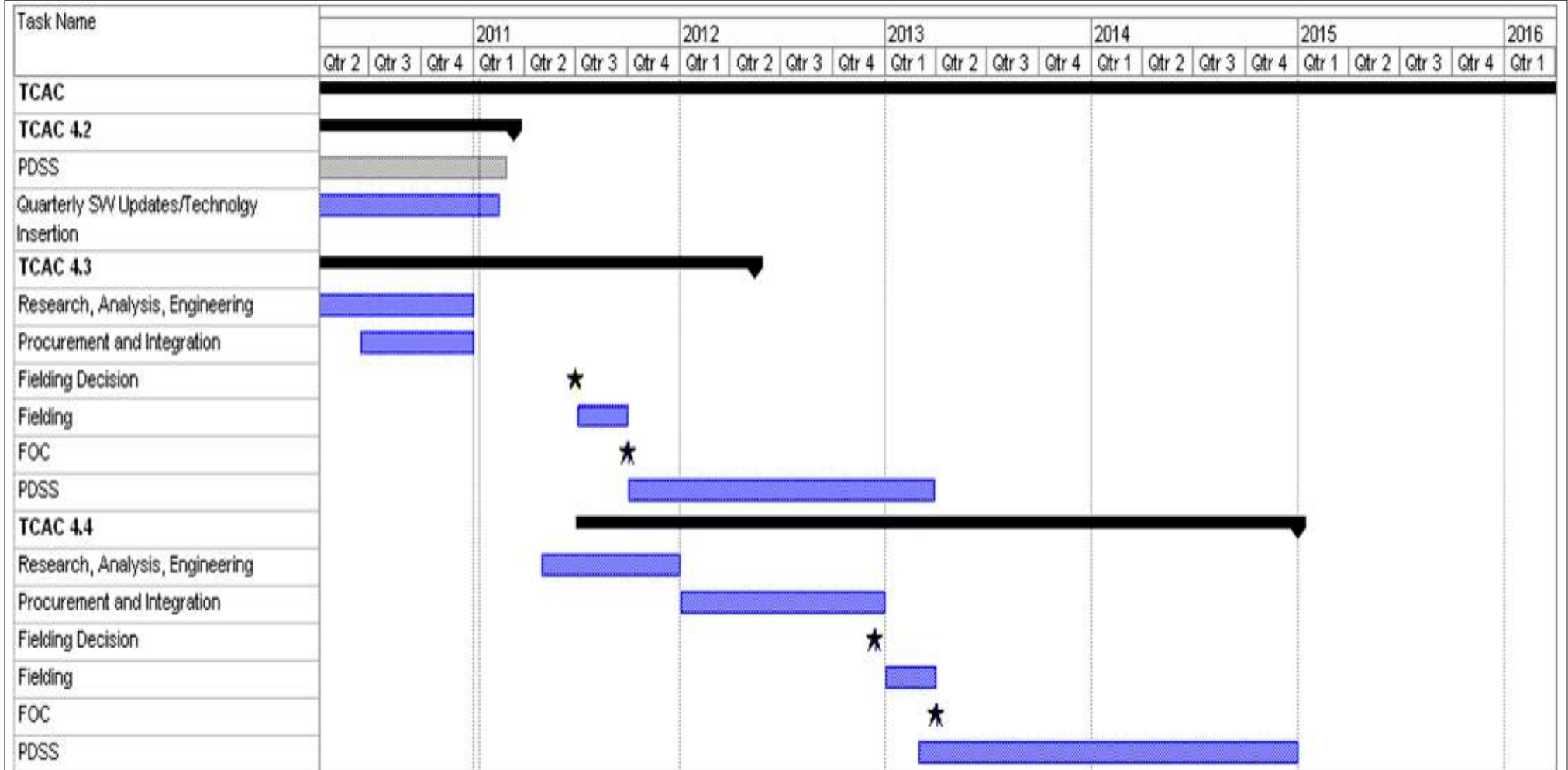
IAS FoS / GCCS Schedule Overview



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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2272				
TPCS MODS SUITES UPGRADE	1	2010	2	2010
TPCS MODS MS -C	3	2011	3	2011
TPCS MODS PROD	3	2011	2	2013
TPCS MODS IOC	1	2012	1	2012
TPCS BLOCK I MS-B	2	2012	2	2012
TPCS BLOCK I IOT&E	3	2014	3	2014
TPCS BLOCK I PRODUCTION	1	2015	4	2016
TCAC 4.2 PDSS	2	2010	2	2011
TCAC 4.2 QTRLY S/W UPDATES/TECHNOLOGY	2	2010	1	2011
TCAC 4.3 RESEARCH, ANALYSIS AND ENG	2	2010	4	2010
TCAC 4.3 FIELDING DECISION	3	2011	3	2011
TCAC 4.3 FIELDING	3	2011	4	2011
TCAC 4.3 FOC	4	2011	4	2011
TCAC 4.3 PDSS	4	2011	1	2013
TCAC 4.4 RESEARCH, ANALYSIS AND ENG	2	2011	4	2011
TCAC 4.4 PRO/INTEGRATION	1	2012	4	2012
TCAC 4.4 FIELDING DECISION	4	2012	4	2012
TCAC 4.4 FOC	1	2012	1	2012
TCAC 4.4 PDSS	1	2013	4	2014
TCAC 4.4 QTRLY S/W UPDATES/TECHNOLOGY	4	2011	4	2012
IAS CONTRACT AND TECH	1	2011	3	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0206625M: <i>USMC Intelligence/Electronics Warfare Sys</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
IAS PDR Tier 1	1	2011	1	2011
IAS CDR	3	2011	3	2011
IAS TEST AND EVALUATION Tier 1	1	2011	1	2012
IAS IV&V	1	2012	1	2012
IAS TRR	3	2011	3	2011
IAS MARINE LINK SAT	3	2010	4	2011
IAS C&A TIER I	3	2010	1	2012
IAS S/W INTE AND TEST	3	2010	1	2012
IAS MARINE LINK SAT C&A	3	2010	1	2012
GCCS DOCUMENTATION	3	2010	1	2012
GCCS SEP UPDATE	3	2010	3	2010
GCCS TEMP REVIEW	3	2010	4	2010
GCCS CDR	3	2011	3	2011
GCCS TRR	3	2011	3	2011
GCCS C&A	3	2010	1	2012
GCCS SEP	1	2012	1	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Air Missiles</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	2.232	0.912	8.765	-	8.765	4.980	0.799	0.815	0.829	Continuing	Continuing
0457: <i>AIM-9X</i>	2.232	0.912	8.765	-	8.765	4.980	0.799	0.815	0.829	Continuing	Continuing

A. Mission Description and Budget Item Justification

The AIM-9X Sidewinder short-range air-to-air missile is a long term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air missile (AMRAAM). Air superiority in the short-range air-to-air missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuze, rocket motor and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design. AIM-9X is a Post Milestone III, Acquisition Category IC joint service program with Navy lead.

The program continues in full rate production (FRP) with Lot 10 contract awarded in June 2010. Beginning with the Lot 9 contract award, the missile will include the preplanned product improvements that resolve critical obsolescence associated with the central processing unit processors and appropriate software updates. This budget line item will fund the development, test and integration of software updates to the missile, insensitive munitions improvements and aircraft platform integration, to ensure these capabilities perform in accordance with established requirements.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	2.288	0.912	0.931	-	0.931
Current President's Budget	2.232	0.912	8.765	-	8.765
Total Adjustments	-0.056	-	7.834	-	7.834
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.034	-			
• Program Adjustments	-	-	7.931	-	7.931
• Section 219 Reprogramming	-0.022	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.097	-	-0.097

Change Summary Explanation

Technical: Not applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0207161N: <i>Tactical Air Missiles</i>

Schedule:

Qualification of the Tactical missile Active Optical Target Detector (AOTD) is complete. Pending successful MS-C decision, the new AOTD will be incorporated into the missile beginning with the Lot 11 (FY11) Low Rate Initial Production contract.

OT-IIIC period has been separated into OT-IIIC(1) Captive Air Training Missile (CATM) operational test and OT-IIIC(2) All Up Round (AUR) operational test, consistent with fielding of the missiles.

CATM OT-IIIC(1) start was revised from 2nd Qtr FY 2010 to 4th Qtr FY 2010 due to delay of test asset availability as a result of Qual test delays. AUR OT-IIIC(2) is planned for 1st Qtr 2012 through 2nd Qtr FY2012, pending successful MS-C approval.

The award date of the Lot 11 contract has been revised From December 2010 to March 2011, due to extended contract negotiations with the prime vendor. The award dates for Lots 12-15 have been revised from December to January each year due to Contractor production planning and scheduling.

Completion of OT-IIID has been extended from 1st Qtr FY 2013 to 2nd Qtr 2013 to accomodate the software development schedule.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Aim Missiles</i>	PROJECT 0457: <i>AIM-9X</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0457: <i>AIM-9X</i>	2.232	0.912	8.765	-	8.765	4.980	0.799	0.815	0.829	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY12 \$4M was moved from WPN to RDT&E to complete software development as part of Milestone C (MS-C) approval.

A. Mission Description and Budget Item Justification

AIM-9X (Sidewinder) is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X short range Air-to-Air missile modification program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the AMRAAM. Air superiority in the short range Air-to-Air Missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuze, rocket motor and warhead).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Continued Test and Evaluation of System	0.015	0.606	4.628
Articles:	0	0	0
Description: Funding required for Test & Evaluation and associated Governmental support required to ensure the AIM-9X missile integration with threshold US Navy aircraft platforms.			
FY 2010 Accomplishments: Completed v9.2 Developmental Test (DT-IIIC), and initiated the first phase of Operational Testing (OT-IIIC(1)), of missile software rehosting into the new AIM-9X CATM components. Initiated Development Testing (DT-IIID) of the follow on missile software (v9.3) for the AIM-9X missile integration.			
FY 2011 Plans: Complete first phase of Operational Testing (OT-IIIC(1)) of missile software rehosting into new AIM-9X components. Complete Development Testing (DT-IIID) and begin Integrated (Development and Operational) Testing (IT-IIID) of the follow on missile software (v9.3) for the AIM-9X missile integration.			
FY 2012 Plans: Complete final phase of Operational Testing (OT-IIIC(2)) of missile software rehosting into new AIM-9X components. Complete Integrated (Development and Operational) Testing (IT-IIID) and begin Operational Testing (OT-IIID) of the follow on missile software (v9.3) for the AIM-9X missile integration.			
Title: Continued Product Development	2.042	0.150	4.000

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Aim Missiles</i>	PROJECT 0457: <i>AIM-9X</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Articles:		0	0	0
<p>Description: Continuation of Primary Hardware Development/Pre-Planned Product Improvement efforts for the AIM-9X fuze. Includes Systems Engineering / Program management, as well as support required to ensure AIM-9X missile integration with threshold US Navy aircraft platforms. Includes efforts to update missile components in order to comply with Insensitive Munitions requirements as established by Joint Requirements Oversight Council memo dated 11 February 2009.</p> <p>FY 2010 Accomplishments: Completed development and qualification of the Active Optical Target Detector (AOTD) Pre-Planned Product Improvement (P3I), also known as the new fuze. Completed v9.2 Software Algorithm and Code Development (CATM only) in support of the AIM-9X missile integration effort. Initiated v9.3 Algorithm Development.</p> <p>FY 2011 Plans: Continued refinement of v9.3 Software Algorithm and Code Development in support of the AIM-9X missile testing and integration effort with threshold US Navy aircraft platforms.</p> <p>FY 2012 Plans: Continued refinement of v9.3 Software Algorithm and Code Development in support of the AIM-9X missile testing and integration effort with threshold US Navy aircraft platforms, as well as study insensitive munitions alternatives and risk reduction methods.</p>				
Title: Continued Transportation & Travel for Program Management		0.175	0.156	0.137
Articles:		0	0	0
<p>Description: Transportation / Travel for AIM-9X effort.</p> <p>FY 2010 Accomplishments: Completed transportation and travel tasks associated with supporting the AIM-9X missile program.</p> <p>FY 2011 Plans: Continued transportation and travel costs associated with supporting the AIM-9X missile program.</p> <p>FY 2012 Plans: Continued transportation and travel costs associated with supporting the AIM-9X missile program.</p>				
Accomplishments/Planned Programs Subtotals		2.232	0.912	8.765

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Aim Missiles</i>	PROJECT 0457: <i>AIM-9X</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• WPN 2209: <i>Sidewinder</i>	53.679	55.216	47.098	0.000	47.098	51.834	61.097	62.074	62.925	707.470	1,422.061
• MPAF 3479: <i>Sidewinder</i>	78.527	64.523	88.769	0.000	88.769	87.785	82.729	83.212	83.626	554.348	1,533.108
• RDTE, AF 41: <i>Sidewinder</i>	5.890	6.040	8.023	0.000	8.023	8.219	9.675	10.710	12.766	0.000	114.173

D. Acquisition Strategy

The Low-Rate Initial Production (LRIP) 4, LOT 4, Firm-Fixed-Price (FFP) contract was awarded in April 2004. ASN(RD&A) approved the Full-Rate Production (FRP) decision in May 2004. FRP 1, LOT 5 contract was awarded November 2004. FRP 1, LOT 5 through FRP 3 LOT 7 contracts were awarded November 2006. Rewards or penalties are provided depending on Raytheon Missile Systems Performance relative to the Procurement Price Commitment Curve (PPCC) for LOTs 5 through 7 (FY 2005 through FY 2007). FRP 4 LOT 8 (FY 2008) contract was re-negotiated outside of the PPCC, and was awarded in January 2008. The FRP 5 LOT 9 (FY 2009) contract was awarded in June 2009, and incorporated the new electronics unit into the Captive Air Training Missile resolving critical obsolescence issues, as well as a low quantity of test articles to prove out the capability and producibility of the AIM-9X missile. The FRP 6 Lot 10 (FY 2010) contract was awarded in June 2010 to procure Block I All Up Round missiles as well as additional tactical test articles.

Following successful AIM-9X Block II Milestone C approval in 3rd quarter FY 2011, the program will enter into LRIP contracts for Block II in FY 2011 and FY 2012, followed by Block II FRP in FY 2013 and beyond. In the event that a Block II program is not approved, the services will continue to procure the less capable equipped missile in Lot 11.

E. Performance Metrics

The AIM-9X Sidewinder program is meeting the cost, schedule, performance, funding and life cycle sustainment in accordance with the Acquisition Program Baseline. Contractor is meeting production schedule.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Air Missiles</i>	PROJECT 0457: <i>AIM-9X</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development (Navy Fuze/OFS)	C/CPIF	Raytheon Missile Systems:Tucson, AZ	3.100	-		-		-		-	Continuing	Continuing	Continuing
Primary Hdw Development (Fuze P3I)	SS/CPFF	Raytheon Missile Systems:Tucson, AZ	14.290	-		-		-		-	0.000	14.290	14.290
Aircraft Integration	C/CPFF	Boeing:St. Louis, MO	6.996	-		-		-		-	Continuing	Continuing	Continuing
Aircraft Integration	WR	NAWC WD:China Lake, CA	4.087	-		-		-		-	Continuing	Continuing	Continuing
Munition Improvement Study	SS/CPFF	Raytheon Missile Systems:Tucson, AZ	-	-		1.000	Mar 2012	-		1.000	1.000	2.000	2.000
Systems Engineering	WR	NAWC WD:China Lake, CA	36.731	0.150	Nov 2010	3.000	Nov 2011	-		3.000	Continuing	Continuing	Continuing
All Prod Dev Cost from program implementation through FY 2002	Various	Not Specified:Not Specified	192.194	-		-		-		-	0.000	192.194	192.194
Subtotal			257.398	0.150		4.000		-		4.000			

Remarks

Total prior years - FY95 and prior under PE 0603715D. FY12 and FY13 funds warhead improvements to comply with insensitive munitions requirements.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev Test & Eval (WD)	WR	NAWC WD:China Lake, CA	29.843	0.071	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Navy Test & Eval (Govt Op Test - WD)	WR	NAWC WD:China Lake, CA	0.279	0.535	Nov 2010	0.615	Nov 2011	-		0.615	Continuing	Continuing	Continuing
Navy Test & Eval (Cont Dev Test)	SS/CPFF	Raytheon Missile Systems:Tucson, AZ	0.210	-		3.998	Mar 2012	-		3.998	0.000	4.208	4.208
Oper Test & Eval (OPTEVFOR)	WR	OPTEVFOR:Norfolk, VA	2.861	-		0.015	Nov 2011	-		0.015	Continuing	Continuing	Continuing
	Various	Various:Various	4.927	-		-		-		-	0.000	4.927	4.927

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Air Missiles</i>	PROJECT 0457: <i>AIM-9X</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
All Prod Dev Cost from Program Implementation thru FY2002													
Subtotal			38.120	0.606		4.628		-		4.628			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Transportation - Material	WR	NAVAIR:Patuxent River, MD	0.070	0.016	Nov 2010	0.016	Nov 2011	-		0.016	Continuing	Continuing	Continuing
Travel - Obligation throughout the year	WR	NAWC AD:Patuxent River, MD	2.272	0.140	Oct 2010	0.121	Oct 2011	-		0.121	Continuing	Continuing	Continuing
Management & Support Services	C/CPFF	Jorge Corporation:Lexington Park, MD	0.507	-		-		-		-	Continuing	Continuing	Continuing
All Prod Dev Cost from Program Implementation thru FY2002	Various	Various:Various	7.526	-		-		-		-	0.000	7.526	7.526
Subtotal			10.375	0.156		0.137		-		0.137			

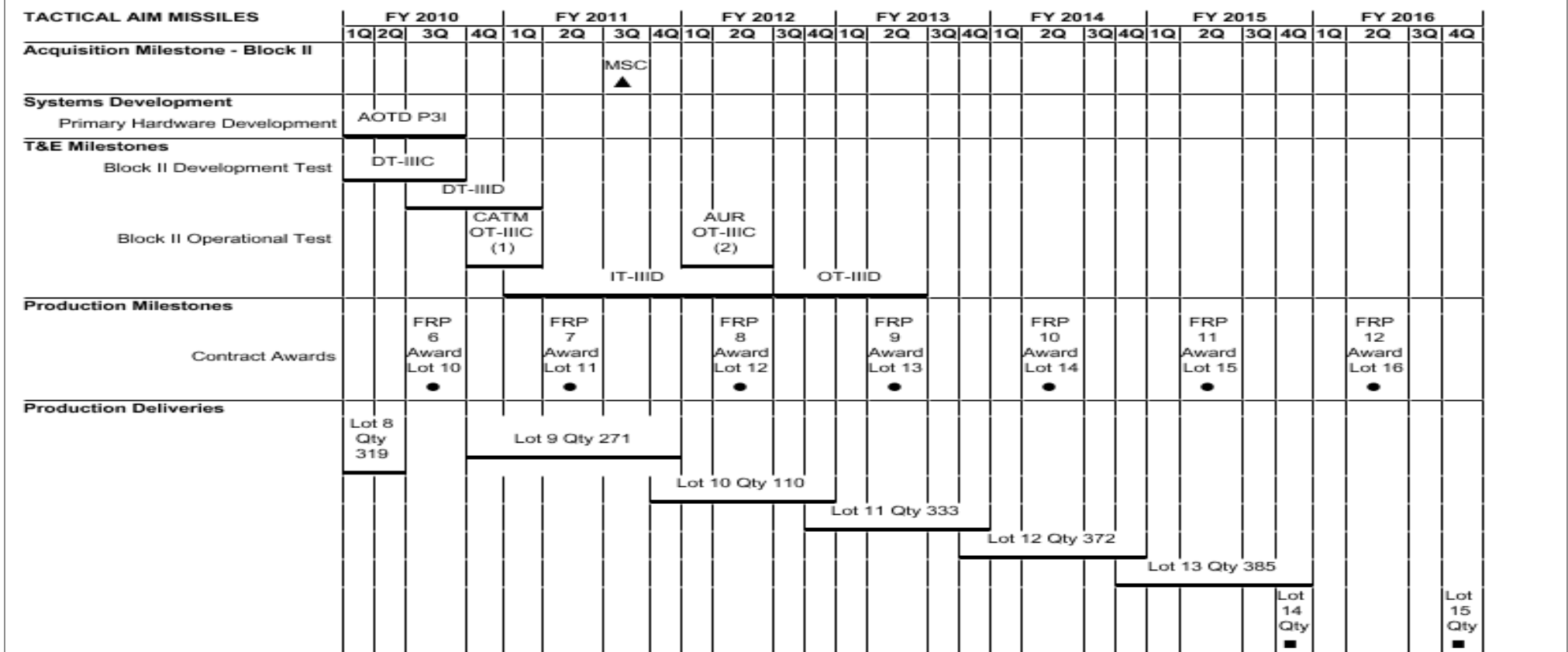
Project Cost Totals			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
			305.893	0.912		8.765		-		8.765			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Aim Missiles</i>	PROJECT 0457: <i>AIM-9X</i>
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2012PB - 0207161N - 0457 The graphic aligns the Production Delivery start and end dates to the beginning and end of each quarter, however, the delivery schedule for Lots 9-15 begin SEP and end AUG each year (12 months).

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Aim Missiles</i>	PROJECT 0457: <i>AIM-9X</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
TACTICAL AIM MISSILES				
Acquisition Milestone - Block II: Milestone C - Block 2	3	2011	3	2011
Systems Development: Primary Hardware Development: AOTD P3I	1	2010	3	2010
T&E Milestones: Block II Development Test: Block II Development Test (DT-IIIC)	1	2010	3	2010
T&E Milestones: Block II Development Test: Block II v9.3 Development Test (DT-IIID)	3	2010	1	2011
T&E Milestones: Block II Operational Test: Block II Operational Test CATM (OT-IIIC) (1)	4	2010	1	2011
T&E Milestones: Block II Operational Test: Block II Operational Test AUR (OT-IIIC)(2)	1	2012	2	2012
T&E Milestones: Block II Operational Test: Block II v9.3 Integrated Development/ Operational Test (IT-IIID)	1	2011	2	2012
T&E Milestones: Block II Operational Test: Block II v9.3 Operational Test (OT-IIID)	3	2012	2	2013
Production Milestones: Contract Awards: Full Rate Production (FRP 6) Award Lot 10	3	2010	3	2010
Production Milestones: Contract Awards: Full Rate Production (FRP 7) Award Lot 11	2	2011	2	2011
Production Milestones: Contract Awards: Full Rate Production (FRP 8) Award Lot 12	2	2012	2	2012
Production Milestones: Contract Awards: Full Rate Production (FRP 9) Award Lot 13	2	2013	2	2013
Production Milestones: Contract Awards: Full Rate Production (FRP 10) Award Lot 14	2	2014	2	2014
Production Milestones: Contract Awards: Full Rate Production (FRP 11) Award Lot 15	2	2015	2	2015
Production Milestones: Contract Awards: Full Rate Production (FRP 12) Award Lot 16	2	2016	2	2016
Production Deliveries: Full Rate Production Deliveries Lot 8	1	2010	2	2010
Production Deliveries: Full Rate Production Deliveries Lot 9	4	2010	4	2011
Production Deliveries: Full Rate Production Deliveries Lot 10	4	2011	4	2012
Production Deliveries: Full Rate Production Deliveries Lot 11	4	2012	4	2013
Production Deliveries: Full Rate Production Deliveries Lot 12	4	2013	4	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207161N: <i>Tactical Aim Missiles</i>	PROJECT 0457: <i>AIM-9X</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Deliveries: Full Rate Production Deliveries Lot 13	4	2014	4	2015
Production Deliveries: Full Rate Production Deliveries Lot 14	4	2015	4	2015
Production Deliveries: Full Rate Production Deliveries Lot 15	4	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	3.623	2.633	2.913	-	2.913	2.942	3.009	3.072	3.126	Continuing	Continuing
0981: <i>AMRAAM</i>	3.623	2.633	2.913	-	2.913	2.942	3.009	3.072	3.126	Continuing	Continuing

A. Mission Description and Budget Item Justification

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	3.589	2.633	2.984	-	2.984
Current President's Budget	3.623	2.633	2.913	-	2.913
Total Adjustments	0.034	-	-0.071	-	-0.071
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	0.117	-			
• SBIR/STTR Transfer	-0.050	-			
• Program Adjustments	-	-	-0.027	-	-0.027
• Section 219 Reprogramming	-0.033	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.044	-	-0.044

Change Summary Explanation

Technical: Not Applicable

Schedule: Delays integrating developmental hardware into flight testing and lower than planned flight test efficiencies extended the completion date for Engineering and Manufacturing Development to September 2009. This resulted in a corresponding change to the forecasted OT start/complete dates. The System DT/OT end date slipped due to flight test execution and resolution of minor system anomalies which resulted in a corresponding slip to the F/A-18 E/F and F/A-18 C/D IOC dates.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0207163N: *AMRAAM*

FY 2011 missile contract award has been moved from March to April per executive service (USAF) schedule decision.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>	PROJECT 0981: <i>AMRAAM</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0981: <i>AMRAAM</i>	3.623	2.633	2.913	-	2.913	2.942	3.009	3.072	3.126	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Continue aircraft integration</p> <p style="text-align: right;">Articles:</p> <p>Description: Continue Aircraft integration activities and test and evaluation for Navy unique requirements.</p> <p>FY 2010 Accomplishments: Continued aircraft integration activities and test and evaluation for Navy unique requirements.</p> <p>FY 2011 Plans: Continue aircraft integration activities and test and evaluation for Navy unique requirements.</p> <p>FY 2012 Plans: Continue aircraft integration activities and test and evaluation for Navy unique requirements.</p>	<p>1.359</p> <p>0</p>	<p>0.873</p> <p>0</p>	<p>0.822</p> <p>0</p>
<p>Title: Continue to identify potential improvements</p> <p style="text-align: right;">Articles:</p> <p>Description: Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems.</p> <p>FY 2010 Accomplishments: Continued engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems. Conducted Operational Flight Program (OFP) efforts.</p> <p>FY 2011 Plans:</p>	<p>0.850</p> <p>0</p>	<p>0.400</p> <p>0</p>	<p>0.404</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>	PROJECT 0981: <i>AMRAAM</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems. Conduct OFP efforts.			
FY 2012 Plans: Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems. Conduct OFP efforts.			
Title: Continue System Improvement Program (SIP) efforts	1.414	1.360	1.687
Articles:	0	0	0
Description: Continue system engineering and test activities in AMRAAM Phase 4 program which includes aircraft integration/ aircraft OFP efforts and Phase 4 test/equipment tasks. Continue system engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements.			
FY 2010 Accomplishments: Continued system engineering and test activities in AMRAAM Phase 4 program which includes aircraft integration/aircraft OFP efforts and Phase 4 test/equipment tasks. Continued system engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements.			
FY 2011 Plans: Continue system engineering and test activities in AMRAAM Phase 4 program which includes aircraft integration/aircraft OFP efforts and Phase 4 test/equipment tasks. Continue system engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements.			
FY 2012 Plans: Continue system engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements.			
Accomplishments/Planned Programs Subtotals	3.623	2.633	2.913

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• WPN/ 220600: <i>AMRAAM</i>	138.079	155.553	188.494	0.000	188.494	227.899	236.919	260.730	264.469	1,694.304	4,748.166
• MPAF/3479: <i>AMRAAM</i>	272.714	355.358	309.561	0.000	309.561	464.837	450.844	448.775	367.163	3,171.156	12,934.708

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>	PROJECT 0981: <i>AMRAAM</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE,AF/673777: <i>AMRAAM</i>	49.763	62.922	77.830	0.000	77.830	95.078	82.456	57.130	34.715	0.000	879.994

D. Acquisition Strategy

Annualized AMRAAM production procurements will continue across the FYDP with periodic pre-planned product improvements and Value Engineering Change Proposals. The Air Dominance Division, previously the 328th Armanent Systems Group, will revisit instituting a Long Term Pricing Agreement upon Raytheon's ability to consistently achieve monthly deliveries of 30 - 35 AIM-120Ds.

E. Performance Metrics

The AIM-120 AMRAAM program is meeting cost, schedule, performance, funding and life cycle sustainment in accordance with the Acquisition Program Baseline. Contractor is meeting the production schedule.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>	PROJECT 0981: <i>AMRAAM</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development (EGLIN))	SS/CPAF	RAYTHEON COMPANY:Tucson AZ	43.242	0.701	Jan 2011	1.014	Jan 2012	-		1.014	4.055	49.012	49.012
Award Fees (EGLIN)	SS/CPAF	Various:Various	6.129	0.124	Jan 2011	0.179	Jan 2012	-		0.179	0.716	7.148	7.148
Primary Hdw Development (DAHLGREN)	WR	NSWC DAHLGREN D C XDM1:Dahlgren VA	0.092	0.025	Nov 2010	0.026	Nov 2011	-		0.026	0.109	0.252	
Primary Hdw Development (NAWCAD)	WR	NAWCAD:Patuxent River MD	0.769	0.221	Nov 2010	0.207	Nov 2011	-		0.207	0.884	2.081	
Primary Hdw Development (NAWCWD)	WR	NAWCWD:China Lake CA	0.627	0.089	Nov 2010	0.086	Nov 2011	-		0.086	0.368	1.170	
Prior Years Hardware Dev	Various	Various:Various	22.670	-		-		-		-	0.000	22.670	
Subtotal			73.529	1.160		1.512		-		1.512	6.132	82.333	

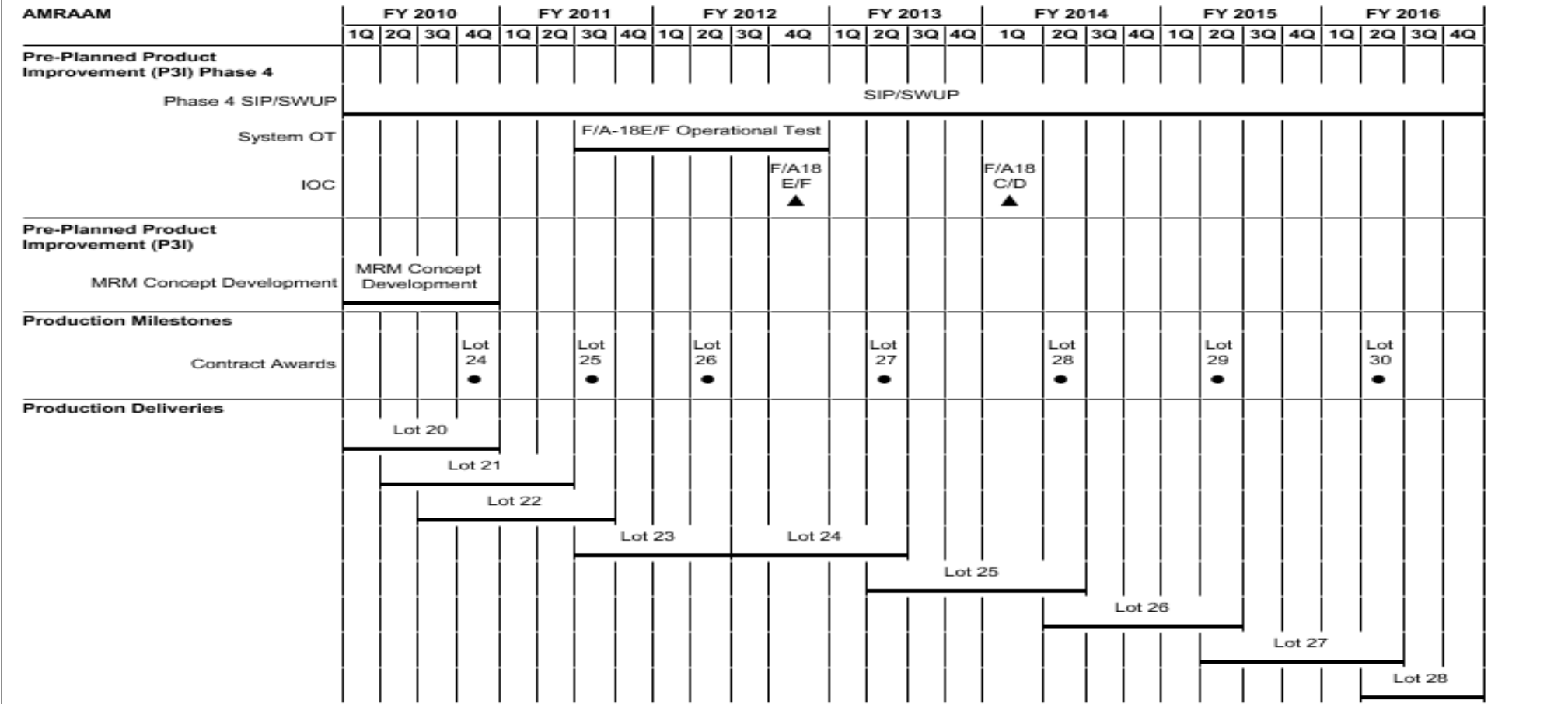
Remarks
Remarks: Percentage of award fees actually awarded in past award fee periods is 15%

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support (NSMA)	WR	NAVY SYST MGT ACT:Arlington VA	2.847	0.200	Mar 2011	0.204	Mar 2012	-		0.204	0.859	4.110	
Studies & Analyses - JHU/APL	SS/FFP	NAVSEASYSKOM:Washington DC	1.060	0.200	May 2011	0.200	May 2012	-		0.200	0.865	2.325	2.325
Prior Years Dev/Acft Integ	Various	Various:Various	17.420	-		-		-		-	0.000	17.420	
Subtotal			21.327	0.400		0.404		-		0.404	1.724	23.855	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>	PROJECT 0981: <i>AMRAAM</i>
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2012PB - 0207163N - 0981

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>	PROJECT 0981: <i>AMRAAM</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AMRAAM				
Pre-Planned Product Improvement (P3I) Phase 4: Phase 4 SIP/SWUP: Phase 4 SIP/SWUP Start (P3I Follow-On)	1	2010	4	2016
Pre-Planned Product Improvement (P3I) Phase 4: System OT: F/A-18E/F Operational Test	3	2011	4	2012
Pre-Planned Product Improvement (P3I) Phase 4: IOC: IOC F/A18 E/F (Threshold)	4	2012	4	2012
Pre-Planned Product Improvement (P3I) Phase 4: IOC: IOC F/A18 C/D	1	2014	1	2014
Pre-Planned Product Improvement (P3I): MRM Concept Development: Medium Range Missile Concept Development	1	2010	4	2010
Production Milestones: Contract Awards: Production Lot 24 Contract Award	4	2010	4	2010
Production Milestones: Contract Awards: Production Lot 25 Contract Award	3	2011	3	2011
Production Milestones: Contract Awards: Production Lot 26 Contract Award	2	2012	2	2012
Production Milestones: Contract Awards: Production Lot 27 Contract Award	2	2013	2	2013
Production Milestones: Contract Awards: Production Lot 28 Contract Award	2	2014	2	2014
Production Milestones: Contract Awards: Production Lot 29 Contract Award	2	2015	2	2015
Production Milestones: Contract Awards: Production Lot 30 Contract Award	2	2016	2	2016
Production Deliveries: Production Deliveries - Lot 20	1	2010	4	2010
Production Deliveries: Production Deliveries - Lot 21	2	2010	2	2011
Production Deliveries: Production Deliveries - Lot 22	3	2010	3	2011
Production Deliveries: Production Deliveries - Lot 23	3	2011	2	2012
Production Deliveries: Production Deliveries - Lot 24	3	2012	2	2013
Production Deliveries: Production Deliveries - Lot 25	2	2013	2	2014
Production Deliveries: Production Deliveries - Lot 26	2	2014	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207163N: <i>AMRAAM</i>	PROJECT 0981: <i>AMRAAM</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Deliveries: Production Deliveries - Lot 27	2	2015	2	2016
Production Deliveries: Production Deliveries - Lot 28	2	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	8.206	3.586	4.108	-	4.108	2.124	-	1.230	-	0.000	19.254
3131: <i>Intratheater Connectors (Concept Studies)</i>	1.745	1.618	-	-	-	-	-	-	-	0.000	3.363
3134: <i>Intratheater Connectors (Contract Design)</i>	6.461	1.968	4.108	-	4.108	2.124	-	1.230	-	0.000	15.891

A. Mission Description and Budget Item Justification

Future joint forces will be responsive, deployable, agile, versatile, lethal, survivable and sustainable. The nation will need lift assets that can provide for assured access, decrease predictability and dwell time, and have the capacity to quickly deliver troops and equipment together in a manner that provides for unit integrity. Joint High Speed Vessel (JHSV) will provide Combatant Commanders high-speed, intra-theater sealift mobility with inherent cargo handling capability and the agility to achieve positional advantage over operational distances. Not limited to major ports, the JHSV will be able to operate in austere port environments.

B. Program Change Summary (\$ in Millions)

	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	8.396	3.586	-	-	-
Current President's Budget	8.206	3.586	4.108	-	4.108
Total Adjustments	-0.190	-	4.108	-	4.108
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.190	-			
• Program Adjustments	-	-	4.153	-	4.153
• Rate/Misc Adjustments	-	-	-0.045	-	-0.045

Change Summary Explanation

Additional funding in FY 2012 required to support operational and developmental testing.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3131: <i>Intratheater Connectors (Concept Studies)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3131: <i>Intratheater Connectors (Concept Studies)</i>	1.745	1.618	-	-	-	-	-	-	-	0.000	3.363
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Future joint forces will be responsive, deployable, agile, versatile, lethal, survivable, and sustainable. The nation will need lift assets that can provide for assured access, decrease predictability and dwell time, and have the capacity to quickly deliver troops and equipment together in a manner that provides for unit integrity. Joint High Speed Vessel (JHSV) will provide combatant commanders high-speed intra-theater sealift mobility with inherent cargo handling capability and the agility to achieve positional advantage over operational distances. Not limited to major ports, the JHSV will be able to operate in austere port environments. The Joint High Speed Vessel is one of three programs in the Department's "Capital Account Pilot Program."

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Accomplishment/Effort/Subtotal Cost	1.745	1.618	-
Articles:	0	0	
Description: R&D efforts for the Joint High Speed Vessel (JHSV) - addressing spiral technology development and risk mitigation efforts through demonstration of tools and monitoring systems for hull fatigue unique to lightweight hull forms. Continuing to conduct R&D in areas involving lightweight aluminum flight decks and safe transport of ammunition and dangerous goods aboard lightweight vessels and production prototypes.			
FY 2010 Accomplishments: Developed the Interoperability Certification Plan (ICEP). Continued efforts in support of DT&E. Continued modeling and simulation in support of LFT&E. Supported Integrated Testing opportunities.			
FY 2011 Plans: Continue efforts in support of DT&E. Continue Modeling and Simulation in support of LFT&E. Support Integrated Testing opportunities.			
Accomplishments/Planned Programs Subtotals	1.745	1.618	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0208058N/3043: <i>SCN/BLI 3043 Joint High Speed Vessel</i>	177.407	180.703	185.106	0.000	185.106	375.879	388.099	397.535	207.360	413.595	2,506.944

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3131: <i>Intratheater Connectors (Concept Studies)</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	<u>FY 2012</u> Base	<u>FY 2012</u> OCO	<u>FY 2012</u> Total	FY 2013	FY 2014	FY 2015	FY 2016	<u>Cost To</u> Complete	Total Cost
• PE 0208058N/L5110: <i>SCN JHSV Outfitting and Post Delivery</i>	0.000	3.426	15.140	0.000	15.140	14.188	18.682	17.373	29.053	119.231	217.093

D. Acquisition Strategy

Two-phased strategy with competitive preliminary design effort leading to downselect to a single contractor. FPI contract is being used for construction.

E. Performance Metrics

Complete the development of plans and efforts associated with the Development Test & Evaluation (DT&E) in order to successfully begin the Initial Operational Test and Evaluation (IOT&E) in FY12.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3131: <i>Intratheater Connectors (Concept Studies)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling & Simulation	C/CPIF	Alion/CSC:VAR	2.117	0.130	Apr 2011	-		-		-	0.000	2.247	
Risk Mitigation Efforts	C/CPIF	Alion:VAR	0.735	0.027	Apr 2011	-		-		-	0.000	0.762	
Subtotal			2.852	0.157		-		-		-	0.000	3.009	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	C/CPAF	Alion/NAVSEALOGCEN:VAR	1.422	-		-		-		-	0.000	1.422	
Technical Data	WR	NSWC-CD/NRL:VAR	1.598	-		-		-		-	0.000	1.598	
Studies & Analyses	WR	NSWC-CD/NATICK/OSD:VAR	1.624	0.100	Mar 2011	-		-		-	0.000	1.724	
Subtotal			4.644	0.100		-		-		-	0.000	4.744	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	COTF/JITC:VAR	0.619	0.075	Apr 2011	-		-		-	0.000	0.694	
Subtotal			0.619	0.075		-		-		-	0.000	0.694	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	CSC/Alion:VAR	3.010	0.390	Mar 2011	-		-		-	0.000	3.400	
	WR		5.851	0.440	Apr 2011	-		-		-	0.000	6.291	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3131: <i>Intratheater Connectors (Concept Studies)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3131				
IOC	2	2013	2	2013
Milestone C/FRP Decision	3	2013	3	2013
Award Second Vessel (NAVY 0901); LLTM-3Q FY 2009; SOC-3Q FY 2010	1	2010	3	2010
Award Third Vessel *Army Funded; LLTM-3Q FY 2009; SOC-3Q FY 2010	1	2010	3	2010
Award Fourth Vessel (NAVY 1001)	4	2010	4	2010
Award Fifth Vessel *Army Funded	4	2010	4	2010
Award Sixth Vessel (NAVY 1101)	3	2011	3	2011
Award Seventh Vessel *Army Funded	3	2011	3	2011
Award Eighth Vessel (NAVY 1201)	2	2012	2	2012
Award Ninth Vessel *Army Funded	2	2012	2	2012
Award Tenth Vessel (NAVY 1301)	2	2013	2	2013
TEMP Update	3	2010	4	2010
TEMP Updates	4	2011	4	2011
DT&E Certification and Assessment Support	1	2010	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3134: <i>Intratheater Connectors (Contract Design)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3134: <i>Intratheater Connectors (Contract Design)</i>	6.461	1.968	4.108	-	4.108	2.124	-	1.230	-	0.000	15.891
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Future joint forces will be responsive, deployable, agile, versatile, lethal, survivable, and sustainable. The nation will need lift assets that can provide for assured access, decrease predictability and dwell time, and have the capacity to quickly deliver troops and equipment together in a manner that provides for unit integrity. Joint High Speed Vessel (JHSV) will provide combatant commanders high-speed intra-theater sealift mobility with inherent cargo handling capability and the agility to achieve positional advantage over operational distances. Not limited to major ports, the JHSV will be able to operate in austere port environments. The Joint High Speed Vessel is one of three programs in the Department's "Capital Account Pilot Program."

The primary objective of the T&E program is to ensure that the JHSV is effective and suitable for its intended mission. The focus will be on reducing test time and cost through an appropriate combination of DT and OT events in order to achieve compatible objectives.

DT&E efforts include M&S, design analysis, inspection, component testing, system level testing, demonstration, ship trials, and PDT&T events. The JHSV T&E Program will coordinate DT&E and OT&E to bring the lead ship to Initial Operational Capability (IOC) in the most efficient and timely manner possible.

Operational testing will include an Operational Assessment (OA), Initial Operational Test and Evaluation (IOT&E) and Follow-on Operational Test and Evaluation (FOT&E). JHSV OT&E will be conducted as Multi-service OT&E events.

The objective of Live Fire Test and Evaluation (LFT&E) is to provide a timely and reasonable assessment of the survivability of the system as it progresses through its development and prior to full-rate production. The program will utilize existing commercial and military technologies to modify commercial high-speed ferry designs for military use.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Intratheater Connectors (Contract Design)	6.461	1.968	4.108
Articles:	0	0	0
FY 2010 Accomplishments: Continued efforts for the Detail Survivability Assessment Report (DSAR). Began test plan development for the Total Ship Survivability Trial (TSST). Supported Integrated Testing opportunities.			
FY 2011 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3134: <i>Intratheater Connectors (Contract Design)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue efforts for the DSAR. Complete test plan development for the TSST. Support Integrated testing opportunities. Begin detailed test plan development for IOT&E.			
<i>FY 2012 Plans:</i> Begin Post Delivery Test & Trials (PDT&T) to evaluate the performance of the JHSV. Conduct IOT&E Phase I as well as the TSST.			
Accomplishments/Planned Programs Subtotals	6.461	1.968	4.108

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0208058N/3043: <i>SCN Joint High Speed Vessel</i>	177.407	180.703	185.106	0.000	185.106	375.879	388.099	397.535	207.360	413.595	2,506.944
• PE 0208058N/5110: <i>SCN Joint High Speed Vessel Outfitting and Post Delivery</i>	0.000	3.426	15.140	0.000	15.140	14.188	18.682	17.373	29.053	119.231	217.093

D. Acquisition Strategy

Two-phased strategy with competitive preliminary design effort leading to downselect to a single contractor. FPI contract type will be used for detail design and construction.

E. Performance Metrics

Complete the test plan development for the Total Ship Survivability Trial (TSST). Complete the efforts and tasks for Operational Test & Evaluation (OT&E) and Live Fire Test & Evaluation (LFT&E) necessary to successfully begin Initial Test and Evaluation (IOT&E) in FY12 and FY13

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3134: <i>Intratheater Connectors (Contract Design)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Ship Integration	C/CPIF	Alion/CSC:VAR	6.638	-		-		-		-	0.000	6.638	
Systems Engineering	C/CPIF	CSC:VAR	3.984	-		-		-		-	0.000	3.984	
Studies & Analysis	C/FP	Austal:Mobile, AL	1.300	-		-		-		-	0.000	1.300	
Subtotal			11.922	-		-		-		-	0.000	11.922	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Support	WR	NSWC-CD:Carderock, MD	2.000	-		-		-		-	0.000	2.000	
Integrated Logistics Support	C/CPIF	Alion:VAR	1.276	-		-		-		-	0.000	1.276	
Configuration/Acquisition Management	C/CPIF	Alion/CSC:VAR	2.773	-		-		-		-	0.000	2.773	
Technical Data	WR	NSWC-CD:Carderock, MD	0.755	-		-		-		-	0.000	0.755	
Subtotal			6.804	-		-		-		-	0.000	6.804	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test and Evaluation	WR	VAR:VAR	-	-		1.433	Jan 2012	-		1.433	0.000	1.433	
Operational Test & Evaluation	WR	COTF/MCOTEA/ ATEC:VAR	2.163	0.881	Apr 2011	2.363	Jan 2012	-		2.363	2.768	8.175	
Live Fire Test & Evaluation	WR	VAR:VAR	3.085	0.802	Mar 2011	0.312	Jan 2012	-		0.312	0.586	4.785	
Subtotal			5.248	1.683		4.108		-		4.108	3.354	14.393	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058N: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT 3134: <i>Intratheater Connectors (Contract Design)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3134				
IOC	2	2013	2	2013
Milestone C/FRP Decision	3	2013	3	2013
Award Second Vessel (NAVY 0901); LLTM-3Q FY 2009; SOC-3Q FY 2010	1	2010	3	2010
Award Third Vessel *Army Funded; LLTM-3Q FT 2009; SOC-3Q FY 2010	1	2010	3	2010
Award Fourth Vessel (NAVY 1001)	4	2010	4	2010
Award Fifth Vessel *Army Funded	4	2010	4	2010
Award Sixth Vessel (NAVY 1101)	3	2011	3	2011
Award Seventh Vessel *Army Funded	3	2011	3	2011
Award Eighth Vessel (NAVY 1201)	2	2012	2	2012
Award Ninth Vessel *Army Funded	2	2012	2	2012
Award Tenth Vessel (NAVY 1301)	2	2013	2	2013
TEMP Update	3	2010	4	2010
TEMP Updates	4	2011	4	2011
IOT&E Phase I	1	2012	4	2012
HERO, HERP & HERF surveys	2	2012	2	2012
IOT&E Phase II	1	2013	4	2013
Final Survivability Assessment	2	2013	4	2013
FOT&E	1	2014	4	2014
Complete Assessment documentation	4	2014	3	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications (Space)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	481.831	422.268	263.712	-	263.712	143.689	0.083	0.224	-	0.000	1,311.807
0728: <i>EHF SATCOM Terminals</i>	79.956	16.145	18.805	-	18.805	22.912	0.083	0.224	-	0.000	138.125
0731: <i>FLTSATCOM</i>	1.049	0.424	0.721	-	0.721	0.730	-	-	-	0.000	2.924
2472: <i>Mobile User Objective Sys (MUOS)</i>	398.317	405.699	244.186	-	244.186	120.047	-	-	-	0.000	1,168.249
9122: <i>Adv Wideband System Integrated Term Prog</i>	2.509	-	-	-	-	-	-	-	-	0.000	2.509

A. Mission Description and Budget Item Justification

The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate/Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS) and Global Broadcast System (GBS). The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the joint AEHF Satellite Communications System and WGS Operational Requirements Documents (ORD). Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms.

The Joint (UHF) MILSATCOM Network Integrated Control System (JMINI CS) is a legacy system that commenced in 1998. JMINI CS is a Navy-led, Joint-interest program providing integrated, dynamic, and centralized control of non-processed UHF MILSATCOM 5/25 kHz Demand Assigned Multiple Access (DAMA) and Demand Assign Single Access (DASA) channels to maximize existing highly sought after SATCOM resources. The system also provides decentralized web-based management of those resources for use as a situational awareness tool for Combatant Commanders, Global SATCOM Support Centers, and Regional SATCOM Support Centers. The system is expected to operate well beyond the original 2015 End of Life (EoL) date to 2025. The JMINI Program of Record (POR) will perform concept development and exploration to identify cost-effective solutions to address multiple life cycle support issues, in order to minimize loss of service to the fleet. The effort will involve evaluation, development, laboratory and integration testing of COTS and GOTS hardware and software to replace obsolete components or subsystems for effectiveness with existing systems.

The Sensitive Compartmented Information Networks (SCI Networks) will provide enabling technology for Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of Special Intelligence (SI)/SCI data through a secure, controllable network interface with the Automated Digital Network System (ADNS) architecture. Specifically, SCI Networks shall ensure the availability of networks in defiance of hostile Information Warfare (IW). Technical, physical, and

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications (Space)</i>
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procedural security will control access, protect Department of Navy (DoN) information technology resources, and ensure continuous operation of the system within an accredited security posture. This network connectivity will expand the capability of cryptologic and intelligence personnel to fully interact with shore based nodes to provide expanding support to their commanders, including situational awareness, indications and warning (I&W), enemy force intentions, intelligence preparation for the Battlefield, and Battle Damage Assessment (BDA). SCI Networks will provide real time indications and warning support to joint and component commanders through reliable high-speed transfer of sensor data and intelligence information. Enhanced interoperability with other Services, agencies, and allies will permit a level of integration of Sensitive Information (SI) operations not achievable with current systems.

The SCI Networks program migrated to the Integrated Shipboard Network System (ISNS) Increment 2/Consolidated Afloat Networks and Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; Common Computing Environment (CCE); Afloat Core Services (ACS) and Multi-Level Security (MLS)/Cross Domain Solutions (CDS).

Maritime Integrated Broadcast Service (MIBS) Project Charter is to deliver Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard United States (US) Navy surface ships and ashore headquarters. It disseminates organically derived data from Navy platforms and shore sites to other theater tactical, operational, and strategic users. MIBS will give the Navy a capability to receive and transmit near real time IBS data, enhancing the Common Operational Picture (COP), to support operations in all warfare areas, including: Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASUW), Undersea Warfare (USW), Electronic Warfare (EW). In order to address IBS terminal inventory shortfalls on AEGIS platforms in the Navy, a software IBS capability Network Enabled IBS (NEIBS) developed by Tactical Exploitation of National Capabilities (TENCAP) will be implemented as a back-fill capability for carriers and large deck amphibious ships that would lose Joint Tactical Terminals (JTT) IBS terminal assets to AEGIS platforms. It was determined that carriers and large deck amphibious ships require over-the-air IBS capability, effectively cancelling NEIBS.

Internet Protocol version 6 (IPv6): Manage and resource/coordinate resourcing of experiments and pilot testing of IPv6 technologies to reduce acquisition and operational risk associated with the IPv6 Transition. Experiments identified are in direct support of and identified in the Navy Technical Transition Strategy for IPv6.

The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2012.

This MUOS Research Development Test & Evaluation, Navy (RDT&E,N) effort supports an On-Orbit Capability (OOC) in fiscal year (FY) 2012 and Full Operational Capability (FOC) in FY 2015.

FY12: MUOS program will complete all remaining testing and preparation efforts to support launch for satellite 2. The MUOS activities planned for the Ground segment will include system software testing and fixes; and installation and testing of the ground site software.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications (Space)</i>
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9122 Advanced Wideband System/Transformational Communications: The Navy Transformational Communications (NTC) terminal program was to provide US Navy ships, submarines and shore sites with access to the Transformational Communications Satellite. SECDEF has recommended this program for termination. As a consequence the basis for the NTC is no longer valid. Navy has closed out the program and properly documented the research and development done to date.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	471.917	422.268	267.740	-	267.740
Current President's Budget	481.831	422.268	263.712	-	263.712
Total Adjustments	9.914	-	-4.028	-	-4.028
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	24.553	-			
• SBIR/STTR Transfer	-14.161	-			
• Program Adjustments	-	-	-3.438	-	-3.438
• Section 219 Reprogramming	-0.419	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.590	-	-0.590
• Congressional General Reductions Adjustments	-0.059	-	-	-	-

Change Summary Explanation

Schedule:

EHF SATCOM Terminals (project 0728)

Milestone C was achieved on 29 July 2010.

Fleet Satellite Comm. (project 0731)

Sensitive Compartmented Information (SCI) Networks: Minor software delivery and testing updates. Events added for migration to Integrated Shipboard Network System (ISNS) Inc 2/Consolidated Afloat Networks and Enterprise Services (CANES) began in FY 2009 to move to a Common Computing Environment (CCE) and Afloat Core Services (ACS). System development for AN/USQ 148A(V)5 and B(V)3 shifts from 4Q/FY09 to 2Q/FY10 with associated Development Test Assist (DTA) from 4Q/FY09 to 3Q/FY10 and equipment delivery from 4Q/FY09 to 4Q/FY10. Added System development for AN/USQ-148F(V)2 with Lab DTA in 2Q/FY11. CANES transition began in FY 2010.

Mobile User Objective System (project 2472)

MUOS schedule reflects adjustments to completion date for the Italy Build 3.1 Ground site in Sicily.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0303109N: <i>Satellite Communications (Space)</i>

Technical:
No significant technical changes.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 0728: <i>EHF SATCOM Terminals</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0728: <i>EHF SATCOM Terminals</i>	79.956	16.145	18.805	-	18.805	22.912	0.083	0.224	-	0.000	138.125
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas, and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate/Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS), and Global Broadcast System (GBS). The new system will equip the warfighters with assured, jam resistant, secure communications as described in both the joint AEHF Satellite Communications System and the WGS Operational Requirement Documents (ORD). Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms.

FY12 Base Funding will be used to complete the integration of the X/Ka and X-band capability. Continue the execution of the NMT test program. Prepare for the program's follow on test and evaluation (FOT&E) of the NMT system for testing with the on-orbit XDR waveform. Resolve system Software (SW) and Hardware (HW) deficiencies within the NMT system to correct issues identified during testing. Incorporate and begin testing the Enhanced Polar System functionality within the NMT system.

The Commercial Broadband Satellite Program (CBSP) will support satellite communications terminals and shore connectivity to the Navy Points of Presence through the use of Commercial off-the-shelf (COTS) terminals, commercial satellite land earth stations, and terrestrial fiber services. Program efforts include investment of emergent technology through studying, development, and testing of insertion feasibility.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: NMT Development	78.956	16.145	18.805
Articles:	0	0	0
Description: Overall program efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of satellite communications-related program insertion. They also include first and second phases of Navy Multiband Terminal (NMT) development for System Design and Development (SDD) for ship, shore, and submarine platforms.			
FY 2010 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 0728: <i>EHF SATCOM Terminals</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>Conducted Developmental Testing (DT), Operational Testing (OT) and Operational Assessment (OA) of Q/Ka-band capabilities and performed associated system modifications as merited by the test results. Continued on-going development of the X/Ka and X-band capability. Obtained Milestone C approval.</p> <p>FY 2011 Plans: Continue the development and integration of X/Ka and submarine X-band capabilities. Conduct X/Ka and X-band Developmental Testing (DT) and Operational Testing (OT). Conduct Q/Ka Design Verification Testing (DVT), X/Ka Design Verification Testing (DVT), Submarine X-band DVT, and Anti-Jam/Low Probability of Intercept Testing. Perform system modifications to correct deficiencies discovered during testing. Continue efforts to incorporate the Enhanced Polar System (EPS) capability.</p> <p>FY 2012 Plans: Complete the development and integration of the X/Ka and X-band capabilities. Continue on going efforts to test the Enhanced Polar System (EPS) functionality within the NMT system. Continue on going testing of X/Ka and X-band capabilities. Resolve hardware and software deficiencies to correct issues identified during testing activities. Prepare for the program's Follow On Test and Evaluation (FOT&E) of the NMT system for testing with the on-orbit Extended Data Rate (XDR) waveform.</p>			
<p>Title: Commercial Broadband Satellite Program</p> <p align="right">Articles:</p>	1.000 0	-	-
<p>FY 2010 Accomplishments: Completed Force Level Variant (FLV) technical evaluation and operational testing of Commercial Off-The-Shelf (COTS) terminals.</p>			
Accomplishments/Planned Programs Subtotals	79.956	16.145	18.805

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/3216: <i>NMT</i>	61.613	161.021	109.022	0.000	109.022	175.163	184.893	231.973	162.318	0.000	1,086.003
• OPN/3215: <i>CBSP</i>	16.474	8.302	13.968	0.000	13.968	15.524	18.053	20.562	25.139	0.000	183.771

D. Acquisition Strategy

Navy Multiband Terminal concept exploration contracts were awarded in FY 2001. Two System Development and Demonstration (SDD) contracts were competitively awarded in FY 2004 for the development and demonstration of four prototype terminals per vendor (eight total). In FY 2007, a down select to Raytheon occurred for the development, demonstration and procurement of 20 Engineering Development Models (EDMs) which will incorporate integrated multi-band capabilities for Q/Ka band, Submarine X-Band, and Ship X/Ka frequency band communication requirements.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0303109N: <i>Satellite Communications (Space)</i>	0728: <i>EHF SATCOM Terminals</i>

CBSP acquisition documentation development and concept studies and analyses will be accomplished using existing contracts.

E. Performance Metrics

The RDT&E goal for the NMT program is to create a military satellite communications system that consolidates capabilities of current and future satellite systems in a single terminal.

CBSP will complete operational testing and technical evaluation on the Force Level Variant (FLV).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (Space)	PROJECT 0728: <i>EHF SATCOM Terminals</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPAF	Various:Various	166.499	-		-		-		-	0.000	166.499	
Hardware Development	C/FFP	Harris:Melbourne, FL	6.136	-		-		-		-	0.000	6.136	
NMT EDM Development	C/CPAF	Raytheon:Marlborough, MA	201.857	7.448	Nov 2010	-		-		-	0.000	209.305	
Hardware Development	WR	SSC PAC:San Diego, CA	1.009	-		-		-		-	0.000	1.009	
Ancillary Hardware Development	C/CPAF	Raytheon:Marlborough, MA	55.923	-		-		-		-	0.000	55.923	
Software Development	WR	NUWC:Newport, RI	8.581	-		-		-		-	0.000	8.581	
Software Development	C/CPAF	Raytheon:Marlborough, MA	37.367	2.174	Nov 2010	4.477	Nov 2011	-		4.477	0.000	44.018	
Systems Engineering	WR	SSC PAC:San Diego, CA	21.843	0.245	Nov 2010	1.500	Nov 2011	-		1.500	0.000	23.588	
Systems Engineering	WR	NUWC:Newport, RI	24.416	0.500	Nov 2010	2.250	Nov 2011	-		2.250	0.000	27.166	
Systems Engineering	C/CPAF	Linqest:San Diego, CA	34.905	-		1.500	Nov 2011	-		1.500	0.000	36.405	
Software Development - ATIP	SS/FPIF	Unknown:Unknown	-	-		2.500	Nov 2011	-		2.500	0.000	2.500	
Subtotal			558.536	10.367		12.227		-		12.227	0.000	581.130	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	SSC PAC:San Diego, CA	11.012	0.400	Nov 2010	-		-		-	0.000	11.412	
Logistics Support 1	WR	SSC PAC:San Diego, CA	3.305	0.250	Nov 2010	-		-		-	0.000	3.555	
Studies & Analysis	WR	NUWC:Newport, RI	6.869	-		-		-		-	0.000	6.869	
Information Assurance 1	WR	SSC PAC:San Diego, CA	3.486	0.400	Nov 2010	-		-		-	0.000	3.886	
Logistics Support 2	WR	SSC PAC:San Diego, CA	-	-		3.163	Nov 2011	-		3.163	0.000	3.163	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (Space)	PROJECT 0728: <i>EHF SATCOM Terminals</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Information Assurance 2	WR	SSC PAC:San Diego, CA	-	-		0.500	Nov 2011	-		0.500	0.000	0.500	
Subtotal			24.672	1.050		3.663		-		3.663	0.000	29.385	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC PAC:San Diego, CA	15.341	2.000	Nov 2010	1.500	Nov 2011	-		1.500	0.000	18.841	
Operational Test & Evaluation 1	WR	COMOPTEVFOR:Not Specified	1.956	1.800	Nov 2010	-		-		-	0.000	3.756	
Operational Test & Evaluation 2	WR	COMOPTEVFOR:Not Specified	-	-		0.500	Nov 2011	-		0.500	0.000	0.500	
Subtotal			17.297	3.800		2.000		-		2.000	0.000	23.097	

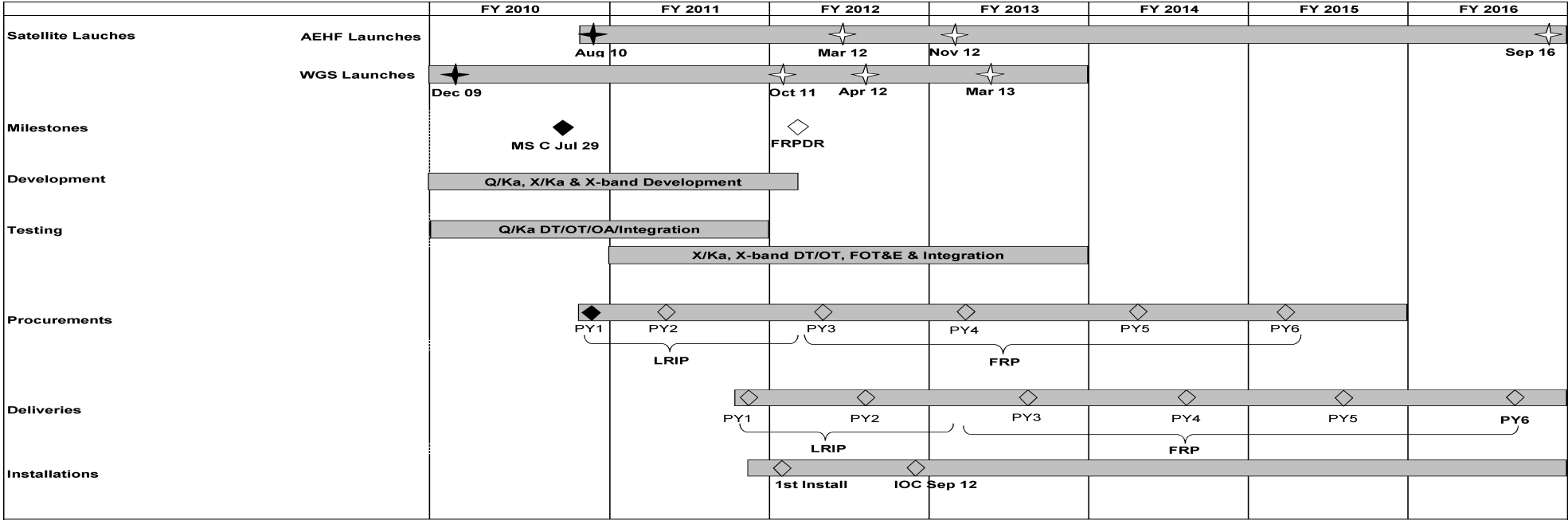
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Management	C/CPAF	BAH:San Diego	10.069	0.125	Nov 2010	0.250	Nov 2011	-		0.250	0.000	10.444	
Program Management	C/CPAF	BAH:San Diego	15.875	0.245	Nov 2010	0.250	Nov 2011	-		0.250	0.000	16.370	
Acquisition Management	C/CPAF	BAH:San Diego	11.197	0.245	Nov 2010	0.300	Nov 2011	-		0.300	0.000	11.742	
Acquisition Management	WR	NCCA:Various	0.653	-		-		-		-	0.000	0.653	
Travel	Reqn	SPAWAR:Various	1.294	0.313	Nov 2010	0.115	Nov 2011	-		0.115	0.000	1.722	
Subtotal			39.088	0.928		0.915		-		0.915	0.000	40.931	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		639.593	16.145		18.805		-		18.805	0.000	674.543	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (Space)	PROJECT 0728: <i>EHF SATCOM Terminals</i>



Note:

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 0728: <i>EHF SATCOM Terminals</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0728				
Q/Ka, X/Ka, & X-band Development	1	2010	1	2012
Q/Ka DT/OT/OA/Integration	1	2010	4	2011
Milestone C	4	2010	4	2010
Low Rate Initial Production (LRIP) Procurement Year 1 (PY1)	4	2010	4	2010
X/Ka, X-band DT/OT, FOT&E & Integration	1	2011	4	2013
Low Rate Initial Production (LRIP) Procurement Year 2 (PY2)	2	2011	2	2011
LRIP PY1 Delivery	4	2011	4	2011
Procurement Year 3 (PY3)	2	2012	2	2012
LRIP PY2 Delivery	3	2012	3	2012
Initial Operational Capability (IOC)	4	2012	4	2012
Procurement Year 4 (PY4)	2	2013	2	2013
Procurement Year 5 (PY5)	2	2014	2	2014
Procurement Year 6 (PY6)	2	2015	2	2015
PY3 Delivery	3	2013	3	2013
PY4 Delivery	3	2014	3	2014
PY5 Delivery	3	2015	3	2015
PY6 Delivery	3	2016	3	2016
1st Install	1	2012	1	2012
AEHF Launch SV-1	4	2010	4	2010
AEHF Launch SV-2	2	2012	2	2012
AEHF Launch SV-3	1	2013	1	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 0728: <i>EHF SATCOM Terminals</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AEHF Launch SV-4	4	2016	4	2016
WGS Launch #3	1	2010	1	2010
WGS Launch #4	1	2012	1	2012
WGS Launch #5	3	2012	3	2012
WGS Launch #6	2	2013	2	2013
FRPDR	1	2012	1	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications (Space)</i>	PROJECT 0731: <i>FLTSATCOM</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0731: <i>FLTSATCOM</i>	1.049	0.424	0.721	-	0.721	0.730	-	-	-	0.000	2.924
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint (UHF) MILSATCOM Network Integrated Control System (JMINI CS) is a legacy system that commenced in 1998. JMINI CS is a Navy-led, Joint-interest program providing integrated, dynamic, and centralized control of non-processed UHF MILSATCOM 5/25 kHz Demand Assigned Multiple Access (DAMA) and Demand Assign Single Access (DASA) channels to maximize existing highly sought after SATCOM resources. The system also provides decentralized web-based management of those resources for use as a situational awareness tool for Combatant Commanders, Global SATCOM Support Centers, and Regional SATCOM Support Centers. The system is expected to operate well beyond the original 2015 End of Life (EoL) date to 2025. The JMINI Program of Record (POR) will perform concept development and exploration to identify cost-effective solutions to address multiple life cycle support issues, in order to minimize loss of service to the fleet. The effort will involve evaluation, development, laboratory and integration testing of COTS and GOTS hardware and software to replace obsolete components or subsystems for effectiveness with existing systems.

The Sensitive Compartmented Information Networks (SCI Networks), is an evolutionary acquisition program designed to provide enabling technology necessary to provide Intelligence, Cryptologic, and Information Warfare Systems with protected and reliable delivery of Special Intelligence (SI)/SCI data through a secure, controllable network interface with the Automated Digital Network System (ADNS) architecture. Specifically, SCI Networks shall ensure the availability of networks in defiance of hostile Information Warfare (IW). Technical, physical, and procedural security will be used to control access, protect Department of Navy (DoN) information technology resources, and ensure continuous operation of the system within an accredited security posture. This network connectivity will greatly expand the capability of cryptologic and intelligence personnel to fully interact with shore based nodes to provide expanding support to their commanders, including situational awareness, indications and warning (I&W), enemy force intentions, intelligence preparation for the Battlefield, and Battle Damage Assessment (BDA). The SCI Networks will provide real time indications and warning support to joint and component commanders through reliable high-speed transfer of sensor data and intelligence information. Enhanced interoperability with other services, agencies, and allies will permit a level of integration of Sensitive Information (SI) operations not achievable with current systems.

The SCI Networks program started migrating to the Integrated Shipboard Network System (ISNS) Increment 2/Consolidated Afloat Networks Enterprise Services (CANES) in FY09. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, and secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video, and Data; Common Computing Environment (CCE); Afloat Core Services (ACS) and Multi-Level Security (MLS)/Cross Domain Solutions (CDS). CANES RDT&E development transition began in FY10.

Maritime Integrated Broadcast Service (MIBS) Project Charter is to deliver Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard United States (US) Navy surface ships and ashore headquarters. It disseminates organically derived data from Navy platforms and shore sites to other theater tactical, operational, and strategic users. MIBS will give the Navy a capability to receive and transmit near real time IBS data, enhancing the Common Operational Picture (COP), to support operations in all warfare areas, including; Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASUW), Undersea Warfare

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications (Space)</i>	PROJECT 0731: <i>FLTSATCOM</i>
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(USW), Electronic Warfare (EW). In order to address IBS terminal inventory shortfalls on AEGIS platforms in the Navy, a software IBS capability Network Enabled IBS (NEIBS) developed by Tactical Exploitation of National Capabilities (TENCAP) will be implemented as a back-fill capability for carriers and large deck amphibious ships that would lose Joint Tactical Terminals (JTT) IBS terminal assets to AEGIS platforms. It was determined that carriers and large deck amphibious ships require over-the-air IBS capability, effectively cancelling NEIBS. FY12 funding will be used to perform Navy integration testing of the AN/USC-62, JTT-Senior upgrade kit, which will enhance existing terminal capability to support the Common Integrated Broadcast (CIB) waveform, Common Message Format (CMF), and the National Security Agency (NSA) mandated Crypto Modernization Initiative (CMI).

Internet Protocol version 6 (IPv6): Manage and resource / coordinate resourcing of experiments and pilot testing of IPv6 technologies to reduce acquisition and operational risk associated with the IPv6 Transition. Experiments identified are in direct support of and identified in the Navy Technical Transition Strategy for IPv6.

FY12 will be utilized for continued Maritime Integrated Broadcast Service (MIBS) and concept development exploration for JMINI.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Maritime Integrated Broadcast Service (MIBS)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Funds continued to support the integration of Network Enabled Integrated Broadcast Service (NEIBS) to receive, process, display IBS data for the Navy. Efforts entailed completing platform integration and developmental testing (DT), incorporate changes in architecture, technical documentation, & training curriculum resulting from DT.</p> <p>FY 2011 Plans: Funds continue to support NEIBS to receive, process, display IBS data for the Navy. Efforts entail conducting DT/Operational Testing (OT), Joint Interoperability Test Command (JITC) interoperability certification and finalizing of all technical documentation.</p> <p>FY 2012 Plans: Funds will support Navy integration testing of the AN/USC-62, Joint Tactical Terminal Senior (JTT-Sr) Upgrade Kit, which will enhance existing terminal capability to support the Common Integrated Broadcast (CIB) waveform, Common Message Format (CMF), and the National Security Agency (NSA) mandated Crypto Modernization Initiative (CMI).</p>	<p>0.200</p> <p>0</p>	<p>0.128</p> <p>0</p>	<p>0.069</p> <p>0</p>
<p>Title: SCI Networks</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Completed development of AN/USQ-148G(V)2 system. Conducted initial AN/USQ-148G(V)2 system testing with Compose 4.0. Program continued transition to CANES. Conducted AN/USQ-148A(V)5 and AN/USQ-148B(V)3 Lab Development Test Assist (DTA).</p> <p>FY 2011 Plans:</p>	<p>0.650</p> <p>0</p>	<p>0.193</p> <p>0</p>	<p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 0731: <i>FLTSATCOM</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Conduct 148G(V)2 with COMPOSE 4.0 Lab Development Test Assis (DTA). Begin 148G(V)2 with COMPOSE 4.0 DT/OT. Conduct Lab Development Test Assist (DTA) of 148F(V)2.			
Title: IPv6 Transition			
Articles:	0.199 0	0.103 0	-
FY 2010 Accomplishments: Managed and coordinated resourcing of experiments and pilot testing of IPv6 technologies. Provided technical leadership for Navy IPv6 transition; developed and implemented the Navy IPv6 migration strategy to achieve transition in accordance with guidance and current mission focus. Provided support & representation to OPNAV, DON CIO, DoD and other service IPTs and working groups. Additionally, provided Navy Programs of Record (POR) support to include software application migration and transition mechanism support.			
FY 2011 Plans: Manage and resource / coordinate resourcing of experiments and pilot testing of IPv6 technologies. The projected work products will include continuation of FY10 efforts. Additionally, Navy programs of record supported will continue to include software application migration and transition mechanism support.			
Title: JMINI			
Articles:	-	-	0.652 0
FY 2012 Plans: Funding will enable concept exploration and development to support product improvement that will result in an extension of the product life cycle, and continuation of service for the warfighter.			
Accomplishments/Planned Programs Subtotals	1.049	0.424	0.721

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN/2900: <i>Maritime Integrated Broadcast Service (MIBS)</i>	0.791	6.909	13.529	0.000	13.529	16.080	12.729	4.453	0.472	Continuing	Continuing
• OPN/3050: <i>Comm Auto - SCI NETWORKS</i>	33.827	24.619	10.082	0.000	10.082	1.737	0.000	0.000	0.000	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (Space)	PROJECT 0731: <i>FLTSATCOM</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/3215: <i>Sat Comm - JMINI</i>	0.000	3.362	1.545	0.000	1.545	0.000	0.000	0.000	0.000	0.000	7.249

D. Acquisition Strategy

JMINI: The Joint (UHF) MILSATCOM Network Integrated Control System (JMINI CS) is an ACAT IV (T) system that is post-FRP. As a legacy system that commenced in 1998, JMINI is expected to operate well beyond the original 2015 End of Life (EoL) date to 2025. The JMINI Program of Record (POR) will evaluate the most cost-effective solutions to address multiple life cycle support issues, in order to minimize loss of service to the fleet. The effort will involve evaluating and conducting laboratory testing and the integration of COTS and GOTS hardware and software for effectiveness with existing systems.

SCI Networks: Sensitive Compartmented Information (SCI) Networks variants are comprised of Commercial Off the Shelf (COTS) equipment and Government Off the Shelf (GOTS) software integrated into SCI Networks designs associated with each class of ship. Procurement equipment buys are done via the Common Afloat Local Area Network (LAN) Infrastructure (CALI) contract vehicle.

IPv6: IPv6 testing and experimentation will be used to manage the risk of transition within existing Programs of Record (PORs). Ultimately, the results of the testing and experimentation will influence the acquisition of IPv6 capable products and minimize risk of transition.

E. Performance Metrics

JMINI: The JMINI POR will perform concept development and exploration of the JMINI 5 KHz and 25 KHz systems, to analyze alternatives for the most advantageous use of new technologies to lengthen the JMINI system life span in order to minimize loss of service to the Fleet.

Sensitive Compartmented Information (SCI) Networks: Develops a consolidated SCI architecture that reduces total ownership cost (TOC) of the afloat SI Local Area Network (LAN) systems and reduces the risk for implementation of CANES by introducing a Common Computing Environment (CCE) and an Afloat Cores Services (ACS) Architecture. SCI Networks RDT&E development began migrating to ISNS Inc 2/Consolidated Afloat Networks and Enterprise Services (CANES) in FY10. ISNS Inc 2/CANES will serve to transition numerous Fleet networks to a single, adaptive, available, secure computing network infrastructure while delivering enhanced technologies in: Integrated Voice, Video and Data; Common Computing Environment (CCE); Service Oriented Architecture (SOA); and Multi-Level Security (MLS)/ Cross Domain Solutions (CDS).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (Space)	PROJECT 0731: <i>FLTSATCOM</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
JMINI Contractor Engineering Support	C/CPFF	TBD:Not Specified	12.188	-		0.461	Nov 2011	-		0.461	0.000	12.649	
JMINI Government Engineering	WR	SSC PAC:San Diego, CA.	0.295	-		0.191	Oct 2011	-		0.191	0.000	0.486	
SCI Networks System Engineering	WR	SSC PAC:San Diego, CA.	2.177	0.023	Jan 2011	-		-		-	0.000	2.200	
SCI Networks System Engineering	C/CPFF	XFEDS:San Diego, CA	0.134	0.086	Nov 2010	-		-		-	0.000	0.220	
Subtotal			14.794	0.109		0.652		-		0.652	0.000	15.555	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IPv6 Support	WR	SSC PAC:San Diego	2.315	0.103	Feb 2011	-		-		-	0.000	2.418	
SCI Networks Development support	C/CPFF	XFEDS:San Diego	0.432	0.017	Nov 2010	-		-		-	0.000	0.449	
SCI Networks ILS support	WR	SSC PAC:San Diego	0.376	0.020	Nov 2010	-		-		-	0.000	0.396	
Subtotal			3.123	0.140		-		-		-	0.000	3.263	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SCI Networks Development Test & Evaluation	WR	SSC PAC/LANT:San Diego/Charleston	1.012	0.011	Dec 2010	-		-		-	0.000	1.023	
SCI Networks Development Test & Evaluation	Reqn	NSMA:VA	0.205	0.011	Dec 2010	-		-		-	0.000	0.216	
MIBS Development Test & Evaluation	WR	SSC PAC:San Diego, CA.	0.200	0.114	Nov 2010	0.050	Nov 2011	-		0.050	0.000	0.364	
Subtotal			1.417	0.136		0.050		-		0.050	0.000	1.603	

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)				PROJECT 2472: <i>Mobile User Objective Sys (MUOS)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2472: <i>Mobile User Objective Sys (MUOS)</i>	398.317	405.699	244.186	-	244.186	120.047	-	-	-	0.000	1,168.249
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2012.

This MUOS Research Development Test & Evaluation, Navy (RDT&E,N) effort supports an On-Orbit Capability (OOC) in fiscal year (FY) 2012 and Full Operational Capability (FOC) in FY 2015.

FY12: MUOS program will complete all remaining testing and preparation efforts to support launch for satellite 2. The MUOS activities planned for the Ground segment will include system software testing and fixes; and installation and testing of the ground site software.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Mobile User Objective Sys (MUOS)	369.243	405.699	244.186
Articles:	0	0	0
FY 2010 Accomplishments:			
Continued work on the assembly, integration and testing of satellite 1, continued fabrication of satellite 2, and developed and tested early versions of the Common Air Interface (CAI) waveform, including spectrum and certification testing. Designed and tested additional engineering changes to the contract baseline primarily due to National Security Agency (NSA) requirements. Continued software development and testing for the integrated ground system, which includes the MUOS CAI waveform, as well as continued fielding and testing of the equipment for the ground infrastructure.			
FY 2011 Plans:			
Complete work on the assembly, integration and testing of satellite 1, satellite 1 shipment and launch vehicle mate operations and launch. Continue work on assembly, integration and testing of satellite 2. Continue development and test of follow-on versions of the CAI waveform. Complete ground systems software development/final acceptance tests. Provide fixes to ground software resulting from system testing. Complete installation and testing of ground software at the Australia site. Begin installation and testing of the final ground software at the Wahiawa and Northwest sites.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 2472: <i>Mobile User Objective Sys (MUOS)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Complete work on the assembly, integration and testing of satellite 2, satellite 2 shipment and launch vehicle mate operations and launch. Provide fixes to ground software resulting from system testing. Complete installation and testing of final ground software at the Wahiawa and Northwest sites. Begin installation and testing of final ground software at the site in Sicily.			
Title: UHF Augmentation (formerly known as UHF Hosted Payload)	29.074	-	-
Articles:	0		
FY 2010 Accomplishments: Consistent with the Mitigation Report delivered to Congress in March 2010, studies have identified options to augment legacy payload capability and accelerate availability of MUOS-compatible terminals. FY10 pursued plans for additional UHF capability and incorporate into the MUOS spacecraft's final assembly and integration for Flight 1 and Flight 2.			
Accomplishments/Planned Programs Subtotals	398.317	405.699	244.186

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• WPN/2433: <i>Mobile User Objective System (MUOS)</i>	509.862	505.734	238.215	0.000	238.215	204.957	22.870	8.894	9.219	Continuing	Continuing

D. Acquisition Strategy

Two Component Advancement Development (CAD) contracts were awarded in Q4 FY 2002. A Risk Reduction & Design Development (RRDD) contract was awarded in September 2004 for the first two satellites, system engineering and associated ground infrastructure. Research Development Test & Evaluation, Navy (RDT&E,N) funds will be used to procure the first two satellites and to prepare the MUOS ground site located in Australia. Weapons Procurement, Navy (WPN) funds will be used to procure the remaining four satellites and launch services for all six satellites.

E. Performance Metrics

Completion of the RDT&E,N funded portion of the contract (CLIN 1) is expected in FY 2013.

The RDT&E,N funding profile from contract award to completion is represented by the following efforts:

FY 2005-2006: System Engineering efforts associated with preparation and completion of the Preliminary Design Review (PDR); and preparation for the Critical Design Review (CDR).

FY 2007-2008: Completion of CDR phase; procure material and begin fabrication of satellites (Qty 2); and begin design and development of entire ground segment.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 2472: <i>Mobile User Objective Sys (MUOS)</i>

FY 2009-2012: Continue assembly, integration and testing, launch and achieve On-Orbit Capability of satellites 1 and 2; develop and test Common Air Interface (CAI) waveform; complete ground system software development/final qualification and acceptance testing. Complete site acceptance test of Wahiawa, Australia, and Northwest ground stations.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (Space)	PROJECT 2472: <i>Mobile User Objective Sys (MUOS)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RRDD AOS Contract	C/CPAF	Lockheed Martin (LM):Sunnyvale, CA	2,763.354	373.976	Nov 2010	231.273	Nov 2011	-		231.273	0.000	3,368.603	Continuing
CE Contracts & Demos	C/FFP	LM / Raytheon / Spec Astro / Boeing:VAR	21.320	-		-		-		-	0.000	21.320	Continuing
CAD Contracts	C/FFP	LM / Raytheon:VAR	105.154	-		-		-		-	0.000	105.154	Continuing
AoA for MUOS	MIPR	Aerospace:El Segundo, CA	2.782	-		-		-		-	0.000	2.782	Continuing
Government Studies	MIPR	Aerospace:El Segundo, CA	0.711	-		-		-		-	0.000	0.711	Continuing
Crypto Procurement	MIPR	NSA:Fort Meade, MD	3.703	-		-		-		-	0.000	3.703	Continuing
UHF Augmentation	C/CPAF	Lockheed Martin (LM):Sunnyvale, CA	29.565	-		-		-		-	0.000	29.565	Continuing
Subtotal			2,926.589	373.976		231.273		-		231.273	0.000	3,531.838	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
UFO TT&C Terminal Upgrades	WR	SSC PAC:San Diego, CA	10.691	-		-		-		-	0.000	10.691	Continuing
Facilities Modifications	WR	SSC LANT:Norfolk, VA	2.537	0.325	Oct 2010	0.217	Apr 2012	-		0.217	0.000	3.079	Continuing
Australian Site Prep	C/FFP	Boeing:Brisbane, AUS	26.272	-		-		-		-	0.000	26.272	Continuing
Leased Lines	C/FFP	Australian Government:Brisbane, AUS	-	-		-		-		-	0.000	0.000	Continuing
Studies & Analyses (EELV)	MIPR	SMC/FMAIC:El Segundo, CA	0.825	-		-		-		-	0.000	0.825	Continuing
ISCS Integration	WR	NAVSOC:Point Mugu, CA	6.964	0.466	Jan 2011	0.238	Apr 2012	-		0.238	0.000	7.668	Continuing
Narrowband SATCOM SE Group (NSSEG) - MUOS N2N	WR	SSC LANT:Charleston, SC	1.246	0.623	Jan 2011	-		-		-	0.000	1.869	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (Space)	PROJECT 2472: <i>Mobile User Objective Sys (MUOS)</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Subtotal			48.535	1.414		0.455		-		0.455	0.000	50.404		

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Developmental Test & Evaluation	WR	JITC:Fort Huachuca, AZ	7.199	-		4.029	Jan 2012	-		4.029	0.000	11.228		
Operational Test & Evaluation	WR	OPTEVFOR:Norfolk, VA	2.974	0.701	Oct 2010	2.000	Jan 2012	-		2.000	0.000	5.675		
Subtotal			10.173	0.701		6.029		-		6.029	0.000	16.903		

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Contractor Engineering Support	C/CPAF	Accenture:San Diego, CA	125.948	23.378	Nov 2010	-		-		-	0.000	149.326		
Contractor Engineering Support - FY2012	C/CPAF	Unknown:Unknown	-	-		3.684	Nov 2011	-		3.684	0.000	3.684	Continuing	
Government Engineering	WR	SSC PAC:San Diego, CA	28.312	5.141	Mar 2011	1.703	Nov 2011	-		1.703	0.000	35.156		
Program Management Support	C/CPAF	Booz Allen Hamilton:McLean, VA	36.398	0.099	Mar 2011	-		-		-	0.000	36.497		
Program Management Support - FY2012	C/CPAF	Unknown:Unknown	-	-		0.867	Nov 2011	-		0.867	0.000	0.867		
Travel	WR	PMW 146:San Diego, CA	2.420	0.550	Nov 2010	0.175	Nov 2011	-		0.175	0.000	3.145		
Frequency Filing	C/FFP	ITU:Geneva, CH	0.855	0.440	Aug 2011	-		-		-	0.000	1.295		
IPA/ICAT	WR	Aerospace:El Segundo, CA	0.390	-		-		-		-	0.000	0.390		

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

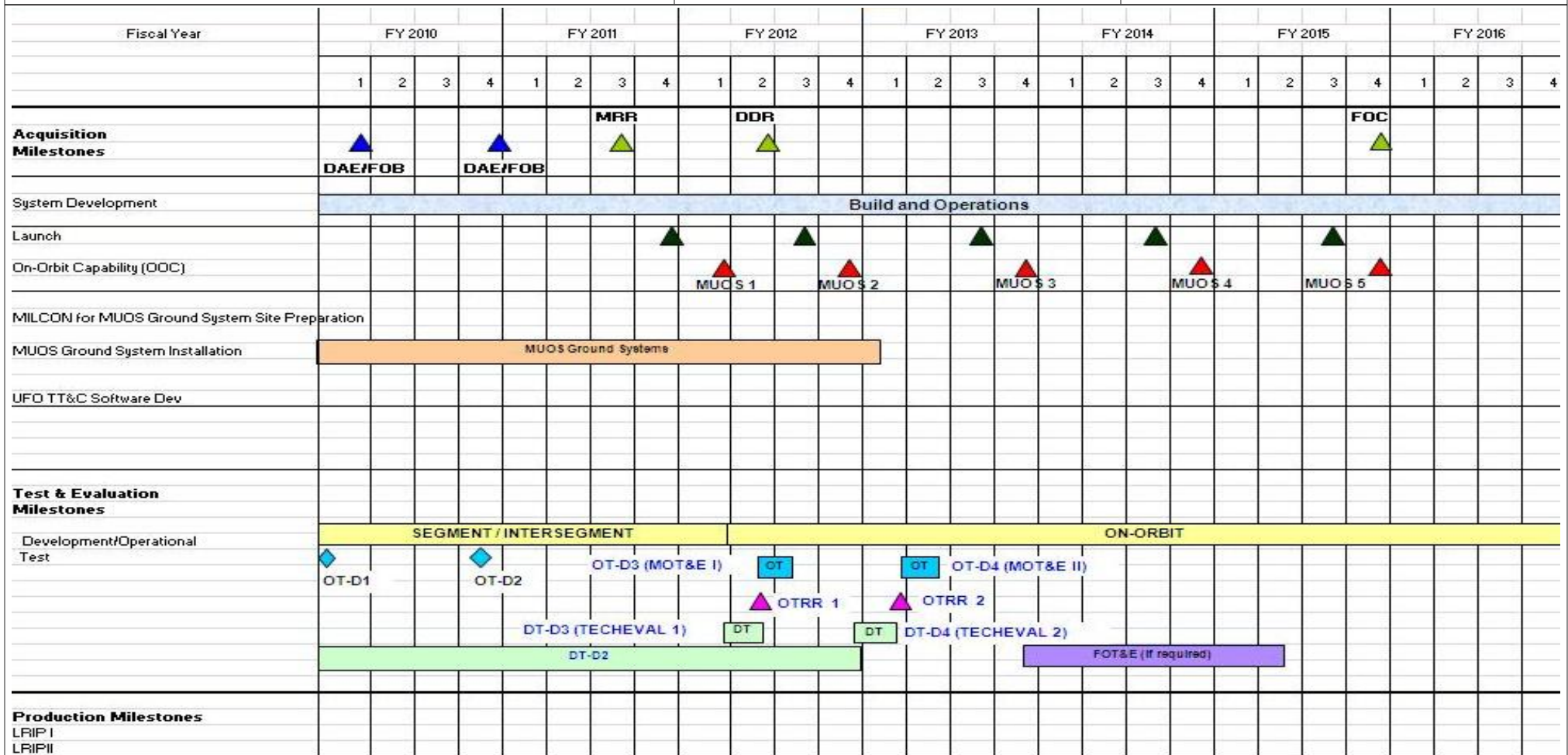
1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303109N: *Satellite Communications (Space)*

PROJECT

2472: *Mobile User Objective Sys (MUOS)*



Note: Acronyms are spelled out on R-4a

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 2472: <i>Mobile User Objective Sys (MUOS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2472				
Segment/Intersegment Testing	1	2010	1	2012
Build and Operations Phase	1	2010	4	2016
Operational Assessment (OT-D1)	1	2010	1	2010
Operational Test Readiness Review (OTRR) #1	2	2012	2	2012
DT-D2	1	2010	4	2012
Defense Acquisition Executive (DAE) Review/Follow-on Buy Decision #1	1	2010	1	2010
DT-D3 Tech Eval 1	1	2012	2	2012
Defense Acquisition Executive (DAE) Review/Follow-on Buy Decision #2	4	2010	4	2010
Mission Readiness Review (MRR)	3	2011	3	2011
Operational Assessment (OT-D2)	4	2010	4	2010
Launch of Satellite #1 (MUOS 1)	4	2011	4	2011
On-Orbit Capability for Satellite #1 (MUOS 1)	1	2012	1	2012
MUOS Ground System Installation	1	2010	1	2013
Operational Test Readiness Review (OTRR) #2	1	2013	1	2013
On-Orbit Testing	1	2012	4	2016
OT-D3 Multi-Service Operational Testing & Evaluation (MOT&E 1)	2	2012	3	2012
OT-D4 Multi-Service Operational Testing & Evaluation (MOT&E 2)	1	2013	2	2013
Launch of Satellite #2 (MUOS 2)	3	2012	3	2012
On-Orbit Capability for Satellite #2 (MUOS 2)	4	2012	4	2012
DT-D4 Tech Eval 2	4	2012	1	2013
Follow-On Test Evaluation (FOT&E)	4	2013	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications</i> (<i>Space</i>)	PROJECT 2472: <i>Mobile User Objective Sys (MUOS)</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deployment Decision Review (DDR)	2	2012	2	2012
Launch of Satellite #3 (MUOS 3)	3	2013	3	2013
On-Orbit Capability for Satellite #3 (MUOS 3)	4	2013	4	2013
Launch of Satellite #4 (MUOS 4)	3	2014	3	2014
On-Orbit Capability for Satellite #4 (MUOS 4)	4	2014	4	2014
Launch of Satellite #5 (MUOS 5)	3	2015	3	2015
On-Orbit Capability for Satellite #5 (MUOS 5)	4	2015	4	2015
Full Operational Capability (FOC)	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303109N: <i>Satellite Communications (Space)</i>	PROJECT 9122: <i>Adv Wideband System Integrated Term Prog</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9122: <i>Adv Wideband System Integrated Term Prog</i>	2.509	-	-	-	-	-	-	-	-	0.000	2.509
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Navy Transformational Communications (NTC) terminal program provides for the development and production of terminals to provide high capacity, reliable, Anti-Jam/Low Probability of Intercept (AJ/LPI) communications capability to the fleet. Terminals will support multiple data streams over Q-band, Ka-band, and X-band. The Secretary of Defense (SECDEF) recommended this program for termination. As a consequence, the basis for the NTC is no longer valid. Navy has closed out the program and properly documented the research and development done to date.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Adv Wideband System Integrated Term Prog	2.509	-	-
Articles:	0		
FY 2010 Accomplishments: The Secretary of Defense (SECDEF) recommended this program for termination. As a consequence the basis for the NTC is no longer valid. Navy utilized funds to close out the program and properly documented the research and development done to date.			
Accomplishments/Planned Programs Subtotals	2.509	-	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Navy has closed out the program and properly documented the research and development done to date.

E. Performance Metrics

N/A.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	46.823	63.563	12.906	-	12.906	15.663	15.125	11.464	13.661	Continuing	Continuing
9C87: <i>CANES Integration</i>	46.823	63.563	12.906	-	12.906	15.663	15.125	11.464	13.661	Continuing	Continuing

Note
FY11 Military Intelligence Program related funding transitions to PE 0303238N beginning in FY11.

A. Mission Description and Budget Item Justification

The CANES program recapitalizes the Navy's afloat network infrastructure (see note below) by consolidation of diverse physical networks and implementation of Afloat Core Services (ACS) and Cross Domain Solutions (CDS). CANES will provide all security domains from Unclassified through Top Secret/Sensitive Compartmented Information (SCI) Common Computing Environment (CCE) for a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aircraft. CANES will enable more efficient data visibility and flow between operational nodes on the Global Information Grid using an open architecture. Additionally, virtualization on the CCE enhances the department's ability to reduce the multitude of standalone command and control systems and applications eliminating the need to field additional or unique hardware (servers and workstations). Through CCE, CDS and virtualization, CANES will improve the Navy's Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) security and agility while reducing total ownership costs.

Note existing afloat networks include: Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), SCI Networks, and Submarine Local Area Network (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of afloat Computer Network Defense (CND).

CANES will field on a rolling four year hardware baseline and a two year software baseline. The CANES vision is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics and training efforts into a unified support structure. The primary goals of the CANES program are to: 1) reduce the number of networks through the use of mature, certified, cross domain technologies; 2) reduce the infrastructure footprint and associated costs for hardware afloat; and 3) provide increased capability to meet current and projected warfighter requirements.

CANES will enable application developers to begin decoupling applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment.

In FY12, the CANES RDT&E investment ramps down with the close out of the Engineering and Manufacturing Development (EMD) phase, transitioning to the Limited Deployment (LD) phase to continue development on additional platform set baselines and ramp up of testing events. Engineering Development Model (EDM) units are installed on Unit level platforms to support Initial Operational Test & Evaluation (IOT&E). Legacy afloat networks and hosted applications fully transition for integration

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i>	PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>
BA 7: <i>Operational Systems Development</i>	

testing as they migrate to CANES baseline. Begin to prepare Enterprise Engineering and Certification (E2C) lab for Submarine Hosted System Integration. Develop Request For Proposal (RFP) for Full Deployment contract and associated source selection activities.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	45.324	63.563	10.270	-	10.270
Current President's Budget	46.823	63.563	12.906	-	12.906
Total Adjustments	1.499	-	2.636	-	2.636
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	1.500	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	2.714	-	2.714
• Rate/Misc Adjustments	-	-	-0.078	-	-0.078
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Change Summary Explanation

Technical: On 29 March 2010, CANES was designated an ACAT IAM pre-Major Automated Information System (MAIS) program. Per FY10 National Defense Authorization Act (NDAA), Low Rate Initial Production (LRIP) is replaced with Limited Deployment (LD) and Full Rate Production (FRP) is replaced with Full Deployment (FD) for MAIS programs.

Schedule: MS B shifted from Q3FY10 to Q2FY11 due to closeout coordination of Preliminary Design Review (PDR) Requests for Action (RFA) for both Engineering and Manufacturing Development (EMD) developers combined with acquisition documentation staffing timelines and alignment with new OSD mandated requirements for milestone events. Execution of the EMD contract was not impacted or affected by the scheduling of MS B. MS B O-IPT was held 1QFY11, and Acquisition Decision Memorandum (ADM) was signed 2QFY11.

MS C planned completion date has shifted from late Q4FY11 to Q2FY12 due to the EMD contract award which re-baselined the program schedule including the lab based Operational Assessment (OA) which is the main entrance criteria for MS C. Initial Operational Capability (IOC): IOC shifted to Q4FY12 aligning with the Joint Staff definition of IOC completion. IOC is achieved when first CANES unit is installed, and maintenance and training support programs are in place. Full Deployment (FD) Contract Award: Shift related to Milestone Decision Authority (MDA) decision to wait until MS C to release FD contract Request for Proposal (RFP).

Funding: A \$2,636K increase in FY12 occurred since PB11. As a result, the program is fully funded to develop required platform sets.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9C87: <i>CANES Integration</i>	46.823	63.563	12.906	-	12.906	15.663	15.125	11.464	13.661	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
FY11 Military Intelligence Program related funding transitions to PE 0303238N beginning in FY11.

A. Mission Description and Budget Item Justification

The CANES program recapitalizes the Navy's afloat network infrastructure (see note below) by consolidation of diverse physical networks and implementation of Afloat Core Services (ACS) and Cross Domain Solutions (CDS). CANES will provide all security domains from Unclassified through Top Secret/Sensitive Compartmented Information (SCI) Common Computing Environment (CCE) for a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aircraft. CANES will enable more efficient data visibility and flow between operational nodes on the Global Information Grid using an open architecture. Additionally, virtualization on the CCE enhances the department's ability to reduce the multitude of standalone command and control systems and applications eliminating the need to field additional or unique hardware (servers and workstations). Through CCE, CDS and virtualization, CANES will improve the Navy's Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) security and agility while reducing total ownership costs.

Note existing afloat networks include: Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), SCI Networks, and Submarine Local Area Network (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of afloat Computer Network Defense (CND)

CANES will enable application developers to begin decoupling applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment. This approach will incrementally deploy and will provide a basis for overall Navy Return on Investment (ROI) over the existing strategies.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: CANES Integration	46.823	63.563	12.906
Articles:	2	2	0
FY 2010 Accomplishments:			
Program/budget transitioned from ISNS Inc 2/CANES to CANES which consolidates afloat networks and enterprise services aboard ships and shore sites. These capabilities include increased availability to mission critical level ships, multiple security enclaves, application hosting, Afloat Core Services (ACS), and collaboration services. Began required statutory and regulatory programmatic activities to support Milestone B (MS B) and Milestone C (MS C) including acquisition documentation and Engineering Manufacturing Development (EMD) efforts. Conducted Developmental Testing (DT) on CANES. Conducted			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Preliminary Design Review (PDR). CANES ACS version 1.1 was delivered to the two system developers for integration with the proposed development baselines. Developed Cost Analysis Requirements Description (CARD) and Life Cycle Cost Estimate (LCCE) for CANES. Awarded system development contract on two system developer baselines. Developed design installation studies and participated in source selection activities. Assessed alternatives for a command and control (C2) path.</p> <p>FY 2011 Plans: Continue CANES statutory and regulatory acquisition documentation to achieve Milestone C (MS C). Complete revised Cost Analysis Requirements Document (CARD) and Life Cycle Cost Estimate (LCCE). Procure two (2) Engineering and Development Model (EDM) units for Initial Operational Test and Evaluation (IOT&E) integration, and regression testing. The EDM units function as pre-production units and require funding for necessary installation design and installation costs. Continue Developmental Testing (DT) and begin Operational Assessment (OA) for Operational Testing (OT) event. Close out EMD contract and complete down-select of the prime system developer to continue into Limited Deployment (LD) phase to develop additional platform set baselines. Develop Request for Proposal for Full Deployment contract and associated source selection activities. Achieve Milestone B (MS B).</p> <p>It is important to note, quantities represent the sites receiving the CANES enclave as also referenced in PE 0303238N.</p> <p>FY 2012 Plans: Complete statutory and regulatory acquisition documentation to achieve CANES MS C. Revise CARD and LCCE in support of Navy's Service Cost Position (SCP) for MS C. Following Operational Testing (OT), preparation begins for IOT&E to include installation of EDM units on Unit level platforms to complete operational assessments for readiness. Also, continue developmental Legacy afloat networks and hosted applications fully transition for integration testing as they migrate to CANES baseline. Begin to prepare Enterprise Engineering and Certification (E2C) lab for Submarine Hosted System Integration. Completion of Source Selection activities to award Full Deployment contract. Continue development of platform set baselines.</p>			
Accomplishments/Planned Programs Subtotals	46.823	63.563	12.906

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/2915: <i>CANES</i>	1.177	34.398	195.141	0.000	195.141	303.318	319.817	307.413	376.359	Continuing	Continuing
• OPN/2925: <i>CANES Intell</i>	0.000	10.432	75.084	0.000	75.084	85.447	63.863	71.297	60.260	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDTE/0303238N: <i>CANES MIP</i>	0.000	8.375	6.602	0.000	6.602	0.000	0.000	0.000	0.000	0.000	14.977

D. Acquisition Strategy

CANES was identified as a ACAT IAM pre-MAIS. Formal program initiation at MS B (2QFY11). The program office is employing a multiple-phase, multiple-award down-select contract strategy to reduce program risks and maintain competition in both design development and production during contract performance. Two competitive contracts have been awarded to design, develop, and deliver all hardware and the associated operating system, virtualization and other commercial software needed to deliver a functional network. As the program accomplishes system development, a down-select will be conducted to choose the best design for Limited Deployment (LD). At the completion of LD, a separate competitive contract will be awarded for Full Deployment (FD) efforts.

E. Performance Metrics

Early RDT&E investment and sustainment of dual design contractors through the development phase will save 10-30% of Total Ownership Cost (TOC) over the life cycle of the program. Cost avoidance throughout the life of the program is based on performance gains that are measured (not quantified) by 1) reducing the number of networks through the use of mature, certified, cross domain technologies; 2) reducing the infrastructure footprint and associated costs for hardware afloat; and 3) providing increased capability to meet current and projected warfighter requirements.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	Lockheed Martin:San Diego, CA	13.000	2.000	Nov 2010	-		-		-	0.000	15.000	15.000
Primary Hardware Development	C/CPFF	Northrop Grumman:Reston, VA	13.000	4.373	Nov 2010	-		-		-	0.000	17.373	17.373
Primary Hardware Development	WR	SPAWAR Systems Center:San Diego, CA	5.424	5.171	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Primary Hardware Development	C/FFP	UNKNOWN:UNKNOWN	-	11.157	Aug 2011	5.500	Nov 2011	-		5.500	0.000	16.657	14.533
Systems Engineering	WR	SPAWAR Systems Center:San Diego, CA and Charleston, SC	7.362	9.202	Dec 2010	2.130	Dec 2011	-		2.130	Continuing	Continuing	Continuing
Systems Engineering	MIPR	US ARMY CECOM (MITRE):San Diego, CA	0.440	0.695	Dec 2010	0.575	Dec 2011	-		0.575	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Lockheed Martin:San Diego, CA	-	3.500	Mar 2011	-		-		-	0.000	3.500	5.000
Systems Engineering	C/CPFF	Northrop Grumman:Reston, VA	-	3.500	Mar 2011	-		-		-	0.000	3.500	5.000
Subtotal			39.226	39.598		8.205		-		8.205			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Design	MIPR	Washington HQ Services:Washington DC	0.650	-		-		-		-	0.000	0.650	0.650
System Installation Design	WR	Puget Sound Naval ShipYard:Bremerton, Washington	-	2.618	May 2011	1.078	Dec 2011	-		1.078	0.000	3.696	3.696
System Installation	WR	SPAWAR Systems Center Atlantic	-	6.936	Jul 2011	0.885	Jan 2012	-		0.885	0.000	7.821	7.821

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
		IMO:North Chareleston, SC													
Subtotal			0.650	9.554			1.963			-		1.963	0.000	12.167	12.167

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	MIPR	JITC:Fairfax, VA	0.100	0.274	Nov 2010	0.312	Dec 2011	-		0.312	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	COMOPTEVFOR:Norfolk, VA and Washington, DC	0.261	0.346	Nov 2010	0.352	Dec 2011	-		0.352	Continuing	Continuing	Continuing
Development Test & Evaluation	WR	Spawar System Center:San Diego, CA	0.650	8.053	Dec 2010	0.608	Dec 2011	-		0.608	Continuing	Continuing	Continuing
Studies & Design	MIPR	USAF:Research Laboratory: UNKNOWN	1.500	-		-		-		-	0.000	1.500	
Subtotal			2.511	8.673			1.272			-		1.272	

Remarks
FY10 Studies & Design effort at USAF: Research Laboratory received 1QFY11 in support of FLTCYBERCOM lifeline study. UNKNOWN will be defined after OMNIBUS contract is awarded.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	SPAWAR Systems Center:San Diego, CA and Charleston, SC	1.466	1.535	Nov 2010	0.800	Dec 2011	-		0.800	Continuing	Continuing	Continuing
Program Management & Acquisition Support	C/CPFF		2.040	2.805	Nov 2010	0.220	Dec 2011	-		0.220	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Systems Research & Application:San Diego, CA											
Financial Management Support	C/CPFF	INDUS Technology:San Diego, CA	0.200	0.300	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Cost Estimation and Analyses	C/CPFF	Booz Allen Hamilton:San Diego, CA	0.390	0.636	Nov 2010	0.246	Dec 2011	-		0.246	Continuing	Continuing	Continuing
Logistics Support	C/CPFF	TCI:San Diego, CA	0.340	0.462	Nov 2010	0.200	Dec 2011	-		0.200	Continuing	Continuing	Continuing
Subtotal			4.436	5.738		1.466		-		1.466			
Project Cost Totals			46.823	63.563		12.906		-		12.906			

Remarks

4QFY11 UNKNOWN will be defined after down select to one contractor at the completion of the Engineering and Manufacturer Development (EMD) competitive contract. This winning prime contractor will be selected for the Limited Deployment (LD) option and to continue development of additional platform set baselines. 4QFY11 funds are paramount to procurement of (2) Engineering Design Model (EDM) units to be installed in 1QFY12 in support of Initial Operational Test & Evaluation (IOT&E), Full Deployment Decision (FDD) and program's ability to meet 5 year requirement from Funds First Obligated to FDD.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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EXHIBIT R4, RDT&E Schedule Profile		DATE: September 2010																																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0303138N - Consolidated Afloat Networks & Enterprise Services (CANES)																								PROJECT NUMBER AND NAME 9C87 - CANES Integration																							
Fiscal Year	2010 (see note 1)				2011				2012				2013				2014				2015				2016																							
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																				
Acquisition Milestones	CANES Transition △				CANES MS B △				CANES MS C △			IOC △				FDD △																																
System Development			PDR △		CDR △											TI - SW																																
			CANES Sys Dev - Surface						CANES Sys Dev - Surface						CANES Sys Dev - Sub						CANES TI 2 - HW/SW Dev																											
Software Development ACS (See Note 2)		ACS v 1.1																																														
Test & Evaluation Milestones					DT										Subs DT						Subs OT																											
Development Test																																																
Operational Test								OT (LD)							IOT&E									TI DT																								
Production Milestones																																																
LD								CANES LD																																								
FD																		CANES FD																														
Deliveries (see note 3)			CANES EDM Unit △ ACS 1.1 △				CANES EQT EDM △				△																				△																	

Notes:
 1/ FY10 efforts funded under PE 0303138N. FY11 and beyond funded under PE 0303138N and PE 0303238N.
 2/ ACS v1.1 software development funded by ISNS.
 3/ EDM Unit included in Limited Deployment (LD) quantities to meet Target Inventory Objective, prior to MS C.
 4/ Milestone B (MS B): Shifted from Q3FY10 to Q2FY11 due to closeout coordination of Preliminary Design Review (PDR) Requests for Action (RFA) for both Engineering and Manufacturing Development (EMD) developers combined with acquisition documentation staffing timelines and alignment with new OSD mandated requirements for milestone events. Execution of the EMD contract was not impacted or affected by the scheduling of MS B. MS B O.IPT was held 1QFY11, and Acquisition Decision Memorandum (ADM) was signed 2QFY11.
 5/ MS C planned completion date has shifted from late Q4FY11 to Q2FY12 due to the EMD contract award which re-baselined the program schedule including the lab based Operational Assessment (OA) which is the main entrance criteria for MS C.
 6/ Initial Operational Capability (IOC): IOC shifted to Q4FY12 aligning with the Joint Staff definition of IOC completion. IOC is achieved when first CANES unit is installed, and maintenance and training support programs are in place.
 7/ Full Deployment (FD) Contract Award: Shift related to Milestone Decision Authority (MDA) decision to wait until MS C to release FD contract Request for Proposal (RFP).
 8/ 4QFY11 program down selects to one developer to continue development of additional platform sets.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9C87				
Acquisition Milestone - CANES Transition	1	2010	1	2010
Acquisition Milestone - CANES Milestone (MS) B	2	2011	2	2011
Acquisition Milestone - CANES MS C	2	2012	2	2012
Acquisition Milestone - Initial Operational Capability (IOC)	4	2012	4	2012
Acquisition Milestone - Full Deployment Decision Review	3	2013	3	2013
System Development - Surface (2 developers)	2	2010	3	2011
System Development - Preliminary Design Review (PDR)	4	2010	4	2010
System Development - Critical Design Review (CDR)	2	2011	2	2011
System Development - Submarines	2	2013	1	2014
System Development - Technical Insertion (TI) Software (SW)	3	2013	1	2014
System Development - Technical Insertion 2 Hardware (HW)/SW Development	2	2015	1	2016
Software Development - ACS 1.1	1	2010	2	2010
Development Test	4	2010	3	2011
Operational Test - Limited Deployment (LD)	4	2011	1	2012
Operational Test - Initial Operatinal Test & Evaluation (IOT&E)	4	2012	2	2013
Development Test - Submarines	3	2013	2	2014
Operational Test - Submarines	4	2014	1	2015
Development Test - TI	4	2015	1	2016
Operational Test - TI	4	2016	4	2016
Production Milestone - Limited Deployment (LD)	4	2011	4	2012
Production Milestone - Full Deployment (FD)	3	2012	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303138N: <i>Consolidated Afloat Network Ent Services(CANES)</i>	PROJECT 9C87: <i>CANES Integration</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries - ACS 1.1	4	2010	4	2010
Deliveries - CANES Engineering Design Model (EDM) Unit	4	2010	4	2010
Deliveries - CANES EDM Unit Environmental Qualification Test (EQT)	4	2011	4	2011
Deliveries - Limited Deployment (LD)	2	2012	2	2013
Deliveries - Full Deployment (FD)	3	2013	4	2016
System Development - Surface (1 developer)	4	2011	1	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	31.422	25.934	25.229	-	25.229	25.902	26.388	26.416	25.801	Continuing	Continuing
0734: <i>Communications Security R&D</i>	24.262	22.921	22.451	-	22.451	23.146	23.551	23.569	22.924	Continuing	Continuing
3230: <i>Information Assurance</i>	2.181	3.013	2.778	-	2.778	2.756	2.837	2.847	2.877	Continuing	Continuing
9999: <i>Congressional Adds</i>	4.979	-	-	-	-	-	-	-	-	0.000	4.979

A. Mission Description and Budget Item Justification

Information Systems Security Program (ISSP) ensures the protection of Navy and joint telecommunications and information systems from exploitation and attack. ISSP is the Navy's implementation of statutory and regulatory requirements specified in Presidential Decision Directive 63, the Computer Security Act of 1987 (Public Law 100-235), Appendix III of Office of Management and Budget (OMB) Circular A-130, and Department of Defense Directive 8500.1. ISSP activities address the triad of defensive information operations defined in Joint Publication 3-13; protection, detection, and reaction. Focused on FORCEnet supporting the mobile forward-deployed subscriber, the Navy's implementation of network-centric warfare places demands upon the ISSP as the number of users dramatically increases and the criticality of their use escalates. Today, the ISSP protects an expanding core service critical to the effective performance of the Navy's mission, supported by Mission Assurance Category 1 systems and crypto modernization requirements with Chairman Joint Chiefs of Staff Instruction 6510.

The interconnectivity of naval networks, connections to the public information infrastructure, and their use in naval and joint war fighting means that FORCEnet is an easier attacked and higher value target. The types of possible attacks continue to grow. In addition to the traditional attacks that involve the theft or eavesdropping of information, Navy information and telecommunications systems face advanced attacks involving malicious changes to critical information, changes to the functioning of critical systems, denial of service (jamming), and the destruction of systems and networks. Since many naval information systems are based on commercially available technologies, an adversary often has access to the very technologies they want to exploit.

The rapid change in the underlying commercial and government information infrastructures makes the security an increasingly complex and dynamic problem. ISSP provides the Navy's war fighter the essential information trust characteristics of availability, confidentiality, integrity, authentication, privacy, and non-repudiation. Information Assurance (IA) technology mix and deployment strategies must evolve quickly to meet the rapidly evolving threats and vulnerabilities.

The ISSP Research Development Test & Evaluation (RDT&E) program provides the Navy with these essential IA elements: (1) assure separation of information levels and user communities, including coalition partners; (2) assurance of the telecommunications infrastructure; (3) assurance of joint user enclaves, using a defense-in-depth architecture; (4) assurance of the computing base and information store; and, (5) supporting assurance technologies, including a Public Key Infrastructure (PKI). ISSP RDT&E program is predictive, adaptive, and coupled to technology by modeling Department of Defense (DoD) and commercial information and telecommunications systems evolution (rather than being one-time developments). The program develops frameworks, architectures, and products based on mission threats, information criticality, exploitation risks, risk management, and integrated joint information system efforts.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>
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All ISSP RDT&E efforts comply with the National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) as implemented through OMB Circular A-119 of February 10, 1998, DoD Instruction 4120.24, Defense Standardization Program (DSP), and DoD Instruction 4120.3-M, Defense Standardization Program Policies and Procedures. The predominant commercial standards bodies in ISSP-related matters include International Organization for Standardization, American National Standards Institute, Institute of Electrical and Electronics Engineers, Internet Engineering Task Force, World Wide Web Consortium, and National Institute of Standards and Technologies. The joint interoperability required in today's telecommunications systems makes standards compliance a must and the ISSP RDT&E program complies with the joint technical architecture. The FORCEnet architecture and standards documents reflect this emphasis on interoperable standards.

The interconnection of FORCEnet into the DoD Global Information Grid (GIG) requires all ISSP RDT&E activities to adopt a minimum standard of "best commercial IA practice." The ISSP RDT&E program examines commercial technologies to determine their fit within Navy architectures, provides feedback to vendors about what the Navy requires, and participates in the standards bodies themselves. When necessary to protect mission critical systems specified in the Clinger/Cohen Act, ISSP RDT&E develops or tailors commercial and government technologies, standards, and processes to meet Navy-unique requirements; prototypes systems or portions of systems and examines their utility in operational Navy settings; and, provides IA expertise and engineering to Navy and joint information system developments. All ISSP technology development efforts solve specific Navy and joint IA problems using techniques that speed transition to procurement as soon as ready.

Maritime Operations Center (MOC) will respond to new technologies and advanced hardware and software tools to support the development and deployment towards automated autonomous computer network operations (CNO) network operations (NETOPS).

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade and integration of existing, operational systems. This includes cryptographic systems required to protect information defined in Title 40 United States Code (USC) Chapter 25 Sec 1452, and the ISSP cryptographic RDT&E program is the implementation of requirements in Executive Orders 12333 and 12958 and National Security Decision Directive 145.

Major focus areas in FY12:

Computer Network Defense (CND) - Continue to ensure that security of Navy networks will meet the mandates and initiatives of DoD for securing the GIG by continued development of system management capabilities to enforce proactive afloat/shore fleet level security policies across the Navy computer network. Continue the development and testing of security situational awareness technologies for knowledge-empowered CND operations for both afloat/shore installations. Continue to develop capabilities into Common Computing Environment (CCE) and Afloat Core Services (ACS) and provide technical guidance to ensure CND requirements are met by Consolidated Afloat Network Enterprise Service (CANES). Continue the development of patch management and host based security agent tools that promote the integration of CND capabilities (monitoring, detecting, analyzing, and responding).

Cryptographic (Crypto)/Crypto Modernization (CM) - Continue the Link-22 Modernized Link Level Communications Security (COMSEC) (MLLC), Very High Frequency (VHF)/Ultra High Frequency (UHF) Wideband Tactical Secure Voice Cryptologic Equipment (VINSON)/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM), and Link-16 CM development efforts, and start the Suite B Navy Implementation, Portable Radio Program (PRP), Demand Assigned Multiple Access (DAMA), Secure Voice Over Internet Protocol (SVoIP) and Navy Crypto Future Requirements development efforts. Develop a crypto modernization plan for transmission security (TRANSEC) with National Security Agency (NSA) and other services.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>
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Electronic Key Management System (EKMS)/Key Management Infrastructure (KMI). Continue EKMS to KMI transition planning. Continue transition strategy and define requirements for incorporation of other KMI roles into Navy architecture. Provide support to KMI Capability Increment 3 kickoff and program implementation. Continue supporting KMI transition working group meetings, developing white papers and support documentation for KMI. Provide requirements definition support of the next generation fill device.

Public Key Infrastructure (PKI) - Continue to develop Secret Internet Protocol Router Network (SIPRNet) PKI solutions, including the SIPR Validation Authority (SVA), and SIPR Hardware Token.

MOC - Assess the cyberspace network operations information dominance roadmap and as is architecture. Investigate government and industry automated autonomous information environment network operations (NETOPS) common operational picture (COP) set of tools for applicability to provide the Maritime Operations Center the ability to maintain Command and Control (C2) of secure Communications Systems (CS) through the ability to analyze and determine optimal method of conducting C2 cyberspace NETOPS. Develop the cyberspace NETOPS to be architecture.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	29.049	25.934	27.660	-	27.660
Current President's Budget	31.422	25.934	25.229	-	25.229
Total Adjustments	2.373	-	-2.431	-	-2.431
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	2.924	-			
• SBIR/STTR Transfer	-0.243	-			
• Program Adjustments	-	-	-2.136	-	-2.136
• Section 219 Reprogramming	-0.285	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.295	-	-0.295
• Congressional General Reductions Adjustments	-0.023	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Universal Description, Discovery and Integration*

	FY 2010	FY 2011
	4.979	-
	4.979	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)

	FY 2010	FY 2011
Congressional Add Subtotals for Project: 9999		
Congressional Add Totals for all Projects	4.979	-

Change Summary Explanation

Schedule:

EKMS TKL production FA Test slipped from 2Q 2010 to 4Q 2011 due to contract delays and NSA testing requirements. No RDT&E funding impact.
 EKMS TKL production FRP decision slipped from 3Q 2010 to 2Q 2012 due to contract delays and NSA strategy requiring First Article (FA) test to be completed first. No RDT&E funding impact.

Crypto - Link -22 MLLC prototype contract award slipped from 1Q 2011 to 2Q 2011 due to delays in source selection process. No risk to FY11 effort.
 Crypto - VACM MS C slipped from 4Q 2012 to 1Q 2013 due to delay in US Air Force source selection.
 Crypto - KW-46M production integration test moved from 4Q 2010 to 2Q 2011 due to delay in NSA providing certified Test key for testing. No RDT&E funding impact.

CND Inc 2 CPD slipped from 3Q 2010 to 4Q 2010 due to delay of mission area determination. No RDT&E funding impact.
 CND Inc 2 DT Assist/OA slipped from 2Q 2011 to 3Q 2011 due to delay in Critical Design Renew (CDR)/Test Readiness Review (TRR) schedule and revised testing schedule from COMOPTEVFOR. No RDT&E funding impact.
 CND Inc 2 Production RFP and contract award milestones removed from schedule. Existing contract strategy was deemed sufficient.

Funding:

(\$-2.186M) from PB11 to PB12 in FY12 reduction reflects ramp down of CND, CMPO and KMI systems engineering efforts.

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0734: <i>Communications Security R&D</i>	24.262	22.921	22.451	-	22.451	23.146	23.551	23.569	22.924	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Information Systems Security Program (ISSP) Research Development Test & Evaluation (RDTE) program provides Information Assurance (IA) solutions for the Navy forward deployed, highly mobile information subscriber. FORCEnet relies upon an assured information infrastructure, and the ISSP RDT&E program architects, engineers, and provides the level of robustness consistent with risks faced. The ISSP addresses engineering design, development, modeling, test, and evaluation for the unique IA challenges associated with the highly mobile, dispersed, bandwidth limited, and forward-tactical connected US Navy communications systems.

ISSP RDT&E works closely with the Navy's Information Operations - Exploit (signals intelligence) and Information Operations - Attack (information warfare) communities. ISSP RDT&E developed systems dynamically change the Navy's current information assurance posture, based upon operational indications and warnings. To ensure interoperability, ISSP RDT&E integrates fully with the FORCEnet and maritime cryptologic architectures. ISSP RDT&E developed systems can provide the trigger for offensive warfare activities.

This project includes a rapidly evolving design and application engineering effort to modernize national security-grade (Type-1) cryptographic equipment and ancillaries with state-of-the-art replacements in order to counter evolving and increasingly sophisticated threats. Communication Security (COMSEC) and Transmission Security (TRANSEC) evolution is from stand-alone dedicated devices to embedded modules incorporating NSA approved cryptographic engines, loaded with the certified algorithms and key, and interconnected via industry-defined interfaces. This includes the DoD Global Information Grid (GIG) capability requirements document for the development of Content Based Encryption continuing through FY2011.

In addition to protecting national security information, ISSP RDT&E must provide enterprise-wide assurance for statutorily protected information under the Privacy Act of 1974, Computer Matching and Privacy Protection Act of 1988, Medical Records Confidentiality Act of 1995, Model State Public Health Privacy Act, 45 Code of Federal Regulation subtitle A sub-chapter C, parts 160- 164, 1999, and the Federal Education Records Privacy Act. ISSP RDT&E efforts must also provide assurance to the broad spectrum of Sensitive-but-Unclassified information such as financial, personnel, contractor proprietary, and procurement sensitive.

The ISSP today includes more than legacy COMSEC and network security technology. IA or defensive information operations exist to counter a wide variety of threats. ISSP activities cover all telecommunications systems, and RDT&E projects must provide protection, detection, and reaction capabilities to the operational commander. ISSP RDT&E provides dynamic risk managed IA solutions to the Navy information infrastructure, not just security devices placed within a network.

Few technology areas change as fast as telecommunications and computers, and IA must keep pace. This results in the continuing need to evaluate, develop, and/or test IA products and approaches. Technology-based efforts include developing or applying: (1) new secure voice prototypes; (2) technology for a new family of programmable COMSEC and TRANSEC modules; (3) security appliances and software for switched and routed networks; (4) technology to interconnect networks

UNCLASSIFIED

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<p>of dissimilar classification, known as Cross Domain Solutions; (5) techniques for assuring code and data residing in and transiting the Navy's computing base and information store; and (6) Public Key Infrastructure (PKI) and associated access control technologies (such as SmartCards and similar security tokens); (7) Electronic Key Management System devices (Simple Key Loaders, COMSEC Material Work Stations (CMWS)) and Key Management Infrastructure equipment (Client Management (MGC)/Advanced Key Processor (AKP) MGC/AKPs, High Assurance Protocol Equipment) and Next Generation devices.</p> <p>The resulting expertise applies to a wide variety of Navy development programs that integrate IA technology. Unlike traditional single-product development programs, the ISSP RDT&E holds a unique Navy-enterprise responsibility.</p> <p>The RDT&E efforts conclude with certified and accredited systems. This requires (1) assured separation of information levels and user communities, including coalition partners; (2) assurance of the telecommunications infrastructure; (3) assurance of joint user enclaves; (4) assurance of the computing base and information store; and, (5) supporting assurance technologies, including PKI and directories. To ensure interoperability and commercial standards compliance, these efforts often encompass the research, selective evaluation, integration, and test of commercial-off-the-shelf/non-developmental item IA security products. For example, evaluation may include defensible network boundary capabilities such as firewalls, secure routers and switches, guards, virtual private networks, and network intrusion prevention systems.</p> <p>The current operating environment has virtually eliminated the traditional distinction between telecommunications and information systems. Because IA is a cradle-to-grave enterprise-wide discipline, this program applies the technology and methodology to systems in development, production and operation, and develops the infrastructure needed to support and evaluate the security of deployed systems. The following describes several major ISSP technology areas:</p> <p>The Navy Secure Voice program assesses technology to provide high grade, secure tactical and strategic voice connectivity.</p> <p>The Cryptographic Modernization program provides high assurance and other cryptographic technologies protecting information and telecommunication systems.</p> <p>The Security Management Infrastructure (SMI) program develops, evaluates, and applies new emerging technology and enhanced capabilities to the Electronic Key Management System/Key Management Infrastructure and other Navy information systems. Additional efforts will focus on the architecture, design, and development of systems to manage the security parameters (i.e., cryptographic keys) necessary to the operation of the systems developed by the secure data and secure voice portions of the ISSP. This includes the application of PKI and Certificate Management Infrastructure technology, and the development of improved techniques for key and certificate management to support emerging, embedded cryptographic technology.</p> <p>The Secure Data program focus on architectures, designing, acquiring, demonstrating and integrating the IA technologies into FORCEnet and the Navy Marine Corps Intranet (NMCI). This portion of the ISSP supports delivery of network security engineering expertise needed to support the NMCI, overseas networks, and the Integrated Shipboard Network Systems, along with constituent systems such as Automated Digital Network System, Global Command and Control System - Maritime. These efforts continue to transition to an open architecture in support of the Consolidated Afloat Networks and Enterprise Services Common Computing Environment (CCE) and Afloat Core Services (ACS). It includes activities to:</p> <p>* Ensure that Navy telecommunications and networks follow a consistent architecture and are protected against denial of service.</p>		

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<ul style="list-style-type: none"> * Ensure that all data within Navy Enterprise is protected in accordance with its classification and mission criticality, as required by law. * Provide the ability to protect from, react to, and restore operations after an intrusion or other catastrophic event. * Support the Navy CND service provider enabler by providing IA response to information operation conditions. * Defend against the unauthorized modification or disclosure of data sent outside enclave boundaries. * Provide a risk-managed means of selectively allowing essential information to flow across the enclave boundary. * Provide strong authentication of users sending or receiving information from outside their enclave. * Defend against the unauthorized use of a host or application, particularly operating systems. * Maintain configuration management of all hosts to track all patches and system configuration changes. * Ensure adequate defenses against subversive acts of trusted people and systems, both internal and external. * Transition to CCE. * Transition to ACS. * Provide a cryptographic (Crypto) infrastructure that supports key, privilege and certificate management; and that enables positive identification of individuals utilizing network services. * Provide an intrusion detection, reporting, analysis, assessment, and response infrastructure that enables rapid detection and reaction to intrusions and other anomalous events, and that enables operational situation awareness. <p>Maritime Operations Center (MOC) networks will operate and share information with multiple partners and in varying circumstances. The MOCs will receive incremental tools toward maintaining a proactive automated autonomous information environment NETOPS Common Operational Picture (COP) set of tools to support Command and Control (C2) of the Communications Systems (CS) through the ability to analyze and determine optimal method of dominating C2 cyberspace operations. This includes CYBER Surveillance, bandwidth monitoring, INTEL situational awareness tool and network health monitoring. NETOPS COP will provide a proactive view and enhanced security tool for use of CYBER network managers. NETOPS COP enhances execution of Open Public Local Access Network during all phases by ensuring validity of the COP, network health, information operations, and battlespace awareness. A combination of software tools, interoperable enabling hardware and processes to monitor and visualize network traffic to provide a locally generated, fused situational awareness picture for battle watch decision-making will be provided. NETOPS COP provides the Commander with near immediate risk assessment, actionable intelligence and immediate mitigation courses of action and attribution of on-going CS Protection events in order to enable the apportionment of forces with exacting control in response to national objectives.</p> <p>FY 12 Highlights for ISSP, Computer Network Defense and Maritime Operations Center (MOC):</p> <p>Computer Network Defense (CND) - Continue to develop and integrate CND capabilities in support of CCE and ACS. Continue the development of User Defined Operational Pictures (UDOP) to enhance Security Information Manager (SIM) tools with adaptive reactive-defense capabilities, improve incident correlation and situation awareness reporting. Begin development of computer-network evaluation capabilities to perform real-time analysis of events. Develop enhancements that advance CND analysis and response capabilities to network threats. Begin development of CND Increment 2 technology insertion cycles.</p>		

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Cryptographic (Crypto)/Crypto Modernization (CM) - Continue the Link-22 Modernized Link Level Communications Security (COMSEC) (MLLC), Very High Frequency (VHF)/Ultra High Frequency (UHF) Wideband Tactical Secure Voice Cryptologic Equipment (VINSON)/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM), and Link-16 CM development efforts, and start the Suite B Navy Implementation, Portable Radio Program (PRP), Key Management Infrastructure (KMI) Awareness, Demand Assigned Multiple Access (DAMA) , Secure Voice Over Internet Protocol (SVoIP), Navy Future Crypto Requirements, Navy Crypto Mod Acceleration with joint services. Coordinate a Crypto Modernization Plan for Transmission Security (TRANSEC) with NSA and other services.

Electronic Key Management System (EKMS) - Finalize any EKMS to KMI transition issues. Migrate COMSEC Material Work Station/Data Management Device (CMWS/DMD) and other Tier 3 devices to the KMI environment. Explore transition planning for CMWS/DMD to operate in the KMI environment.

Key Management Infrastructure (KMI) - Continue transition strategy and define requirements for incorporation of other KMI roles into Navy architecture (i.e. Controlling Authority, Command Authority. Provide support to KMI CI-3 kickoff and program implementation. Providing engineering services to the CRYPTO MOD programs to ensure crypto devices are being designed with KMI capabilities specifically Over the Network Keying and are Network enabled. Begin requirements definition efforts for the Next Generation Fill Device.

PKI - Research and develop tools to support device (non-human) certificates. Design and develop PKI expansion to support GIG identity management and protection requirements onto the Secret Internet Protocol Router Network (SIPRNet).

IA Services (formerly IA Architecture) - Continue to provide security systems engineering support for the development of DoD and Navy IA architectures and the transition of new technologies to address Navy IA challenges. Provide IA risk analysis and recommended risk mitigation strategies for Navy networks and C4I systems.

Maritime Operations Center (MOC) - Respond to new technologies and advanced hardware and software tools to support the development and deployment towards automated autonomous Computer Network Operations (CNO) NETOPS.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Computer Network Defense (CND)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Developed a process to assign asset criticality at the host and application level. Advanced development of proactive insider threat countermeasures and application layer security risk monitoring. Continued to develop UDOP to enhance Security Information Manager (SIM) tools. Continued research to analyze IA capabilities to support Early Adopters systems with selective and autonomic settings on the CND posture as a proactive response to threat attack sensors and vulnerability indications. Addressed the capabilities required to support CND management of EA platforms from a tiered enclave organizational level, network operations intermediate level, and global enterprise management level. Began transition to CANES with CND capabilities</p>	<p>9.955</p> <p>0</p>	<p>8.010</p> <p>0</p>	<p>8.410</p> <p>0</p>

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>in support of CCE and ACS. Progressed towards completing DoD 5000 requirements to achieve MS C and determining developmental , operational and joint interoperability test requirements for CND Increment 2.</p> <p>FY 2011 Plans: Develop Joint Task Force/Global Network Operations Department of Defense (JTF-GNO/DoD) mandated network security tools (assured compliance assessment solution (ACAS), Host-Based Security System version upgrades into the CND Afloat and Shore design to protect against emergent threats. Continue the development of UDOP to enhance SIM tools with adaptive reactive-defense capabilities, improve incident correlation and situation awareness reporting. Continue the development of CND capabilities in support of CCE and ACS. Address CND capabilities required to support IA management of virtual machine - virtual network environments from a tiered enclave organizational level, network operations intermediate level, and global enterprise management level. Develop dynamic security defense capabilities, based on the CND posture as an active response to threat attack sensors and vulnerability indications. Standardize/modularize and collapse shore architecture design . Finalize test requirements for CND Increment 2. Complete DoD 5000 requirements to achieve MS C. Continue lab testing and support OA for CND Increment 2.</p> <p>FY 2012 Plans: Incorporate U.S. Cyber Command (USCYBERCOM)/DoD mandated network security tools into the CND Afloat and Shore Increment 2 design to improve Layered Defense-in-Depth (DiD) capability. Begin development of CND Increment 2 technology insertion cycles (rapid acquisition) to address current and emergent realworld threats, performance improvements, and end-of-life issues to continue meeting Increment 2 Capability Production Document (CPD) performance parameters and address key system attributes (enhanced Situational Awareness/Sensor Grid, Tier 3 SIM, data correlation, integrated DiD, enhanced Command & Control (C2) capabilities). Develop capabilities to perform real-time analysis of events. Continue to develop enhancements that advance CND analysis and response capabilities to network threats. Continue CND capabilities design coordination with CCE and ACS capabilities. Support test readiness reviews and events (Operational Assessment, DT Assist and Initial Operational Test and Evaluation (IOT&E)) for CND Increment 2.</p>				
Title: Crypto/Crypto Modernization		8.024	8.658	7.673
		Articles: 0	0	0
<p>FY 2010 Accomplishments: Continued research, evaluation, and prioritization of cryptographic products such as Demand Assigned Multiple Access (DAMA), portable tactical radios, Single Channel Ground and Airborne Radio System, Integrated Broadcast Service Multi Mission Advanced Tactical Terminal, Telemetry, and various embedded devices. Continued coordination with the Information Systems Security Office, joint services, and the National Security Agency (NSA), including representing the Navy at the Cryptographic Solutions Technical Advisory Group (CSTAG). Continued identifying strategies to reduce the overall crypto inventory within the</p>				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		
<p>DoN to realize long term cost savings. Continued providing consistent Information Assurance (IA) engineering support for the development and integration of Crypto Mod products. Continued to support the on-going Cryptographic Joint Algorithm Integrated Product Team (IPT). Transitioned Secure Voice (SV) RDT&E efforts under Crypto Mod Program Office (CMPO), including SV Small Business Innovative Research (SBIR) oversight, Naval Research Laboratory's (NRL) research into SV emerging technologies and related technical products, and the Navy's participation in the Air Force led VINSON/ANDVT Cryptographic Modernization (VACM) program (providing documentation review, as well as SV technical, acquisition, logistic, test and evaluation support). Continued development of Link 22 Modernized Link Level COMSEC (MLLC), Link 16 Crypto Mod (CM), KW-46M in support of the Fleet Submarine Broadcast System, KG-3X Inc 2 and VACM, while finalizing the development of AN-PYQ-20(v) (c) (formerly KL-51M) efforts in support of the submarine off-line encryption requirement. Continued Crypto voice standardization based on the Variable Data Rate, Voice Compression Algorithm. Supported Assistant Secretary of Defense (ASD) (Networks and Information Integration (NII)) Nuclear Command Control and Communications (NC3) Crypto Modernization.</p> <p>FY 2011 Plans: Continue research, evaluation, and prioritization of cryptographic products. Continue coordination with the Information Systems Security Office, joint services, and the NSA, including representing the Navy at the CSTAG. Continue identifying strategies to reduce the overall crypto inventory within the DoN to realize long term cost savings. Continue to support the on-going Cryptographic Joint Algorithm IPT. Provide consistent IA engineering support for the development and integration of CM products. Continue development for the Link 16 Crypto Mod and Link 22 MLLC, KW-46M. Continue SV RDT&E efforts such as SBIR oversight, and NRL's research into SV emerging technologies and related technical products, support to Air Force lead VACM program and continue supporting ASD (NII) NC3 CM. Initiate major pre-acquisition and development efforts for DAMA, SV Over Internet Protocol (SVoIP) Test & Evaluation (T&E). Coordinate a Crypto Mod plan for Transmission Security (TRANSEC) with NSA and other services.</p> <p>FY 2012 Plans: Continue research, evaluation, and prioritization of cryptographic products. Continue coordination with the Information Systems Security Office and the NSA, including representing the Navy at the CSTAG. Continue identifying strategies to reduce the overall crypto inventory within the DoN to realize long term cost savings. Continue to support the on-going Cryptographic Joint Algorithm IPT. Provide consistent IA engineering support for the development and integration of CM products. Continue development for the Link 16 CM through performing technical analysis of alternatives (AoA) for vendor Type 1 Crypto devices and security architecture implementations, conducting security risk analysis, reviewing security requirement specifications/test plans, developing systems engineering documents into technical documentation to ensure the implementation of robust IA solutions, and providing SME technical support to multi-functional Link-16 CM development teams. Continue development for the Link 22 MLLC through overseeing system integration, verification and validation (IV&V) efforts and acceptance testing, conducting security risk analysis/reduction, interpreting the Information Assurance Security Requirements Directive (IASRD) and providing recommendations</p>		
	FY 2010	FY 2011
		FY 2012

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
towards the NSA certification process. KW-46M work entails integration testing, Emergency Action Message (EAM) and Targeting Change Message (TCM) certifications, and installation into the Common Submarine Radio Room (CSR). Continue SV RDT&E efforts such as SBIR oversight, and NRL's research into SV emerging technologies and related technical products, support to Air Force led VACM program and continue supporting ASD (NII) NC3 CM. Initiate major pre-acquisition and development efforts for DAMA, SVoIP and T&E. Coordinate a Crypto Mod plan for TRANSEC with NSA and other services.				
Title: Key Management Infrastructure (KMI)		2.383	2.549	2.708
		0	0	0
Articles:				
FY 2010 Accomplishments: Continued finalizing the DoN KMI architecture and roll out strategy for deployment. Identified any issues pertaining to transition from EKMS to KMI pertaining to capabilities and connectivity to Naval networks. Provided engineering support in review of all necessary documentation for Navy Independent Logistics Assessment and National Security Agency (NSA) Milestone C Acquisition Decision Memorandum. This determined Navy transition for full rate production within the Navy for Capability Increment (CI-2). Continued engineering efforts for Navy transition and test planning for KMI CI-2 Manager Client/Advanced Key Processor (MGC/AKP). Continued developing Navy implementation plan for KMI CI-2 to support Navy programs of record and EKMS end of life.				
FY 2011 Plans: Provide technical support to National Security Agency for KMI CI-2 Spiral 1 Development Testing and Evaluation, OA, Initial Operational Testing and Evaluation (IOT&E), Milestone C. Continue to support engineering and development efforts for KMI CI-2 and incorporation into Navy architectures and networks. Testing KMI Manager Client/Advanced Key Processors at selected pilot sites in support of OA and IOT&E.				
FY 2012 Plans: Continue transition strategy and define requirements for incorporation of other KMI roles into Navy architecture (i.e., Controlling Authority, Command Authority). Continue supporting KMI transition working group meetings, developing white papers and support documentation for KMI. Migrate COMSEC Material Work Station/Data Management Device and other Tier 3 devices to the KMI environment. Begin support to KMI CI-3 kickoff and program implementation. Provide requirements definition support to the development of the Next Generation Fill Device.				
Title: Public Key Infrastructure (PKI)		0.703	0.769	0.408
		0	0	0
Articles:				
FY 2010 Accomplishments: Initiated security and functionality testing and evaluation of multi-domain tokens, readers and middleware for the Non-Classified Internet Protocol Router (NIPR), Secret Internet Protocol Router (SIPR), and Tactical PKI. Performed research and development				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<p>of solutions to resolve technical challenges and the tools required for continued deployment of Navy, non-Navy, Marine Corps Internet/Cryptographic Log On and Navy Certificate Validation Infrastructure/Online Certificate Status Protocol Afloat. Researched and developed tools to support device (non-human) certificates. Performed security and functionality testing and evaluation of PKI tokens and readers to support Tactical PKI and Homeland Security Presidential Directive-12 (HSPD-12) implementation. Supported systems engineering during the integration process and the analysis/evaluation of new application updates including new Operating Systems (OSs) (Windows and non-Windows) into Navy PKI environments. Provided evaluation of Commercial-Off-The-Shelf (COTS) products that can support coalition information sharing. Initiated test and evaluation of HSPD-12 token and middleware as part of the transition to stronger algorithms. Researched and developed tools to support PKI with Internet Protocol Version 6 and Suite B implementation.</p> <p>FY 2011 Plans: Continue security and functionality testing and evaluation of PKI tokens, readers and middleware for SIPR and Tactical PKI. Research and develop tools to support device (non-human) certificates. Support systems engineering during the integration process and the analysis/evaluation of new application updates including new OS (Windows and non-Windows) into Navy PKI environments. Provide for evaluation of COTS products that can support coalition information sharing. Design and develop PKI expansion to support GIG identity management and protection requirements onto the SIPRNet. Evaluate automated on-line network device (e.g., workstations, routers, switches) certificate issuance infrastructure. Complete DoD 5000 requirements to achieve Milestone C.</p> <p>FY 2012 Plans: Research, analyze and evaluate Public Key Infrastructure (PKI) enabled products such as VPNs, routers, and switches, for their suitability to support Navy needs for device (Non-Person Entities) certificates. Analyze and evaluate PKI enabled products to support GIG identity management and protection requirements, such as the evolution of SIPRNET Token issuance workstations, SIPRNET Tokens, Middleware, and servers (Microsoft Domain Controllers, Web Server, Validation Authorities). Provide systems engineering support for SIPR PKI enabling to Navy Program of Records (POR) for integration. This includes research, analysis, and evaluation of PKI enabled products and methods to support the manual and automatic enrollment and issuance of PKI certificates to Navy servers and devices known as Non-Person Entities (NPE), and evaluation of DISA's auto-enrollment and registration services for Phases II and III of DoD PKI enabled Implementation. Research, analyze, and evaluate PKI enabled products for non-Microsoft devices and systems (e.g. Linux, Apple, servers, router, switches).</p> <p>Title: Electronic Key Management System (EKMS)</p> <p style="text-align: right;">Articles:</p> <p>FY 2010 Accomplishments:</p>	0.413 0	0.183 0	-
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>EKMS Phase V: Finalized Navy EKMS Phase V hardware and software development for ashore and afloat as well as submarine community. Conducted Virtual Private Network tested and deployed to two Pilots and prepared all necessary installation documentation to support this effort. Identified any functional deficiencies within EKMS Phase V for inclusion into the KMI CI-2 architecture. Defined phase out approach and transition strategy of EKMS to KMI. Continued to provide technical design support to EKMS programs of record (IFF Mode 5 & AEHF) for architectures. Continued to define EKMS technology gaps in preparation to the transition to KMI. Identified technical solutions for EKMS sustainment until KMI CI-2.</p> <p>FY 2011 Plans: Continue to define EKMS technology gaps in preparation to the transition to KMI. Identify technical solutions for EKMS sustainment until KMI CI-2. Continue EKMS systems engineering to support technology issues as a result of the introduction of KMI into the dual mode environment. Finalize any EKMS to KMI transition issues. Migrate COMSEC Material Work Station/Data Management Device and other Tier 3 devices to the KMI environment.</p>				
<p>Title: Information Assurance (IA) Services (formerly IA Architecture)</p> <p>Articles:</p>		2.784 0	2.752 0	2.752 0
<p>FY 2010 Accomplishments: Continued to provide security systems engineering support for the development of DoD and DoN IA architectures and the transition of new technologies to address Navy IA challenges. Supported the ongoing development of the Navy IA Master Plan and coordinated IA activities across the virtual System Command (SYSCOM) via the IA Technical Authority (TA) to ensure the security design and integration of Computer Network Defense-in-Depth (CNDiD) products and services is consistent across the Navy for major initiatives such as the future afloat, ashore, and OCONUS networks. Provided IA risk analysis and recommended risk mitigation strategies for Navy critical networks and C4I systems. Coordinated with the Navy acquisition community to ensure IA requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Provided IA engineering for development of Wireless Networks and PDA security readiness of Naval wireless networks and mobile computing devices. Continued to evaluate products for security issues and developed guidance and procedures for the design and integration of risk mitigation strategies via appropriate IA controls.</p> <p>FY 2011 Plans: Continue to provide security systems engineering support for the development of DoD and DoN IA architectures and the transition of new technologies to address Navy IA challenges. Provide updates to the Navy IA master plan that reflect emerging priorities and address Navy specific threats. Coordinate IA activities across the virtual SYSCOM via the IA TA to ensure the security design and integration of CNDiD products and services is consistent across the Navy for major initiatives such as the future afloat, ashore, and OCONUS networks. Provide IA risk analysis and recommended risk mitigation strategies for Navy critical networks and C4I systems. Coordinate with the Navy acquisition community to ensure IA requirements are identified and addressed within</p>				

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
the development cycles for emerging Navy network and C4I capabilities. Continue to evaluate products for security issues and develop guidance and procedures for the design and integration of risk mitigation strategies via appropriate IA controls.			
<i>FY 2012 Plans:</i> Continue to provide security systems engineering support for the development of DoD and DoN IA architectures and the transition of new technologies to address Navy IA challenges. Provide updates to the Navy IA master plan that reflect emerging priorities and address Navy specific threats. Coordinate IA activities across the virtual SYSCOM via the IA TA to ensure the security design and integration of CNDiD products and services is consistent across the Navy for major initiatives such as the future afloat, ashore, and OCONUS networks. Provide IA risk analysis and recommended risk mitigation strategies for Navy critical networks and C4I systems. Coordinate with the Navy acquisition community to ensure IA requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Continue to evaluate products for security issues and develop guidance and procedures for the design and integration of risk mitigation strategies via appropriate IA controls.			
<i>Title:</i> Maritime Operations Center (MOC)	-	-	0.500
<i>FY 2012 Plans:</i> Maritime Operations Center (MOC) will respond to new technologies and advanced hardware and software tools to support the development and deployment towards automated autonomous CNO NETOPS.			0
Accomplishments/Planned Programs Subtotals	24.262	22.921	22.451

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/3415: <i>Info Sys Security Program (ISSP)</i>	108.210	120.529	119.857	0.000	119.857	122.470	129.847	138.779	131.491	0.000	871.183
• OPN/8106: <i>Maritime Operations Center (MOC)</i>	6.110	6.248	6.508	0.000	6.508	8.347	7.151	8.194	9.377	0.000	51.935

D. Acquisition Strategy

EKMS Phase V -The Electronic Key Management System (EKMS) program is linked to the National Security Agency's (NSA's) strategy in implementing EKMS in evolutionary phases and migrating to Key Management Infrastructure (KMI). NSA is the lead for the joint EKMS effort and has been developing and certifying EKMS devices and capabilities in an evolutionary approach. EKMS Phase V is a major component evolving to KMI Capability Increment 2. KMI is a Major Automated Information System (MAIS) program assigned to NSA. Therefore, it is crucial that the research and development efforts of EKMS coincide with those of KMI. Navy's EKMS requires RDT&E funding over the Future Years Defense Program (FYDP) to ensure the Navy infrastructure evolves with the EKMS phases, supports additional

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0303140N: <i>Information Sys Security Program</i>	0734: <i>Communications Security R&D</i>

devices certified by NSA and supports the migration of EKMS to KMI CI-2. This will require potential modifications to the Navy EKMS architecture including the local management device and associated software. NSA certified Commercial-Off-The-Shelf/Government-Off-The-Shelf (COTS/GOTS) devices are procured to support Navy requirements.

Key Management Infrastructure (KMI) - KMI is the next generation EKMS system that is net centric in nature, providing the infrastructure for management, ordering and distribution of key material as well as directly supporting the key requirements of all Crypto modernization efforts. Navy will continue to provide and refine Navy unique requirements into the NSA KMI CI-3 Capability Development Documents (CDD). In parallel, continue to define Navy operational architecture and requirements for roll out of this new capability in the Fiscal Year 2012.

Cryptographic Modernization (CM) - The procurement and fielding of Modernized Crypto devices such as the KG-3X Inc 2, KG-45A, AN-PYQ-20(v)(c) (formerly KL-51M), KW-46M, KG-175D, KG-175A, KG-3X Suites, K02 Replacement, VACM, SubCM Common Submarine Radio Room (CSRR), Walburn, and COMSEC Crypto Serial Replacement will provide replacements of legacy crypto in accordance with the Chairman of the Joint Chiefs of Staff (CJCS) mandate (CJCS Instruction 6510) as well as the NSA's planned decertification, which improves the security of the Navy's data in transit.

Computer Network Defense (CND) - The CND program procures equipment to secure Navy network information systems. Procurements within the CND equipment line include: Firewall components which provide protection for networks from unauthorized users, Virtual Private Networks (VPN's) which provide encrypted "Point-to-Point" virtual communication networks, Intrusion Prevention Systems, Administrator Access Control, Network Security tools and Filtering routers. CND procurements will also include DoD IA certification and accreditation process end-to-end certification and accreditation support tool, to provide enterprise-wide visibility into security posture. The rapid advance of cyber technology requires an efficient process for updating CND tools deployed to afloat and shore platforms. Recognizing the need for future CND capability improvements, CND will be implementing an evolutionary acquisition strategy that delivers CND capability in multiple increments and functionality releases that address validated requirements.

Maritime Operations Center (MOC) - This RDT&E line supports an incremental acquisition strategy. MOC utilizes a System of Systems (SoS) and incremental approach in achieving global network of Navy Maritime organizations through Builds as defined by OPNAV N2/N6F41.

E. Performance Metrics

(KMI):

- * Install 100% of KMI Manager Client/Advanced Key Processor (MGC/AKPs) at selected pilot sites in support of operational assessment.
- * Conduct Navy testing across 100% of relevant network (i.e., NMCI/NGEN, ISNS/CANES, BLII ONEnet) to achieve Commander Operational Test and Evaluation Force (COMOPTEVFOR) support for Navy-wide deployment.
- * Complete 100% of engineering efforts for Navy transition and test planning for the KMI CI-2 clients and AKPs to ensure successful Navy transition to KMI in accordance with EKMS end of life priorities and objectives.
- * Complete development and transition to production the Tactical Key Loader (TKL) to achieve 100% acceptance of First Article, NSA Certification testing and COMOPTEVFOR determination of suitability for production.

Cryptographic Modernization (CM):

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
<p>* Meet 100% of TOP SECRET (TS) and SECRET Chairman of Joint Chiefs of Staff Instruction (CJCSI 6510) cryptographic modernization requirements within the current FYDP by conducting a gap analysis and building a CM roadmap and implementation plan to allow the Navy NETWAR FORCEnet Enterprise to establish operational priorities based on risk assessments. The gap analysis is an effort to analyze current integrated legacy cryptographic devices within the DoN inventory with known algorithm vulnerability dates, hardware sustainment issues, and identify transition device schedules if one exists.</p> <p>* Meet 100% of TS and SECRET CJCSI 6510 by fielding modern cryptographic devices or request "recertification" via the Joint Staff Military Communications-Electronics Board (MCEB).</p> <p>* Increase the functionality cryptographic devices by replacing 2 legacy cryptographic devices with 1 modern device where possible and identify and implement modern small form factor, multi channel cryptos. (e.g., KIV-7M replacing KIV-7HS, KIV-7HSB, KG-84, KWR-46, KL-51, etc.)</p> <p>Computer Network Defense (CND):</p> <p>* Provide the ability to protect from, react to, and restore operations after an intrusion or other catastrophic event through validated Contingency Plans (CPs) for 100% of CND systems, and validation of a Continuity of Operations Plan (COOP) solution for the Navy CND service provider.</p> <p>* Develop dynamic security defense capabilities, based on the CND posture as an active response to threat attack sensors and vulnerability indications to provide adequate defenses against subversive acts of trusted people and systems, both internal and external, by integration of anomaly-based detection solutions into the design solutions for 100% of authorized Navy enclave types.</p> <p>* Defend against the unauthorized use of a host or application, particularly operating systems, by development and/of integration of host-based intrusion prevention system design solutions for 100% of authorized Navy enclave types.</p> <p>Information Assurance (IA) services (formerly IA Architecture):</p> <p>* Ensure 100% interoperability and application of commercial standards compliance for ISSP products by researching and conducting selective evaluations, to integrate and test of commercial-off-the-shelf(COTS)/Non-Developmental Item IA security products. Evaluation may include defensible network boundary capabilities such as firewalls, secure routers and switches, guards, Virtual Private Networks, and network Intrusion Prevention Systems.</p> <p>* Provide 100% of the services delineated in OPNAVINST 5239.1C by serving as the Navy's IA technical lead by developing IA risk analysis and recommended risk mitigation strategies for critical Navy networks and C4I systems.</p> <p>* Coordinate IA activities across the Navy Enterprise via the IA TA to measure effectiveness of Navy networks and ensure the security design and integration of CNDiD products and services is 100% interoperable and operationally acceptable across the Navy for major initiatives such as the future afloat, ashore, and OCONUS networks.</p> <p>Maritime Operations Center (MOC):</p> <p>Provide and demonstrate NETOPS COP on a yearly basis via warfighter interface venues.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	VIASAT:Carlsbad, CA	7.282	-		-		-		-	0.000	7.282	
Primary Hardware Development	MIPR	MITRE:San Diego, CA	5.522	-		-		-		-	0.000	5.522	
Primary Hardware Development (PY)	WR	Various:Various	88.607	-		-		-		-	0.000	88.607	
Systems Engineering	WR	NUWC:Newport, RI	0.608	-		-		-		-	0.000	0.608	
Systems Engineering	WR	SSC PAC/LANT:San Diego, CA/Charleston, SC	11.105	11.605	Dec 2010	9.838	Dec 2011	-		9.838	0.000	32.548	
Systems Engineering	WR	NRL:Washington DC	0.300	0.300	Dec 2010	0.260	Dec 2011	-		0.260	0.000	0.860	
Systems Engineering	WR	FNMO:Monterey, CA	0.240	0.240	Dec 2010	0.208	Dec 2011	-		0.208	0.000	0.688	
Primary Hardware Development	WR	SSC PAC:San Diego	1.264	1.290	Dec 2010	1.120	Dec 2011	-		1.120	0.000	3.674	
Primary Hardware Development	WR	NRL:Washington DC	0.480	0.490	Dec 2010	0.426	Dec 2011	-		0.426	0.000	1.396	
Primary Hardware Development	WR	Various:Various	0.725	-		-		-		-	0.000	0.725	
Software Development (Note 2)	C/CPAF	SAIC:San Diego, CA	32.877	-		-		-		-	0.000	32.877	
Software Development (Note 2)	WR	NRL:Washington, D.C.	4.587	1.705	Dec 2010	1.480	Dec 2011	-		1.480	0.000	7.772	
Software Development (Note 2)	WR	SSC PAC/LANT:San Diego, CA and Charleston, SC	6.719	4.310	Dec 2010	3.740	Dec 2011	-		3.740	0.000	14.769	
Software Development (Note 1,2)	WR	NRL:Washington, D.C.	12.904	-		-		-		-	0.000	12.904	
System Engineering (MOC)	WR	SSC PAC:San Diego, CA	-	-		0.500	Dec 2011	-		0.500	0.000	0.500	
Subtotal			173.220	19.940		17.572		-		17.572	0.000	210.732	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks
 Note 1: Funding realigned to Project 3230 beginning FY10
 Note 2: Moved Software Development from 'Support' category to 'Product Development'

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems and Analysis	WR	SSC PAC/LANT:San Diego, CA/Charleston, SC	-	-		1.519	Dec 2011	-		1.519	0.000	1.519	
Software Development	WR	NRL:Washington, D.C.	-	-		0.256	Dec 2011	-		0.256	0.000	0.256	
Subtotal			-	-		1.775		-		1.775	0.000	1.775	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test	WR	SSC PAC:San Diego, CA	34.723	0.055	Dec 2010	0.106	Dec 2011	-		0.106	0.000	34.884	
Developmental Test	WR	NUWC:Newport, RI	0.263	0.360	Dec 2010	0.695	Dec 2011	-		0.695	0.000	1.318	
Operational Test	WR	OPTEVFOR:Norfolk, VA	0.080	0.045	Dec 2010	0.086	Dec 2011	-		0.086	0.000	0.211	
Subtotal			35.066	0.460		0.887		-		0.887	0.000	36.413	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/CPFF	BAH:San Diego, CA	17.264	1.941	Dec 2010	1.707	Dec 2011	-		1.707	0.000	20.912	
Program Management	WR		0.633	0.580	Dec 2010	0.510	Dec 2011	-		0.510	0.000	1.723	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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Fiscal Year	2010				2011				2012				2013				2014				2015				2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones (Note 1)																																
EKMS Phase V			▲																													
EKMS TKL (Note 2)																																
KMI CI-2																																
Test & Evaluation Milestones																																
Development Test (D/T)																																
KMI CI-2 (Note 3)																																
Operational Test (O/T)																																
KMI CI-2																																

Note 1: EKMS and KMI milestones are dependent upon the National Security Agency (NSA) for schedule and major test events.
 Note 2: The TKL Contract Award has shifted from 4QFY10 to 2QFY11 due to delay in contract negotiations.
 Note 3: The KMI CI-2 DT&E slipped from 1QFY11 to 2QFY11 due to NSA schedule delay.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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Fiscal Year	2010				2011				2012				2013				2014				2015				2016															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4												
Production Milestones (Note 1)																																								
EKMS TKL (Notes 2, 3)					TKL FA Test				TKL FRP Decision																															
KMI CI-2					KMI CI-2 Spiral 1 LRIP				KMI CI-2 Spiral 1 FRP				KMI CI-2 Spiral 2 FRP																											
Deliveries																																								
EKMS Phase V SW	▲		EKMS Phase V SW																								▲													
EKMS SKL					SKL Deliveries								▲																											
EKMS TKL (Note 4)									▲				TKL Deliveries								▲																			
KMI CI-2									▲								KMI CI-2 Deliveries																							
KMI CI-2 Next Generation Fill Device (Note 5)													▲								KMI CI-2 Next Gen Fill Device Deliveries																			

- Note 1: EKMS and KMI milestones are dependent upon the National Security Agency (NSA) for schedule and major test events.
- Note 2: EKMS TKL production First Article (FA) test slipped from 2QFY11 to 4QFY11 due to contract delays.
- Note 3: EKMS TKL Full Rate Production (FRP) Decision slipped from 3QFY11 to 2QFY12 due to contract delays and NSA strategy requiring First Article (FA) test to be completed first.
- Note 4: EKMS TKL deliveries slipped from 2QFY11 to 1QFY12 due to contract delay and NSA strategy requiring First Article (FA) test to be completed first.
- Note 5: The Navy is the Lead in the development of Next Generation Fill Device. Providing engineering support to the Joint Forum (Army/Air Force) to ensure Navy requirements are met.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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Fiscal Year	2010				2011				2012				2013				2014				2015				2016					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Acquisition Milestones																														
CRYPTO MOD KG-3X Inc 2-Milestone C (Note 1)					KG-3X Inc 2 MS C/FRP																									
CRYPTO MOD KG-45A (Note 2)													KG-45A FOC																	
CRYPTO MOD KW-46M									KW-46M IOC																					
CRYPTO MOD Link - 22 MLLC (Note 3)					Link - 22 MLLC Prototype Award																									
CRYPTO MOD VACM (Notes 4, 5)	VACM MS B								VACM MS C						VACM IOC															
Test & Evaluation Milestones																														
Development Test (D/T)																														
CRYPTO MOD KG-45A	KG-45A NSA Cert Qual Test																													
CRYPTO MOD AN-PYQ-20(v)(c) (formerly KL-51M)			AN-PYQ-20 (v) (c) D/T																											
Operational Test (O/T)																														
CRYPTO MOD KW-46M (Note 6)					KW-46M NUWC Integration Test																									

- Note 1: KG-3X Inc 2 _ MS C slipped from 4Q 2010 to 2Q 2011 due to non-availability of aircraft to conduct IOT&E testing. KG-3X is an Air Force ACAT 3 program.
- Note 2: KG-45A FOC slipped from 1Q 2013 to 2Q 2013 due to scheduling availability of battlegroup for upgrade.
- Note 3: Link -22 MLLC prototype award slipped from 1Q 2011 to 2Q 2011 due to delays in source selection process and awarding of contract.
- Note 4: VACM MS C slipped from 4Q 2012 to 1Q 2013 due to delay in US Air Force source selection.
- Note 5: VACM IOC slipped from 4Q 2013 to 1Q 2014 due to Milestone C slip.
- Note 6: KW-46M production integration test moved from 4Q 2010 to 2Q 2011 due to delay in NSA providing certified Test key for testing.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303140N: *Information Sys Security Program*

PROJECT

0734: *Communications Security R&D*

Fiscal Year	2010				2011				2012				2013				2014				2015				2016												
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4									
Production Milestones																																					
AN-PYQ-20(v)(c) (formerly KL-51M) (Note 1)				▲	AN-PYQ-20 (v) (c) Production Decision																																
Deliveries																																					
KG-3X Inc 2 (Note 2)									△	KG-3X Inc 2 Deliveries														△													
KW-46M CSRR								△	KW-46M CSRR Deliveries														△														
AN-PYQ-20(v)(c) (formerly KL-51M)				△	AN-PYQ-20 (v)(c) Deliveries														△																		
KG-45A			▲	KG-45A Deliveries																												△					
Link - 22 MLLC										△	Link - 22 MLLC Prototype Delivery																										
VACM (Note 3)																																					

Note 1: AN-PYQ-20(v)(c) is a COMSUBFOR Production Decision.
 Note 2: KG-3X Inc 2 deliveries slipped from 3Q 2011 to 4Q 2011 due to IOT&E issues. KG-3X is an Air Force ACAT 3 program.
 Note 3: VACM deliveries slipped from 4Q 2012 to 3Q 2013 due to MS C schedule delay.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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Fiscal Year	2010				2011				2012				2013				2014				2015				2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones (Note 1)																																
PKI Inc 2 (Note 2)								△								△																
Test & Evaluation Milestones																																
Developmental Test (D/T)																																
Operational Test (O/T)																																
PKI IOT&E Inc 2 (Note 3)								△																								

Note 1: PKI program milestones are dependent upon the National Security Agency (NSA) for schedule and major test events.
 Note 2: PKI Inc 2 MS C slipped from 2Q 2011 to 3Q 2011. PKI Inc 2 IOC slipped from 1Q 2013 to 2Q 2013.
 Note 3: PKI IOT&E Inc 2 Spiral accelerated from 4Q 2011 to 2Q 2011 due to NSA testing schedule update.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303140N: *Information Sys Security Program*

PROJECT

0734: *Communications Security R&D*

Fiscal Year	2010				2011				2012				2013				2014				2015				2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones				▲				△				△																				△
CND Inc 2 CPD				▲																												
CND Inc 2 MS C (Note 1)								△																								
CND Inc 2 IOC												△																				
CND Inc 2 FOC																																△
Test & Evaluation Milestones								△																								
Development Test (DT)								△																								
CND Inc 2 DT Assist (Note 2)								△																								
Operational Test (OT)								△				△																				
CND Inc 2 OA (Note 2)								△				△																				
CND Inc 2 IOT&E												△																				
Production Milestones												△				△																
CND Inc 2 LRIP												△				△																
CND Inc 2 FRP Decision																△																
Deliveries												△																				
CND Inc 2 Initial Delivery (Note 3)												△																				

Note 1: CND Inc 2 MS C slipped from 3Q 2011 to 4Q 2011 due to delay in Critical Design Review (CDR) and Test Readiness Review (TRR) schedule.

Note 2: CND Inc 2 DT Assist / OA slipped from 2Q 2011 to 3Q 2011 due to delay in CDR / TRR schedule and revised testing schedule from COMOPTEVFOR. FOT&E removed from schedule based on COMOPTEVFOR Test Strategy.

Note 3: RFP and Contract Award milestones removed from schedule. Existing contracting strategy was deemed sufficient.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0303140N: *Information Sys Security Program*

PROJECT

0734: *Communications Security R&D*

Fiscal Year	2010				2011				2012				2013				2014				2015				2016							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Maritime Operations Center (MOC) (Note 1)																																
Systems of Systems (SoS) Development											Bu 12 TRR △								Bu 14 TRR △												Bu 14 TRR △	
Prototype Development															PTD △																	
Build 12																																
Build 14																			PTD △													
Build 16																															PTD △	
Test & Evaluation Milestones																																
Developmental Test																																
Production Milestones	Sp 10 IOC ▲								Sp 10 FOC △	Bu 12 IOC △							Bu 12 FOC △	Bu 14 IOC △										Bu 14 FOC △	Bu 16 IOC △			
Deliveries-OPN																																
Spiral 10	████████████████████																															
Build 12	████████████████████																															
Build 14																																
Build 16																																

Note 1: Maritime Operations Center (MOC) is a new Program in OSD 12 Budget.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0734				
EKMS Phase V IOC	3	2010	3	2010
EKMS Phase V FOC	3	2014	3	2014
EKMS TKL Contract Award	2	2011	2	2011
EKMS TKL IOC	4	2012	4	2012
EKMS TKL FOC	4	2014	4	2014
KMI CI-2 MS C	2	2011	2	2011
KMI CI-2 Inc 2 IOC	2	2012	2	2012
KMI CI-2 FOC	4	2014	4	2014
KMI CI-2 DT&E	2	2011	2	2011
KMI CI-2 IOT&E	3	2011	3	2011
KMI CI-2 OA2	2	2011	2	2011
EKMS TKL FA Test	4	2011	4	2011
EKMS TKL FRP Decision	2	2012	2	2012
KMI CI-2 Spiral 1 LRIP	3	2011	3	2011
KMI CI-2 Spiral 1 FRP	2	2012	2	2012
KMI CI-2 Spiral 2 FRP	4	2013	4	2013
EKMS Phase V S/W	3	2010	1	2013
EKMS SKL Deliveries	1	2010	3	2013
EKMS TKL Deliveries	1	2012	4	2014
KMI CI-2 Deliveries	3	2012	4	2016
KMI CI-2 Next Generation Fill Device	2	2013	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CRYPTO KG-3X Inc 2 MS C/FRP	2	2011	2	2011
CRYPTO KG-45A FOC	2	2013	2	2013
CRYPTO KW-46M IOC	2	2011	2	2011
CRYPTO Link 22 MLLC - Prototype Award	2	2011	2	2011
CRYPTO VACM MS B	2	2010	2	2010
CRYPTO VACM MS C	1	2013	1	2013
CRYPTO VACM IOC	1	2014	1	2014
CRYPTO KG-45A NSA Cert Qual Test	1	2010	1	2010
CRYPTO AN-PYQ-20(v) (c) (formerly KL-51M) Development Test	3	2010	3	2010
CRYPTO KW-46 NUWC Integration Test	2	2011	2	2011
CRYPTO AN-PYQ-20(v) (c) (formerly KL-51M) Production Decision	4	2010	4	2010
CRYPTO KG-3X Inc 2 Deliveries	4	2011	2	2013
CRYPTO KW-46M CSRR Deliveries	3	2011	2	2015
CRYPTO AN-PYQ-20(v) (c) (formerly KL-51M) Deliveries	4	2010	4	2014
CRYPTO KG-45A Deliveries	3	2010	1	2013
CRYPTO Link 22 MLLC Prototype Delivery	2	2012	2	2012
CRYPTO VACM Deliveries	3	2013	4	2016
PKI Inc 2 MS C	3	2011	3	2011
PKI Inc 2 IOC	2	2013	2	2013
PKI Inc 2 FOC	2	2014	2	2014
PKI Inc 2 Spiral 2 IOT&E	2	2011	2	2011
CND Inc 2 CPD	4	2010	4	2010
CND Inc 2 MS C	4	2011	4	2011
CND Inc 2 IOC	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CND Inc 2 FOC	4	2016	4	2016
CND Inc 2 DT Assist	3	2011	3	2011
CND Inc 2 OA	3	2011	3	2011
CND Inc 2 IOT&E	3	2012	3	2012
CND Inc 2 LRIP	2	2012	4	2012
CND Inc 2 FRP Decision	4	2012	4	2012
CND Inc 2 Initial Delivery	2	2012	2	2012
MOC Systems of Systems (SoS) Development FY12 TRR	3	2012	3	2012
MOC Systems of Systems (SoS) Development FY14 TRR	3	2014	3	2014
MOC Systems of Systems (SoS) Development FY16 TRR	3	2016	3	2016
MOC Prototype Development Build 12 PTD	2	2013	2	2013
MOC Prototype Development Build 14 FY14 PTD	2	2014	2	2014
MOC Prototype Development Build 14 FY15 PTD	2	2015	2	2015
MOC Prototype Development Build 16 PTD	2	2016	2	2016
MOC Developmental Test FY14	4	2014	4	2014
MOC Developmental Test FY16	4	2016	4	2016
MOC Spiral 10 IOC	1	2010	1	2010
MOC Spiral 10 FOC	4	2011	4	2011
MOC Build 12 IOC	1	2012	1	2012
MOC Build 12 FOC	4	2013	4	2013
MOC Build 14 IOC	1	2014	1	2014
MOC Build 14 FOC	4	2015	4	2015
MOC Build 16 IOC	1	2016	1	2016
MOC Spiral 10	1	2010	4	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 0734: <i>Communications Security R&D</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MOC Build 12	1	2012	4	2013
MOC Build 14	1	2014	4	2015
MOC Build 16	1	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>				PROJECT 3230: <i>Information Assurance</i>				
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3230: <i>Information Assurance</i>	2.181	3.013	2.778	-	2.778	2.756	2.837	2.847	2.877	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The goal of the Navy Information Systems Security Program (ISSP) is to ensure the continued protection of Navy and joint information and information systems from hostile exploitation and attack. ISSP activities address the triad of Defense Information Operations: protection, detection, and reaction. Evolving attack sensing (detection), warning, and response (reaction) responsibilities extend far beyond the traditional ISSP role in protection or Information Systems Security (INFOSEC). Focused on the highly mobile forward-deployed subscriber, the Navy's adoption of Network-Centric Warfare (NCW) places demands upon the ISSP, as the number of users explodes and the criticality of their use escalates. Today, the ISSP protects an expanding core of services critical to the effective performance of the Navy's mission.

The rapid rate of change in the underlying commercial and government information infrastructures makes the provision of security an increasingly complex and dynamic problem. Information Assurance (IA) technology mix and deployment strategies must evolve quickly to meet rapidly evolving threats and vulnerabilities. No longer can information security divorce the information infrastructure. The ISSP enables the Navy's war fighter to trust in the availability, integrity, authentication, privacy, and non-repudiation of information.

This project includes funds for advanced technology development, test and evaluation of naval information systems security based on leading edge technologies that will improve information assurance (e.g., situational awareness and information infrastructure protection) across all command echelons to tactical units afloat and war fighters ashore. This effort will provide the research to develop a secure seamless interoperable, common operational environment of networked information systems in the battle space and for monitoring and protecting the information infrastructure from malicious activities. This effort will provide naval forces a secure capability and basis in its achievement of protection from unauthorized access and misuse, and optimized IA resource allocations in the information battle space. This program will also develop core technology to improve network infrastructure resistance and resiliency to attacks; enable the rapid development and certification of security-aware applications and information technologies in accordance with the Common Criteria for IA and IA-enabled information technology products by the National Security Telecommunications and Information Systems Security Instructions; and measure the effectiveness and efficiency of IA defensive capabilities under naval environments.

The program will develop common architectural frameworks that facilitate integration of network security capabilities, enable effective seamless interoperability, and contribute to a common consistent picture of the networked environment with respect to information assurance and security. This effort will address the need for a common operational picture for IA, as well as assessment of security technology critical to the success of the mission. Initiate requirements definition for situation awareness capabilities to support computer network defense in highly distributed, homogeneous, and heterogeneous networks including mobile and embedded networked devices. This effort also includes the architectural definition of situational awareness and visualization capabilities to support active computer network defense and support underlying data mining and correlation tools. This includes addressing the capability to remotely manage and securely control the configurations of network security components to implement changes in real time or near real time. Initiate requirements definition for secure coalition data exchange and interoperability.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 3230: <i>Information Assurance</i>
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among security levels and classifications. Ensure approaches address various security level technologies as well as emerging architectural methods of providing interoperability across different security levels. Examine multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Initiate infrastructure protection efforts as the Navy develops network centric architectures and warfare concepts, ensuring an evolutionary development of security architectures and products for IA that addresses Navy infrastructure requirements. Ensure the architectures evolve to provide proper protection as technology, DoD missions, and the threat all evolve. Include defensive protections as well as intrusion monitoring (sensors), warning mechanisms, and response capabilities in the architecture. Ensure the unique security and performance requirements of tactical systems, including those operating various security levels are addressed. Initiate the efforts to conceptualize new network centric warfare technology to protect our assets, such as secure network gateways and routers, and components and tools that improve the survivability of Navy networks. Provide systems security engineering, certification and accreditation support for high-confidence naval information system and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Information Assurance	2.181	3.013	2.778
Articles:	0	0	0
FY 2010 Accomplishments:			
<p>Completed the development of the information sharing architecture that addresses data integrity, confidentiality and policy management throughout networks of varying classification levels. Evaluated the security services of the architecture and adjusted to ensure mission operations are supported. Continued the development of technology that protects, assesses and responds to attacks of the infrastructure architecture and provided reconstitution capabilities/services. Continued the development of modernized attack sensing and warning mechanisms based on new detection algorithms and data mining concepts, and response capabilities for the architecture. Completed the development of technology and tools to ensure the unique security and performance requirements of tactical wireless communication systems are addressed. Initiated the development of a new high assurance boundary controller to protect Navy and Marine Corps data and resources from attack. Provided security services including encryption and data malware analysis in the boundary controller. Initiated the development of a high-assurance computing environment for Navy and Marine Corps use based on trusted platform technology. Developed the appropriate core code, security messages and assurance functions required. Initiated the development of new key and enabling technologies, management tools, and capabilities to address specific Navy and Marine Corps needs. Ensured the new solutions address distribution and management of data and other requisite material. Continued systems security engineering, certification and accreditation support for high-confidence naval information systems and ensured certification and accreditation approaches are consistent with Navy and DoD requirements.</p>			
FY 2011 Plans:			
<p>Complete the development of the technology that protects, assesses and responds to attacks of the infrastructure framework and provide reconstitution capabilities/services. Assess in representative operational environments. Complete the development of modernized attack sensing and warning mechanisms based on new detection algorithms and data mining concepts, and response capabilities for the architecture/framework. Continue the development of a new high assurance boundary controller to protect</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140N: <i>Information Sys Security Program</i>	PROJECT 3230: <i>Information Assurance</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>Navy and Marine Corps data and resources from attack. Ensure the security services include, at a minimum, encryption and data malware analysis in the boundary controller as well as the ability to adjust routing of communications based on network stress levels. Continue the development of a high-assurance computing environment for Navy and Marine Corps use based on trusted platform technology. Continue the development of the appropriate core code, security messages and assurance functions required. Continue the development of new key and enabling technologies, management tools, and capabilities to address specific Navy and Marine Corps needs. Ensure the new solutions address distribution and management in bandwidth limited environments and tactical environments. Initiate the development of mobile security techniques that introduce time and location-based security parameters for geo-location and asset protection and management. Address the specific issues of geo-location and mapping in Global Positioning System (GPS) constrained environments. Continue systems security engineering, certification and accreditation support for high-confidence naval information systems and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.</p> <p>FY 2012 Plans: Initiate the development of new network security technology focused on addressing nation state level sponsored activity. Address the growing threat by providing robust characterization of attacks/profiles to increase detection rates of the technology and to support attribution of threat actions across network boundaries. Continue the development of a new high assurance boundary controller to protect Navy and Marine Corps data and resources from attack. Ensure the security services include, at a minimum, encryption and data malware analysis in the boundary controller as well as the ability to adjust routing of communications based on network threat-action levels. Complete the development of a high-assurance computing environment for Navy and Marine Corps use based on trusted platform technology. Complete the development of the appropriate core code, security messages and assurance functions required to ensure platform hardware and software protection. Complete the development of new key and enabling technologies, management tools, and capabilities to address specific Navy and Marine Corps needs. Ensure the new solutions address distribution and management in bandwidth limited environments and tactical environments. Continue the development of mobile security techniques that introduce time and location-based security parameters for geo-location and asset protection and management. Address the specific issues of geo-location and mapping in GPS constrained environments. Initiate the development of critical cryptographic technology to support Navy unique platforms and requirements. Ensure the technology addresses the limited size, weight and power issues, multiple data classification processing requirements, and provide on-the-fly programmability of mission data and key material to support various missions. Continue systems security engineering, certification and accreditation support for high-confidence naval information systems and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.</p>				
Accomplishments/Planned Programs Subtotals		2.181	3.013	2.778

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0303140N: <i>Information Sys Security Program</i>	3230: <i>Information Assurance</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

This project funds advanced development, test and evaluation of naval information systems security based on leading edge technologies that will improve information assurance (e.g., situational awareness and information infrastructure protection) across all Command echelons to tactical units afloat and war fighters ashore. This effort will provide the research to develop a secure seamless interoperable, common operational environment of networked information systems in the battle space and for monitoring and protecting the information infrastructure from malicious activities. Technologies developed are not transitioned into a acquisition program within the ISSP BLI 3415 budget.

E. Performance Metrics

Cryptographic Modernization (CM):

- * Develop new emerging cryptographic technology for airborne applications by reducing the form-factor by 30%, and provide multi-channel, field reprogrammable cryptos that can be reprogrammed with algorithms in less than 1 minute. Increase throughput capabilities by 50% to meet high speed networks and develop new network-aware cryptographic technology to maximize bandwidth usage.

Computer Network Defense (CND):

- * Develop new algorithms to provide real-time detection of nation state malware attacks against DoN networks. Detection algorithms shall be used by both host-based sensors and network sensors to provide a 100% detection of known/programmed malware.
- * Develop new malware analysis technology to decrease the analysis time by 50%, thus providing support for zero-day attacks.

Wireless Security:

- * Develop new wireless signal discovery technology to increase detection by 30% and increase the bandwidth sensitivity by 20% thus allowing analysis and protection of DoN assets used in the wider emerging wireless spectrum.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE				PROJECT				
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0303140N: <i>Information Sys Security Program</i>				9999: <i>Congressional Adds</i>				
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	4.979	-	-	-	-	-	-	-	-	0.000	4.979
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Adds.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
<i>Congressional Add:</i> Universal Description, Discovery and Integration	4.979	-
<i>FY 2010 Accomplishments:</i> Continued systems engineering to cover continued interoperability requirements for the architecture which demand a common security model to be established. Continued engineering implementation and warfighter/military utility assessment, risk reduction, and operational demonstration. Continued development of software design, functional and security test plans.		
Congressional Adds Subtotals	4.979	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Congressional Adds.

E. Performance Metrics

Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0303150M: <i>WWWCCS/GLOBAL COMMAND AND CONTROL SYSTEM</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	-	1.250	-	1.250	1.000	0.550	0.450	0.400	Continuing	Continuing
2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>	-	-	1.250	-	1.250	1.000	0.550	0.450	0.400	Continuing	Continuing

A. Mission Description and Budget Item Justification

PE 0303150M reflects a portion of the Global Force Management-Data Initiative advocated by the VCJCS. Funding enhancements support GFM-DI implementation of the Force Management and Adaptive Planning Processes by FY13 and Financial, Health Records, and Information Assurance by FY16.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	1.250	-	1.250
Total Adjustments	-	-	1.250	-	1.250
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	1.250	-	1.250

Change Summary Explanation

Funding supports the Joint Global Force Management - Data Initiative (GFM-DI). The acquisition details are not finalized, but will be completed in the Spring 2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303150M: <i>WWWCCS/GLOBAL</i> <i>COMMAND AND CONTROL SYSTEM</i>				PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>	-	-	1.250	-	1.250	1.000	0.550	0.450	0.400	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Global Command and Control System (GCCS) - Consists of Command and Control (C2) subsystems which provide Combatant Commanders, the Joint Staff and other Tactical Commanders a near real time picture of the battle space necessary to conduct joint and multinational operations of U.S. Military Forces. This effort specifically supports developmental efforts for Global Force Management-Data Initiative (GFM-DI). GFM-DI will make force structure authorization data visible, accessible and understandable across the Department and will provide the authoritative data source for all DoD force structure as directed by Joint Planning Guidance VII, dated June 2006.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Marine Corps Unit Reference Number (URN) Repository	-	-	0.500
Articles:			0
FY 2012 Plans: Link Organization Unique Identifier's (OUID's) to Unit Reference Numbers in USMC Unit Reference Number Repository			
Title: Marine Corps Slider Sourcing Application	-	-	0.500
Articles:			0
FY 2012 Plans: Develop USMC Sourcing Tool to automate allocation process using MCOS force structure.			
Title: Global Command and Control System	-	-	0.250
Articles:			0
FY 2012 Plans: Conduct mapping of OUID's to other identifies and work with Program Managers regarding cost, schedule, and implementation (e.g. Unit Identification Code (UIC), Derivative Unit Identification Code (DUIC))			
Accomplishments/Planned Programs Subtotals	-	-	1.250

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150M: <i>WWWCCS/GLOBAL COMMAND AND CONTROL SYSTEM</i>	PROJECT 2270: <i>Exp Indirect Fire Gen Supt Wpn Sys</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

This will be a phased implementation led by the Joint Staff J8 Models and Analysis Support Office (MASO).

E. Performance Metrics

Technical: This exhibit reflects a break-out of GFM-DI efforts into unique USMC PE's.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network Ent SVCS(CANES)-MIP</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	8.375	6.602	-	6.602	-	-	-	-	0.000	14.977
9C87: <i>CANES Integration</i>	-	8.375	6.602	-	6.602	-	-	-	-	0.000	14.977

Note

Funding transitioned from PE 0303138N beginning in FY11.

A. Mission Description and Budget Item Justification

The CANES program recapitalizes the Navy's afloat network infrastructure (see note below) by consolidation of diverse physical networks and implementation of Afloat Core Services (ACS) and Cross Domain Solutions (CDS). CANES will provide all security domains from Unclassified through Top Secret/Sensitive Compartmented Information (SCI) Common Computing Environment (CCE) for a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aircraft. CANES will enable more efficient data visibility and flow between operational nodes on the Global Information Grid using an open architecture. Additionally, virtualization on the CCE enhances the department's ability to reduce the multitude of standalone command and control systems and applications eliminating the need to field additional or unique hardware (servers and workstations). Through CCE, CDS and virtualization, CANES will improve the Navy's Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) security and agility while reducing total ownership costs.

MIP funding will focus on development of the MIP components of CANES that will deliver the Common Computing Infrastructure and Core Services (Sensitive Compartmented Information & Related Comm) required to host Intelligence, Surveillance and Reconnaissance (ISR) applications and services.

Note existing afloat networks include: Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), SCI Networks, and Submarine Local Area Network (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of afloat Computer Network Defense (CND).

CANES will field on a rolling four year hardware baseline and a two year software baseline. The CANES vision is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics and training efforts into a unified support structure. The primary goals of the CANES program are to: 1) reduce the number of networks through the use of mature, certified, cross domain technologies; 2) reduce the infrastructure footprint and associated costs for hardware afloat; and 3) provide increased capability to meet current and projected warfighter requirements.

CANES will enable application developers to begin decoupling applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment.

In FY12, the CANES RDT&E investment ramps down with the close out of the Engineering and Manufacturing Development (EMD) phase, transitioning to the Limited Deployment (LD) phase to continue development on additional platform set baselines and testing events ramp up. Engineering and Development Model (EDM) units are installed on Unit level platforms to support Initial Operational Test & Evaluation (IOT&E). Legacy afloat networks and hosted applications fully transition for integration testing as they migrate to CANES baseline. Begin to prepare Enterprise Engineering and Certification (E2C) lab for Submarine Hosted System Integration. Develop Request For Proposal (RFP) for Full Deployment contract and associated source selection activities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network Ent SVCS(CANES)-MIP</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	8.375	7.406	-	7.406
Current President's Budget	-	8.375	6.602	-	6.602
Total Adjustments	-	-	-0.804	-	-0.804
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-0.804	-	-0.804

Change Summary Explanation

Technical: On 29 March 2010, CANES was designated an ACAT IAM pre-Major Automated Information System (MAIS) program. Per FY10 National Defense Authorization Act (NDAA), Low Rate Initial Production (LRIP) is replaced with Limited Deployment (LD) and Full Rate Production (FRP) is replaced with Full Deployment (FD) for MAIS programs.

Schedule: MS B shifted from Q3FY10 to Q2FY11 due to closeout coordination of Preliminary Design Review (PDR) Requests for Action (RFA) for both Engineering and Manufacturing Development (EMD) developers combined with acquisition documentation staffing timelines and alignment with new OSD mandated requirements for milestone events. Execution of the EMD contract was not impacted or affected by the scheduling of MS B. MS B O-IPT was held 1QFY11, and Acquisition Decision Memorandum (ADM) was signed 2QFY11.

MS C planned completion date has shifted from late Q4FY11 to Q2FY12 due to the EMD contract award which re-baselined the program schedule including the lab based Operational Assessment (OA) which is the main entrance criteria for MS C. Initial Operational Capability (IOC): IOC shifted to Q4FY12 aligning with the Joint Staff definition of IOC completion. IOC is achieved when first CANES unit is installed, and maintenance and training support programs are in place. Full Deployment (FD) Contract Award: Shift related to Milestone Decision Authority (MDA) decision to wait until MS C to release FD contract Request for Proposal (RFP).

Funding: An \$804K decrease in FY12 occurred since PB11. As a result, the Operational Testing (OT) event was condensed. The OT criteria is still being met, with some of the risk mitigation testing events being eliminated.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network Ent SVCS(CANES)-MIP</i>	PROJECT 9C87: <i>CANES Integration</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9C87: <i>CANES Integration</i>	-	8.375	6.602	-	6.602	-	-	-	-	0.000	14.977
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Funding transitioned from PE 0303138N beginning in FY11.

A. Mission Description and Budget Item Justification

The CANES program recapitalizes the Navy's afloat network infrastructure (see note below) by consolidation of diverse physical networks and implementation of Afloat Core Services (ACS) and Cross Domain Solutions (CDS). CANES will provide all security domains from Unclassified through Top Secret/Sensitive Compartmented Information (SCI) Common Computing Environment (CCE) for a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aircraft. CANES will enable more efficient data visibility and flow between operational nodes on the Global Information Grid using an open architecture. Additionally, virtualization on the CCE enhances the department's ability to reduce the multitude of standalone command and control systems and applications eliminating the need to field additional or unique hardware (servers and workstations). Through CCE, CDS and virtualization, CANES will improve the Navy's Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) security and agility while reducing total ownership costs.

Note existing afloat networks include: Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), SCI Networks, and Submarine Local Area Network (SubLAN). In addition, CANES will provide functionality currently provided in the Video Information Exchange System (VIXS) and portions of afloat Computer Network Defense (CND).

CANES will enable application developers to begin decoupling applications and services software away from independent, unique hardware stacks and host them on a common interoperable environment. This approach will incrementally deploy and will provide a basis for overall Navy Return on Investment (ROI) over the existing strategies.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: CANES Integration	-	8.375	6.602
Articles:		2	0
FY 2011 Plans: Continue CANES statutory and regulatory acquisition documentation to achieve Milestone C (MS C). Complete revised Cost Analysis Requirements Document (CARD) and Life Cycle Cost Estimate (LCCE). Procure two (2) Engineering and Development Model (EDM) units for Environmental Qualification Test (EQT), Operational Assessment (OA), integration, and regression testing. The EDM units function as pre-production units and require funding for necessary installation design and installation costs. Continue Developmental Testing (DT) and begin OA for Operational Testing (OT) event. Close out EMD contract and complete			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network</i> <i>Ent SVCS(CANES)-MIP</i>	PROJECT 9C87: <i>CANES Integration</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>down-select of the prime system developer to continue into Limited Deployment (LD) phase to develop additional platform set baselines. Develop Request for Proposal for Full Deployment contract and source selection activities. Achieve Milestone B (MS B). MIP funding will focus on development of the MIP components of CANES that will deliver the Common Computing Infrastructure and Core Services (Sensitive Compartmented Information & Related Comm) required to host Intelligence (INT)/Intelligence, Surveillance and Reconnaissance (ISR) applications and services.</p> <p>FY 2012 Plans: MIP funding will focus on development of the MIP components of CANES that will deliver the Common Computing Infrastructure and Core Services (Sensitive Compartmented Information & Related Comm) required to host Intelligence (INT)/Intelligence, Surveillance and Reconnaissance (ISR) applications and services. Complete statutory and regulatory acquisition documentation to achieve CANES MS C. Revise CARD and LCCE in support of Navy's Service Cost Position (SCP) for MS C. Following Operational Testing (OT), preparation begins for IOT&E to include installation of EDM units on Unit level platforms to complete operational assessments for readiness. Also, continue developmental Legacy afloat networks and hosted applications fully transition for integration testing as they migrate to CANES baseline. Begin to prepare Enterprise Engineering and Certification (E2C) lab for Submarine Hosted System Integration. Completion of Source Selection activities to award Full Deployment contract. Continue development of platform set baselines.</p>			
Accomplishments/Planned Programs Subtotals	-	8.375	6.602

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/2915: CANES	1.177	34.398	195.141	0.000	195.141	303.318	319.817	307.413	376.359	Continuing	Continuing
• OPN/2925: CANES INTELL	0.000	10.432	75.084	0.000	75.084	85.447	63.863	71.297	60.260	Continuing	Continuing
• RDTE/0303138N: CANES INTEGRATION	46.823	63.563	12.906	0.000	12.906	15.663	15.125	11.464	13.661	Continuing	Continuing

D. Acquisition Strategy

CANES was identified as a ACAT IAM pre-MAIS. Formal program initiation at MS B (2QFY11). The program office is employing a multiple-phase, multiple-award down-select contract strategy to reduce program risks and maintain competition in both design development and production during contract performance. Two competitive contracts have been awarded to design, develop, and deliver all hardware and the associated operating system, virtualization and other commercial software needed to deliver a functional network. As the program accomplishes system development, a down-select will be conducted to choose the best design for Limited Deployment (LD). At the completion of LD, a separate competitive contract will be awarded for Full Deployment (FD) efforts.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network</i> Ent SVCS(CANES)-MIP	PROJECT 9C87: <i>CANES Integration</i>

E. Performance Metrics

Early RDT&E investment and sustainment of dual design contractors through the development phase will save 10-30% of Total Ownership Cost (TOC) over the life cycle of the program. Cost avoidance throughout the life of the program is based on performance gains that are measured (not quantified) by 1) reducing the number of networks through the use of mature, certified, cross domain technologies; 2) reducing the infrastructure footprint and associated costs for hardware afloat; and 3) providing increased capability to meet current and projected warfighter requirements.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network</i> Ent SVCS(CANES)-MIP	PROJECT 9C87: <i>CANES Integration</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	UNKNOWN:UNKNOWN	-	8.161	Aug 2011	-		-		-	0.000	8.161	8.161
Systems Engineering	C/CPFF	UNKNOWN:UNKNOWN	-	-		6.380	Nov 2011	-		6.380	0.000	6.380	6.380
Subtotal			-	8.161		6.380		-		6.380	0.000	14.541	14.541

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cost Estimation and Analysis	WR	SPAWAR Systems Center:San Diego, CA	-	0.060	Nov 2010	0.065	Nov 2011	-		0.065	0.000	0.125	0.125
Program Management Support	C/CPFF	Systems Research & Application:San Diego, CA	-	0.154	Oct 2010	0.157	Oct 2011	-		0.157	0.000	0.311	0.311
Subtotal			-	0.214		0.222		-		0.222	0.000	0.436	0.436

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	8.375		6.602		-		6.602	0.000	14.977	14.977

Remarks
 4QFY11 UNKNOWN will be defined after down select to one contractor at the completion of the Engineering and Manufacturer Development (EMD) competitive contract. This winning prime contractor will be selected for the Limited Deployment (LD) option and to continue development of additional platform set baselines. 4QFY11 funds are paramount to procurement of (2) Engineering Design Model (EDM) units to be installed in 1QFY12 in support of Initial Operational Test & Evaluation (IOT&E), Full Deployment Decision (FDD) and program's ability to meet 5 year requirement from Funds First Obligated to FDD.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network</i> <i>Ent SVCS(CANES)-MIP</i>	PROJECT 9C87: <i>CANES Integration</i>
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7	PROGRAM ELEMENT 0303238N - Consolidated Afloat Networks & Enterprise Services (CANES)																								PROJECT NUMBER AND NAME 9C87 - CANES Integration											
Fiscal Year	2010 (see note 1)				2011				2012				2013				2014				2015				2016											
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
Acquisition Milestones	CANES Transition △				CANES MS B △				CANES MS C △		IOC △				FDD △																					
System Development			PDR △		CDR △												TI - SW																			
			CANES Sys Dev - Surface							CANES Sys Dev - Surface				CANES Sys Dev - Sub								CANES TI 2 - HW/SW Dev														
Software Development ACS (See Note 2)		ACS v 1.1																																		
Test & Evaluation Milestones					DT												Subs DT									Subs OT										
Development Test																																				
Operational Test								OT (LD)									IOT&E									TI DT										
Production Milestones																																				
LD								CANES LD																												
FD																				CANES FD																
Deliveries (see note 3)			CANES EDM Unit △ ACS 1.1 △			CANES EQT EDM △				LD △				FD △																FD △						

Notes:
 1/ FY10 efforts funded under PE 0303138N. FY11 and beyond funded under PE 0303138N and PE 0303238N.
 2/ ACS v1.1 software development funded by ISNS.
 3/ EDM Unit included in Limited Deployment (LD) quantities to meet Target Inventory Objective, prior to MS C.
 4/ Milestone B (MS B): Shifted from Q3FY10 to Q2FY11 due to closeout coordination of Preliminary Design Review (PDR) Requests for Action (RFA) for both Engineering and Manufacturing Development (EMD) developers combined with acquisition documentation staffing timelines and alignment with new OSD mandated requirements for milestone events. Execution of the EMD contract was not impacted or affected by the scheduling of MS B. MS B O-IPT was held 1QFY11, and Acquisition Decision Memorandum (ADM) was signed 2QFY11.
 5/ MS C planned completion date has shifted from late Q4FY11 to Q2FY12 due to the EMD contract award which re-baselined the program schedule including the lab based Operational Assessment (OA) which is the main entrance
 6/ Initial Operational Capability (IOC): IOC shifted to Q4FY12 aligning with the Joint Staff definition of IOC completion. IOC is achieved when first CANES unit is installed, and maintenance and training support programs are in
 7/ Full Deployment (FD) Contract Award: Shift related to Milestone Decision Authority (MDA) decision to wait until MS C to release FD contract Request for Proposal (RFP).
 8/ 4QFY11 program down selects to one developer to continue development of additional platform sets.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network</i> Ent SVCS(CANES)-MIP	PROJECT 9C87: <i>CANES Integration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 9C87				
Acquisition Milestone - CANES Transition	1	2010	1	2010
Acquisition Milestone - CANES Milestone (MS) B	2	2011	2	2011
Acquisition Milestone - MS C	2	2012	2	2012
Acquisition Milestone - Initial Operational Capability (IOC)	4	2012	4	2012
Acquisition Milestone - Full Development Decision Review	3	2013	3	2013
System Development - Surface (2 developers)	2	2010	3	2011
System Development - Preliminary Design Review (PDR)	4	2010	4	2010
System Development - Critical Design Review (CDR)	2	2011	2	2011
System Development - Submarines	2	2013	1	2014
System Development - Technical Insertion (TI) Software (SW)	3	2013	1	2014
System Development - Technical Insertion 2 Hardware (HW)/SW Development	2	2015	1	2016
Software Development - ACS 1.1	1	2010	2	2010
Development Test	4	2010	3	2011
Operational Test - Limited Deployment	4	2011	1	2012
Operational Test - Initial Operational Test & Evaluation	4	2012	2	2013
Development Test - Submarines	3	2013	2	2014
Operational Test - Submarines	4	2014	1	2015
Development Test - Technical Insertion	4	2015	1	2016
Operational Test - Technical Insertion	4	2016	4	2016
Production Milestone - Limited Deployment	4	2011	4	2012
Production Milestone - Full Deployment	3	2012	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303238N: <i>Consolidated Afloat Network</i> Ent SVCS(CANES)-MIP	PROJECT 9C87: <i>CANES Integration</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries - ACS 1.1	4	2010	4	2010
Deliveries - CANES Engineering Design Model (EDM) Unit	4	2010	4	2010
Deliveries - CANES EDM Unit Environmental Qualification Test (EQT)	4	2011	4	2011
Deliveries - Limited Deployment	2	2012	2	2013
Deliveries - Full Deployment	3	2013	4	2016
System Development - Surface (1 developer)	4	2011	1	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0305149N: <i>Cobra Judy</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	61.802	36.527	40.605	-	40.605	17.092	-	-	-	0.000	156.026
4021: <i>CJR System Engineering</i>	61.802	36.527	40.605	-	40.605	17.092	-	-	-	0.000	156.026

A. Mission Description and Budget Item Justification

Cobra Judy Replacement funds will replace the current U.S. Naval Ship (USNS) Observation Island which has become unsustainable and due to leave service in 2014. This program funds the development of a single ship-based radar suite for ballistic missile treaty verification. Cobra Judy provides monitoring and verification of specific aspects of United States treaties with other countries. It is necessary to replace the current Cobra Judy to prevent any potential gap in coverage. Prior studies have indicated that a ship-based radar replacement is the most timely and cost effective solution. This program is joint-funded.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	61.804	36.527	39.520	-	39.520
Current President's Budget	61.802	36.527	40.605	-	40.605
Total Adjustments	-0.002	-	1.085	-	1.085
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	1.191	-	1.191
• Rate/Misc Adjustments	-	-	-0.106	-	-0.106
• Congressional General Reductions Adjustments	-0.002	-	-	-	-

Change Summary Explanation

Technical: Added funds in FY 12 to properly price program.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4021: <i>CJR System Engineering</i>	61.802	36.527	40.605	-	40.605	17.092	-	-	-	0.000	156.026
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

A. (U) Mission Description

Cobra Judy Replacement funds will replace the current U.S. Naval Ship (USNS) Observation Island which has become unsustainable and due to leave service in 2014. This program will fund the development of a single ship-based radar suite for ballistic missile treaty verification. Cobra Judy provides monitoring and verification of specific aspects of United States treaties with other countries. It is necessary to replace the current Cobra Judy to prevent any potential gap in coverage. Prior studies have indicated that a ship-based radar replacement is the most timely and cost effective solution. This program is joint-funded.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: DESIGN AND RISK REDUCTION</p> <p style="text-align: right;">Articles:</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> - Continue Common Back End software development and array build and test - S-Band Front End Array testing began 2QTR FY10 - S-Band Front End (SFE) manufacturing in process <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> - Complete Common Back End software development - Complete S-Band array development testing - Begin Mission Equipment installation on Ship <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue installation of Mission Equipment on Ship - Integration of Mission Equipment on Ship 	57.112 0	24.463 0	30.172 0
<p>Title: SYSTEMS ENGINEERING</p> <p style="text-align: right;">Articles:</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> - Ship installation of non-prime mission equipment began 3QTR FY10 <p>FY 2011 Plans:</p>	4.610 0	3.807 0	3.954 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continue Ship installation of non-prime mission equipment FY 2012 Plans: - Integration of non-prime mission equipment			
Title: PROGRAM MANAGEMENT FY 2010 Accomplishments: - Program travel - Cost and schedule development and execution	0.080 0	-	-
Title: TEST AND EVALUATION FY 2011 Plans: Radar & ship integration and test Ship crew contracts after ship delivery FY 2012 Plans: Radar & ship integration and test Ship crew contracts after ship delivery	-	8.257 0	6.479 0
Accomplishments/Planned Programs Subtotals	61.802	36.527	40.605

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0303901N/4003: <i>Cobra Judy</i> <i>Replacement</i>	53.294	34.457	39.963	0.000	39.963	16.000	0.000	0.000	0.000	0.000	143.714

D. Acquisition Strategy

The acquisition strategy calls for leveraging ongoing Navy Ballistic Missile Defense (BMD) radar development, updating existing user interface/communications/data handling equipment designs from a similar operational unit and purchasing and integrating the mission equipment aboard an appropriate merchant-class hull. System design will be accomplished using in-hand technologies and commercial standards to lower schedule risk and produce a product with the lowest possible life-cycle cost.

E. Performance Metrics

-Successfully complete Design Reviews & MDA-Level Reviews

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>
<ul style="list-style-type: none">-Successfully complete Initial Operational Capability (IOC)-Successfully complete X-Band Development-Successfully complete S-Band Radar Development-Successfully complete Mission Equipment String Integration-Successfully complete ME Ship Integration-Successfully complete Mission Communications Suite Lightoff-Ship Delivery-Successfully complete TECHEVAL/Post Delivery Test & Trails-Successfully complete Operational Test & Readiness Review (OTRR)-Successfully complete IOT&E Initial Operational Test OPEVAL		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and Risk Reduction	Allot	NAVSEA 05C:Washington DC	-	0.150	Oct 2010	0.150	Oct 2011	-		0.150	0.150	0.450	
Design and Risk Reduction	C/CPIF	Raytheon:Sudbury, MA	566.228	21.763	Jan 2011	27.772	Oct 2011	-		27.772	11.349	627.112	
Shipbuilding	C/FFP	PEO Ships:Washington, DC	100.815	-		-		-		-	0.000	100.815	
Design and Risk Reduction	WR	SPAWAR:San Diego, CA	5.855	2.550	Dec 2010	2.250	Dec 2011	-		2.250	1.000	11.655	
Design and Risk Reduction	C/CPAF	MIT/TWS:Hanscom AFB, MA	0.500	-		-		-		-	0.000	0.500	
Subtotal			673.398	24.463		30.172		-		30.172	12.499	740.532	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	Various	Various:Various	8.764	-		-		-		-	0.000	8.764	
System Engineering	C/CPAF	BAE:Rockville, MD	0.840	-		-		-		-	0.000	0.840	
System Engineering	C/CPAF	GTRI:Atlanta, GA	2.118	0.750	Dec 2010	0.500	Dec 2011	-		0.500	0.350	3.718	
System Engineering	C/CPFF	JHU/APL:Laurel, MD	5.790	-		-		-		-	0.000	5.790	
System Engineering	C/CPAF	MIT/LL:Hanscom AFB, MA	5.294	1.620	Dec 2010	2.179	Dec 2011	-		2.179	2.090	11.183	
System Engineering	WR	NRL:Washington, DC	1.880	0.525	Dec 2010	0.425	Dec 2011	-		0.425	0.450	3.280	
System Engineering	WR	NSWC CSS:Panama City, FL	2.942	-		-		-		-	0.000	2.942	
System Engineering	WR	NSWC DD:Dahlgren, VA	11.592	0.809	Dec 2010	0.850	Dec 2011	-		0.850	0.000	13.251	
System Engineering	WR	NSWC PHD:Port Hueneme, CA	1.535	-		-		-		-	0.000	1.535	
System Engineering	Allot	PEO Ships:Washington, DC	3.000	-		-		-		-	0.000	3.000	
System Engineering	WR	SEG:Columbia, MD	1.195	-		-		-		-	0.000	1.195	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	SPAWAR:San Diego,CA	5.659	-		-		-		-	0.000	5.659	
Systems Engineering	WR	NSWC/CRANE:Crane, IN	0.204	0.103	Dec 2010	-		-		-	0.000	0.307	
Subtotal			50.813	3.807		3.954		-		3.954	2.890	61.464	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various:Various	0.295	-		-		-		-	0.000	0.295	
Test and Evaluation	C/CPAF	Raytheon:Sudbury, MA	1.200	-		-		-		-	0.000	1.200	
Test and Evaluation	MIPR	AFOTEC:Peterson AFB, CO	0.330	-		-		-		-	0.000	0.330	
Test and Evaluation	MIPR	COMOPTEVFOR:Norfolk, VA	0.315	-		-		-		-	0.000	0.315	
Test and Evaluation	MIPR	JITC:Fort Huachuca, AZ	0.225	-		-		-		-	0.000	0.225	
Test and Evaluation	WR	NSWC DD:Dahlgren, VA	2.019	-		-		-		-	0.000	2.019	
Test and Evaluation	Allot	PEO SHIPS:Washington, DC	0.452	-		-		-		-	0.000	0.452	
Test and Evaluation	C/CPAF	TSC:Silver Spring, MD	0.422	-		-		-		-	0.000	0.422	
Test and Evaluation	C/CPAF	Riverside Research:New York, NY	-	2.071	Oct 2010	1.979	Oct 2011	-		1.979	0.750	4.800	
Test and Evaluation	MIPR	Military Sealift Command:Washington, DC	-	4.872	Nov 2010	4.500	Oct 2011	-		4.500	0.511	9.883	
Test and Evaluation	MIPR	Patrick AFB:PAFB, Florida	-	1.314	Nov 2010	-		-		-	0.442	1.756	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			5.258	8.257		6.479		-		6.479	1.703	21.697	

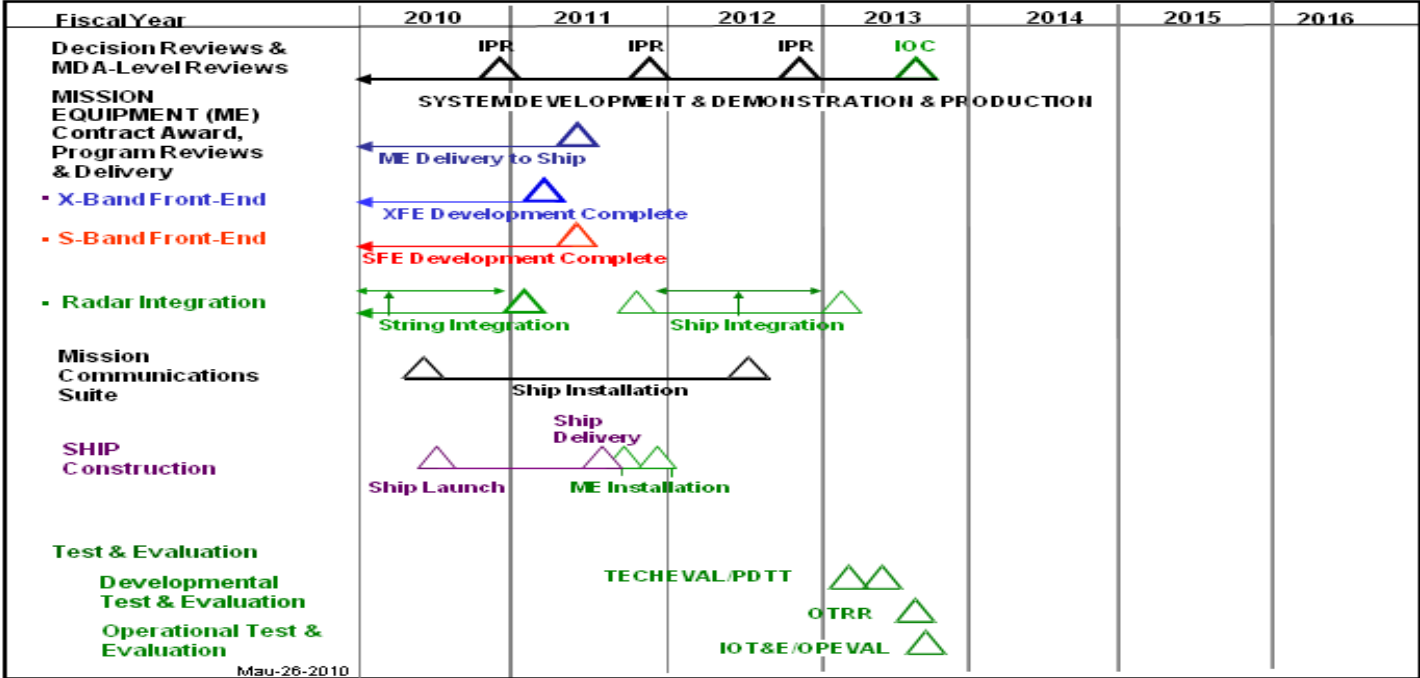
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/CPAF	BAE Systems:Rockville, MD	12.233	-		-		-		-	0.000	12.233	
Program Management	C/CPFF	DTI:Arlington, VA	0.435	-		-		-		-	0.000	0.435	
Contractor Engineering	C/CPAF	BAE Systems:Rockville, MD	10.611	-		-		-		-	0.000	10.611	
Contractor Engineering	C/CPAF	Computer Science Corp:Falls Church, VA	3.255	-		-		-		-	0.000	3.255	
Contractor Engineering	C/CPAF	Systems Planning and Analysis:Alexandria, VA	1.900	-		-		-		-	0.000	1.900	
Contractor Engineering	Various	Various:Various	1.687	-		-		-		-	0.000	1.687	
Travel	Allot	PEO IWS2:Washington, DC	0.896	-		-		-		-	0.000	0.896	
Subtotal			31.017	-		-		-		-	0.000	31.017	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		760.486	36.527		40.605		-	40.605	17.092	854.710	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305149N: <i>Cobra Judy</i>	PROJECT 4021: <i>CJR System Engineering</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4021				
Decision Reviews & MDA-Level Reviews	1	2010	4	2012
Initial Operational Capability (IOC)	3	2013	3	2013
X- Band Development	1	2010	1	2011
S-Band Radar Development	1	2010	2	2011
Mission Equipment String Integration	1	2010	1	2011
ME Ship Integration	4	2011	1	2013
Ship Delivery	3	2011	3	2011
TECHEVAL/ Post Delivery Test & Trials	1	2013	2	2013
OTRR	3	2013	3	2013
IOT&E/OPEVAL	3	2013	3	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	27.687	63.878	0.904	-	0.904	0.822	5.419	5.433	27.860	Continuing	Continuing
0524: <i>Navy METOC Support (SPACE)</i>	1.057	0.936	0.904	-	0.904	0.822	0.833	0.880	0.890	Continuing	Continuing
1452: <i>GEO SAT</i>	25.833	62.942	-	-	-	-	4.586	4.553	26.970	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.797	-	-	-	-	-	-	-	-	0.000	0.797

A. Mission Description and Budget Item Justification

This program element supports the Navy's requirements in meteorological and oceanographic (METOC) space-based remote sensors. These requirements include commitments to satellite, sensor, and operational demonstration/development activities as well as the transition to fleet applications associated with three satellite programs: 1) the joint Defense Meteorological Satellite Program (DMSP), 2) the jointly funded Coriolis satellite which includes Navy Satellite Based Wind Speed (WindSat) and Air Force Solar Mass Ejection Imager instruments, 3) the Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite funded entirely by Navy.

The Navy METOC Space-Based Sensing Capabilities project provides for Navy participation in Navy/Air Force cooperative efforts leading to DMSP sensor development, and specifically participation in the calibration and validation of instruments and delivery of satellite products to the fleet. The passive microwave instruments carried on the DMSP satellites provide global and atmospheric data of direct operational relevance, including sea surface wind, sea ice, and precipitation. WindSat is a partnered program that meets multiple naval remote sensing requirements and provides a significant risk reduction for the Joint Polar Orbiting Satellite System (JPSS) formerly National Polar-orbiting Operational Environmental Satellite System (NPOESS) satellites' Microwave Imaging Sensor instrument.

The GEOSAT Follow-On project, and GFO-2 program, will provide a polar-orbiting satellite that measures sea surface topography using a precise altimeter. Both the GEOSAT Follow-On and Navy METOC Support (Space) projects fulfill Navy's obligation to develop naval service-unique, mission critical space-based METOC technology.

Starting in FY12 the Navy has delayed all Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite development efforts until FY 2014.

JUSTIFICATION FOR BUDGET ACTIVITY: BA-7: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	28.774	63.878	57.148	-	57.148
Current President's Budget	27.687	63.878	0.904	-	0.904
Total Adjustments	-1.087	-	-56.244	-	-56.244
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.182	-			
• SBIR/STTR Transfer	-0.884	-			
• Program Adjustments	-	-	-56.235	-	-56.235
• Section 219 Reprogramming	-0.020	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.009	-	-0.009
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: *Integration of Adv Wide Field of View Sensor Testbed System*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	0.797	-
	0.797	-
	0.797	-

Change Summary Explanation

Technical: The Navy has delayed all Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite development efforts until FY 2014.

Schedule: The Navy has delayed all Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite development efforts until FY 2014.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>				PROJECT 0524: <i>Navy METOC Support (SPACE)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0524: <i>Navy METOC Support (SPACE)</i>	1.057	0.936	0.904	-	0.904	0.822	0.833	0.880	0.890	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Meteorology and Oceanography (METOC) Space-Based Sensing Capabilities project provides for the naval service's unique sensor development efforts Navy Satellite Based Wind Speed (WindSat) and Navy participation in the Defense Meteorological Satellite Program (DMSP) Special Sensor Microwave/Imager and Special Sensor Microwave Imager Sounder calibration/validation efforts in support of the fleet operational requirements. WindSat, an initiative begun in 1997, is a partnered program that meets multiple naval remote sensing requirements and provides a significant risk reduction for the Joint Polar Satellite System (JPSS) satellites' Conical Microwave Imaging Sensor instrument. The passive microwave instruments carried on DMSP and future JPSS satellites provide global oceanic and atmospheric data of direct operational relevance, including sea surface wind speed, sea ice, and precipitation.

The METOC Space-Based Sensing Capabilities project ensures the naval service's operational requirements are satisfied primarily through demonstration of technologies for inclusion on operational constellations such as DMSP, the JPSS and the National Oceanic and Atmospheric Administration's Geostationary Operational Environmental Satellites (GOES). These efforts fulfill naval service unique requirements that are not funded within the DMSP, JPSS or GOES programs, and are in accordance with current inter-agency agreements.

The primary focus of the FY 2012 request is the continuation of the microwave imager sensors data anomaly resolution, and to continue ground control and operations of the Coriolis spacecraft and monitor the state of health of the Navy Satellite Based Wind Speed (WindSat) on-orbit payload.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: METOC Space-Based Sensing Capabilities	1.057	0.936	0.904
Articles:	0	0	0
FY 2010 Accomplishments: Continued performance assessments of microwave imagers (e.g.: Special Sensor Microwave Imager Sounder (SSMIS) / Special Sensor Microwave Imager (SSMI) / Microwave Imager Sounder (MIS)) and continued to calibrate sensors and validate data and resolve anomalies. Continued limited ground control and operations of the Coriolis spacecraft and monitored the state of health of the Navy Satellite Based Wind Speed (WindSat) on-orbit payload.			
FY 2011 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>	PROJECT 0524: <i>Navy METOC Support (SPACE)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue performance assessments of microwave imagers (e.g.: SSMIS/SSMI/MIS) and continue to calibrate sensors and validate data and resolve anomalies. Continue limited ground control and operations of the Coriolis spacecraft and monitor the state of health of the WindSat on-orbit payload.			
<i>FY 2012 Plans:</i> Conduct performance assessments, sensor calibrations and perform quality control on National Polar-orbiting Operational Environmental Satellite System Preparatory Project (NPP) and Defense Meteorological Satellite Program (DMSP) satellite sensor suits. Continue limited ground control and operations of the Coriolis spacecraft and monitor the state of health of the Navy Satellite Based Wind Speed (WindSat) on-orbit payload.			
Accomplishments/Planned Programs Subtotals	1.057	0.936	0.904

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RD TEN/0603207N/2342: <i>METOC DATA ASSIMILATION AND MOD</i>	18.685	15.311	10.636	0.000	10.636	11.321	10.026	10.022	9.995	0.000	85.996

D. Acquisition Strategy

Naval service unique, space based METOC requirements. Particular sensors or data sources with unique naval service mission needs are targeted to accelerate acquisition or ensure threshold accomplishment of Joint or converged national program plans. Navy Satellite Based Wind Speed provides risk reduction data and developmental technology that the Joint Polar Satellite System (JPSS) program will use in the development of the Conical Microwave Imager Sounder (CMIS). CMIS will collect global microwave radiometry and sounding data to produce microwave imagery and other meteorological and oceanographic data. CMIS can be viewed as the follow-on instrument to the Special Sensor Microwave (SSM) instruments Navy developed for the Defense Meteorological Satellite Program. These CMIS sensors will be acquired as part of the JPSS architecture which supports these Navy requirements in the future. Maintenance of rigorous sensor calibration and data validation for operational SSM instruments continues along with algorithm development in support of fleet applications. The Advanced Altimeter technologies will improve radar altimeter resolution and aerial coverage to support Navy requirements for sea surface topography measurement in the littorals.

E. Performance Metrics

Goal: Provide precise and near real-time METOC forecasting to the warfighter using existing and future space-based satellite derived data, including ocean surface wind speed, rain rate, ice concentration, and soil moisture measurements.

Metric: Provide precise ocean surface wind speed within plus or minus 2.0 meters per second, the rain over land and ocean rate within plus or minus 5.0 millimeters per hour, soil moisture measurements within plus or minus 10%; and sea ice concentrations within plus or minus 10%.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>	PROJECT 0524: <i>Navy METOC Support (SPACE)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Spacecraft Development	C/FFP	Spectrum Astro:AZ	2.500	-		-		-		-	0.000	2.500	
Spacecraft Development	C/FP	TRW:Redondo Beach, CA	4.885	-		-		-		-	0.000	4.885	
Assimilation/Prediction Models	WR	Naval Research Laboratory:Washington, DC	5.845	-		-		-		-	0.000	5.845	
Subtotal			13.230	-		-		-		-	0.000	13.230	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
WindSat-Sensor/Observing Systems (Space)	C/FP	Various:Various	90.083	-		-		-		-	0.000	90.083	
WindSat-Sensor/Observing Systems (Space)	C/FP	Lockheed Martin:Maryland	-	0.919	Dec 2010	0.889	Dec 2011	-		0.889	Continuing	Continuing	Continuing
IOMI PM and System Engineering	C/FP	Various:Various	3.754	-		-		-		-	0.000	3.754	
SSMIS Cal/Val	C/FP	Various:Various	10.959	-		-		-		-	0.000	10.959	
Future Mission Engineering	C/FP	Various:Various	0.316	-		-		-		-	0.000	0.316	
APMIR	C/FP	Various:Various	1.590	-		-		-		-	0.000	1.590	
WindSat-Sensor/Observing Systems (Space)	WR	SMC DET 12:Kirtland AFB, New Mexico	-	0.017	Nov 2010	0.015	Nov 2011	-		0.015	0.000	0.032	
Subtotal			106.702	0.936		0.904		-		0.904			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/FP	Various:Various	0.376	-		-		-		-	0.000	0.376	

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>	PROJECT 1452: <i>GEO SAT</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1452: <i>GEO SAT</i>	25.833	62.942	-	-	-	-	4.586	4.553	26.970	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project provides a Polar-orbiting satellite (the Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2)) that measures sea surface topography using a precise altimeter. Mission data will be collected by the Spacecraft Operations Center and passed to the Payload Operations Center, and Altimetry Data Fusion Center, which are co-located at the Naval Oceanographic Office, Stennis Space Center, MS. Mission data is used in global and regional scale ocean forecast models. GFO-2 will provide a capability for precise mesoscale (e.g., fronts and eddies) and basin-scale oceanography. This capability will support tactical anti-submarine warfare, mine warfare, naval special warfare mission planning, tactical decision aids, and sensor/weapon performance prediction. GFO-2 will also provide an undersea warfare battlespace characterization capability that supports submarine detectability, weapon settings, sound velocity profiles, tropical cyclone intensity, and track forecasts.

GFO-2 data will be made freely available to other agencies, such as the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration, who value its input to studies involving global warming and climate change, including El Nino Southern Oscillation effects.

Ocean topography data was previously provided by GEOSAT from 1985 until the satellite failed in January 1990. The Geodetic/geophysical Satellite Follow-On satellite was launched in February 1998 and deorbited in November 2008. The GEOSAT GFO-2 will provide for the continuation of this capability.

The Navy has delayed all Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite development efforts until FY 2014.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: GEO SAT	25.833	62.942	-
Articles:	0	0	
FY 2010 Accomplishments: Awarded the Geodetic/geophysical Satellite (GEOSAT) Follow On 2 (GFO-2) development contract. Began design phase of GFO-2. Began pre-Milestone B activities (System Requirements Review, System Design Review).			
FY 2011 Plans: Navy is assessing current program and mitigation strategies.			
Accomplishments/Planned Programs Subtotals	25.833	62.942	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>	1452: <i>GEO SAT</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Navy will revise pending restart in FY14.

E. Performance Metrics

Goal: Provide METOC GEOSAT derived mission data to improve the accuracy of global and regional scale oceanographic forecast models.
Metric: Anti-Submarine Warfare capability is highly dependent on the operational environment. GEOSAT Follow-On 1 demonstrated that a space based altimeter provided the equivalent of approximately a 500-fold increase in available subsurface observations and a 10-fold increase in available surface observations, critical to characterization of the ocean environment and oceanographic modeling. War-gaming models show that this increased knowledge of the subsurface acoustic propagation resulting from one altimeter reduced the probability of losing a ship to subsurface attack from 80% to 20% for various scenarios.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>	PROJECT 1452: <i>GEO SAT</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GFO - Hardware Development	C/FP	Ball Aerospace:Boulder, CO	85.984	-		-		-		-	0.000	85.984	
Software Development	C/FP	Various:Various	8.045	-		-		-		-	0.000	8.045	
GFO - System Engineering	C/FP	Ball Aerospace:Boulder, CO	3.628	-		-		-		-	0.000	3.628	
System Engineering	C/FP	Various:Various	5.867	-		-		-		-	Continuing	Continuing	Continuing
GFO-2 (Naval Altimetry Satellite)	C/FP	Ball Aerospace:Boulder, CO	25.403	-		-		-		-	0.000	25.403	
TBD	TBD	TBD:TBD	-	62.942	Sep 2011	-		-		-	0.000	62.942	
Subtotal			128.927	62.942		-		-		-			

Remarks
Navy has delayed all GFO-2 efforts until FY14. Navy is assessing current program and mitigation strategy.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GFO	C/FP	Various:Various	0.200	-		-		-		-	0.000	0.200	
GFO-2	C/CPIF	MAXIM Systems:San Diego, CA	4.294	-		-		-		-	0.000	4.294	
Acquisition Workforce	C/FP	Various:Various	0.026	-		-		-		-	0.000	0.026	
Subtotal			4.520	-		-		-		-	0.000	4.520	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		133.447	62.942	-	-	-		

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305160N: <i>Navy Meteorological and Ocean Sensors-Space(METOC)</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	0.797	-	-	-	-	-	-	-	-	0.000	0.797
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Adds.

B. Accomplishments/Planned Programs (\$ in Millions)

<i>Congressional Add:</i> Integration of Adv Wide Field of View Sensor Testbed System	FY 2010	FY 2011
	0.797	-
<i>FY 2010 Accomplishments:</i> Began integration for Advanced Wide Field of View Sensor with Reusable, Reconfigurable Payload Processing Testbed System.		
Congressional Adds Subtotals	0.797	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Congressional Adds.

E. Performance Metrics

Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	35.295	35.212	9.353	-	9.353	9.072	8.441	8.608	8.736	Continuing	Continuing
0117: <i>Reef Point</i>	-	0.093	-	-	-	-	-	-	-	0.000	0.093
2478: <i>Tactical Control System</i>	8.795	8.767	9.353	-	9.353	9.072	8.441	8.608	8.736	Continuing	Continuing
2501: <i>Medium Endurance Marinized UAS Technology Demonstration</i>	-	26.352	-	-	-	-	-	-	-	0.000	26.352
3332: <i>CARGO UAS</i>	26.500	-	-	-	-	-	-	-	-	0.000	26.500

A. Mission Description and Budget Item Justification

Tactical Unmanned Aerial Vehicle is a Joint Military Intelligence Program

This Program Element (PE) includes non-lethal joint tactical Unmanned Aerial Vehicle system support for DoD to provide the warfighters with the capability for day/night aerial Reconnaissance, Surveillance and Target Acquisition, intelligence, communications/data relay, and minefield detection in limited adverse weather. This PE includes the Tactical Control System (TCS) which provides a multi-level, scalable, and flexible control of the air vehicles and payloads, as well as direct receipt of unmanned aerial vehicles imagery.

B. Program Change Summary (\$ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	8.834	35.212	10.147	-	10.147
Current President's Budget	35.295	35.212	9.353	-	9.353
Total Adjustments	26.461	-	-0.794	-	-0.794
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	26.500	-	-0.712	-	-0.712
• Section 219 Reprogramming	-0.039	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.082	-	-0.082

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>
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Change Summary Explanation

Schedule:

Tactical Control System (TCS):

All of the acquisition milestones listed below have been adjusted due to software and flight test delays:

- Initial Operational Capability moved from 2Q FY10 to 1Q FY12
- Completion of Operational Evaluation OT-C-1 moved from 2Q FY10 to 4Q FY11
- Completion of Engineering and Manufacturing Development moved from 2Q FY10 to 4Q FY11
- Completion of MQ-8 ECP Integration Test (title changed from Radar Sensor Integration) moved from 4Q FY11 to 1Q FY15
- Completion of LINUX Transition/LCS Integration moved from 3Q FY12 to 4Q FY12

The name of TCS 4.0 effort was updated from Enhanced Multi Vehicle Control to Service Oriented Architecture to show the updated alignment of the TCS program with OSD direction on commonality amongst UAS control systems architecture.

Technical:

Not Applicable

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 0117: <i>Reef Point</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0117: <i>Reef Point</i>	-	0.093	-	-	-	-	-	-	-	0.000	0.093
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A new start project for FY11.

A. Mission Description and Budget Item Justification

The Reef Point Sonochute Unmanned Aerial Vehicle (UAV) will provide an expendable organic UAV that can be launched from a P-3/P-8 Sono Buoy Launcher to support the host aircraft by 1) extending its on-station time, 2) extending on-board sensor range and 3) affording a margin of crew and platform safety not currently available to Maritime Surveillance Aircraft community. The system supports the P-8A Multi-Mission Maritime Aircraft Adjunct Unmanned Aerial Vehicle requirement of level II UAV command and control (threshold) to provide real-time receipt of UAV sensor data via direct link as well as the objective goal for later production blocks of P-8A for Level IV UAV command and control to enable on-board command and control of UAVs operating as remote sensors and Command, Control, Communication, Computers and Intelligence, Surveillance and Reconnaissance collection. This system supports the P-8A design for deployable systems; which, accommodates for the stowage, control, and dispensing of various non-lethal expendables for use in search, localization, tracking, classification/identification tasks, for enhancing survivability, and for Search and Rescue. The system supports Naval missions such as Maritime Interdiction. Naval Air Warfare Center, Aircraft Division (NAWCAD) will support the systems engineering.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Engineering and Maintenance	-	0.093	-	-	-
Articles:		0			
Description: Government Technical Engineering Support and travel.					
FY 2011 Plans: FY11 funds this new start effort to provide an expendable organic UAV that can be launched from a P-3/P-8 Sono Buoy Launcher. Funding will support government engineering support and related travel requirements.					
Accomplishments/Planned Programs Subtotals	-	0.093	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 0117: <i>Reef Point</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The project strategy is to develop and demonstrate an expendable organic sonochute launched UAV (SLUAV) for P-3/P-8 maritime missions. The demonstration project will support requirements developed and refined for input into the formal requirements Joint Capabilities Integration Development System process and documentation. NAWCAD will provide government engineering support and manage the demonstration effort using the developers of SLUAVs currently under contract.

E. Performance Metrics

Attainment of a sonochute launched expendable organic UAV for use on P-3/P-8 aircraft.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2478: <i>Tactical Control System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2478: <i>Tactical Control System</i>	8.795	8.767	9.353	-	9.353	9.072	8.441	8.608	8.736	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program supports the Tactical Control System (TCS), a standards-based system that provides interoperability and commonality for Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) interfaces, and Command and Control of Naval Unmanned Aircraft Systems (UAS). Capability to provide Interoperability across the Naval UAS Family of Systems through use of TCS software operating on Ground Control Station hardware utilizing North Atlantic Treaty Organization (NATO) Standardization Agreements (STANAG)-4586 architecture communicating across a Tactical Common Data Link.

TCS provides a full range of scalable UAS capabilities from passive receipt of air vehicle and payload data to full air vehicle and payload command and control. TCS offers the war fighter a common core operating environment to simultaneously receive, process, and disseminate data from different UAS types for reconnaissance, surveillance, and combat assessment.

This program supports enhancements and updates to TCS in order to continue to meet supported air vehicle enhancements, incorporation of new technologies that will be used to enhance overall system performance, incorporate new payloads and payload capabilities (such as advanced sensors and weapons), incorporate Multi-Vehicle Control, incorporate NATO STANAG-4586 and Command, Control, Communications, Computers and Intelligence enhancements, and alignment with OSD direction for UAS control segments.

TCS software will be incorporated into the MQ-8 Vertical Take-off and Landing Tactical Unmanned Air Vehicle (VTUAV) system, and will reach Initial Operational Capability in conjunction with MQ-8. TCS software addresses MQ-8 requirements validated by the Joint Requirements Oversight Council in the VTUAV Capability Production Document (May 2007). TCS software will be used to support the Medium Endurance Maritime UAS (MEMUAS) demonstration and will form the core control system for any future UAS program that starts from the demonstration. TCS and VTUAV Control Station will be modified to support the new Medium Range Maritime UAS program.

TCS maximizes the use of contractor and government off-the-shelf hardware and software whenever possible and incorporates software/hardware enhancements where appropriate to maintain growth potential and minimize hardware and operating system dependence. TCS software is interoperable, and is compliant with the OSD Command and Control, Communications, Intelligence Joint Technical Architecture, and Distributed Common Ground System standards, and NATO standards.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: TCS Development and Integration	7.631	7.924	8.592	-	8.592
Articles:	0	0	0		0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2478: <i>Tactical Control System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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<i>FY 2010 Accomplishments:</i> Continued TCS integration with MQ-8 development. Continued new TCS capabilities to support requirements for Littoral Combat Ship (LCS) integration. Continued TCS NATO STANAG-4586 compliance. Continued TCS C4ISR interface testing for MQ-8 systems. Continued hardware and operating system independence initiatives.					
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<i>FY 2011 Plans:</i> Continue TCS integration with MQ-8 development. Continue new TCS capabilities to support requirements for LCS integration. Continue TCS NATO STANAG 4586 compliance. Continue TCS C4ISR interface testing for MQ-8 systems. Continue hardware and operating system independence initiatives. Start preliminary MRMUAS design.					
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<i>FY 2012 Base Plans:</i> Continue TCS integration with MQ-8 development. Continue new TCS capabilities to support requirements for LCS integration. Continue TCS NATO STANAG 4586 compliance. Continue TCS C4ISR interface testing for MQ-8 systems. Continue hardware and operating system independence initiatives. Start modifications for UAS weapons control. Continue preliminary MRMUAS design studies.					
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<i>Title:</i> Technical and Engineering Services <div style="text-align: right;"><i>Articles:</i></div>	1.164	0.843	0.761	-	0.761
	0	0	0		0

<i>FY 2010 Accomplishments:</i> Continued government engineering support, contractor support, program support, and travel for the TCS program.					
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<i>FY 2011 Plans:</i> Continue government engineering support, contractor support, program support, and travel for the TCS program.					
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<i>FY 2012 Base Plans:</i> Continue government engineering support, contractor support, program support, and travel for the TCS program.					
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Accomplishments/Planned Programs Subtotals	8.795	8.767	9.353	-	9.353
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2478: <i>Tactical Control System</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The TCS program is developing Government owned, non-proprietary software that supports multiple UAS control. The TCS program continues under the FY04 Congressionally-directed restructure of the program to focus on Navy requirements and standards based on interoperability. Navy requirements for TCS include supporting fielding of the Navy MQ-8 and MRMUAS aboard the LCS, FFG, DDG, the addition of plug-and-play payloads, and implementation of NATO Standardization Agreement for Standard Interfaces of Unmanned Aircraft Vehicle (UAV) Control System for NATO UAV Interoperability.

E. Performance Metrics

Successfully achieve Initial Operational Capability. Successfully complete Coastal Battlefield Reconnaissance and Analysis Integration. Support MQ-8 Engineering Change Proposal (ECP) Integrated test. Successfully complete LCS Ship Integration. Successfully complete Operational Test. Successfully complete MQ-8 Weapons Rapid Deployment Capability.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2478: <i>Tactical Control System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development	C/CPAF	Raytheon:Falls Church,VA	120.827	7.449	Nov 2010	8.077	Nov 2011	-		8.077	0.000	136.353	136.525
Award Fees	C/CPAF	Raytheon:Falls Church,VA	9.631	0.475	Jul 2011	0.515	Jul 2012	-		0.515	0.000	10.621	10.449
Subtotal			130.458	7.924		8.592		-		8.592	0.000	146.974	146.974

Remarks
Awarded 85.6% of award fees in past award fee periods.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test and Evaluation	WR	Various:Various	1.164	0.030	Nov 2010	0.030	Nov 2011	-		0.030	Continuing	Continuing	Continuing
Subtotal			1.164	0.030		0.030		-		0.030			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various:Various	2.515	0.213	Nov 2010	0.213	Nov 2011	-		0.213	Continuing	Continuing	Continuing
Government Engineering Support	WR	Various:Various	8.031	0.280	Nov 2010	0.255	Nov 2011	-		0.255	Continuing	Continuing	Continuing
Program Management Support	Various	Various:Various	3.531	0.275	Nov 2010	0.218	Nov 2011	-		0.218	Continuing	Continuing	Continuing
Travel	WR	NAVAIR:PAXRV, MD	0.188	0.045	Oct 2010	0.045	Oct 2011	-		0.045	Continuing	Continuing	Continuing
Subtotal			14.265	0.813		0.731		-		0.731			

Remarks
Travel Contract Type is TO.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

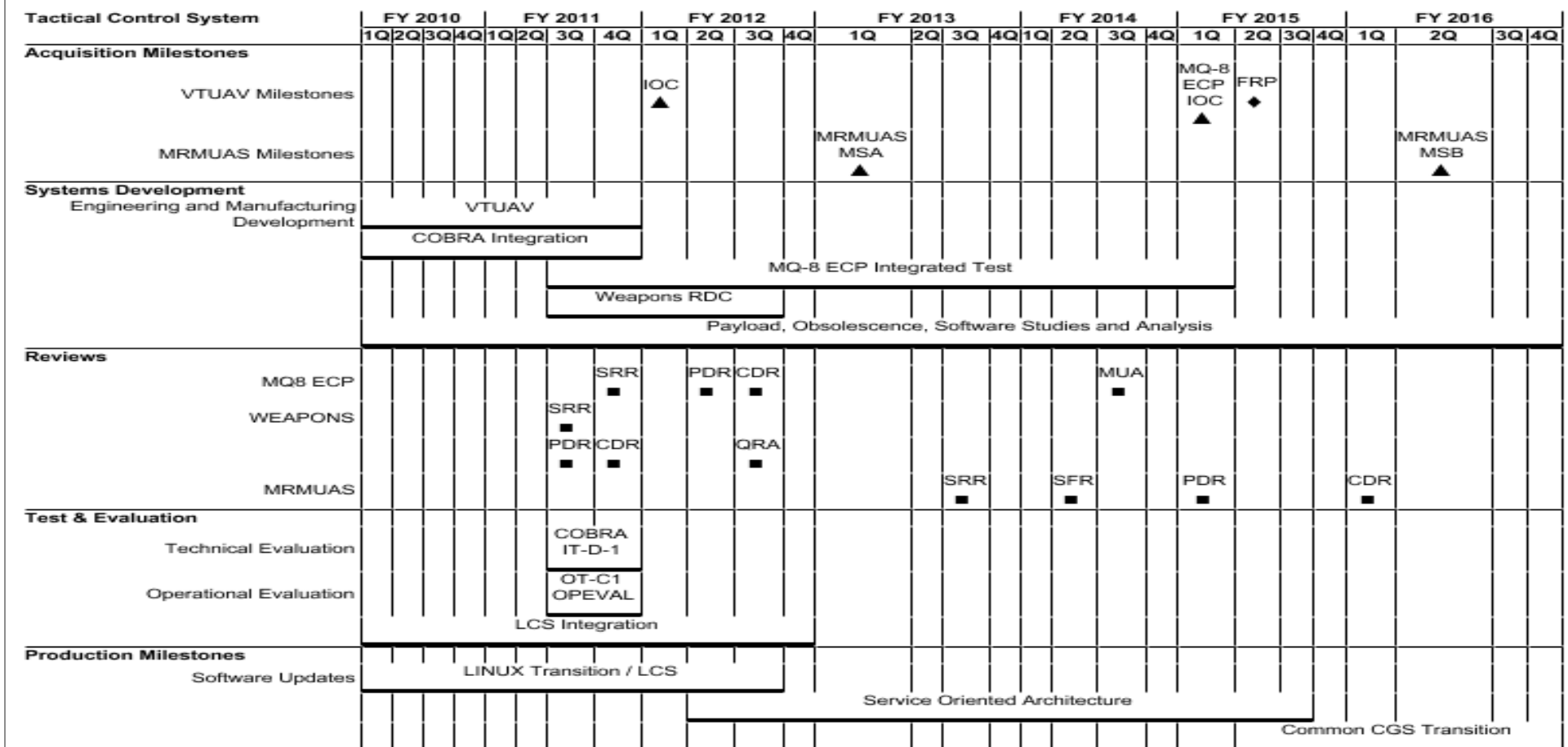
1319: Research, Development, Test & Evaluation, Navy
BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0305204N: Tactical Unmanned Aer Vehicles

PROJECT

2478: Tactical Control System



2012PB - 0305204N - 2478

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2478: <i>Tactical Control System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Tactical Control System</i>				
Acquisition Milestones: VTUAV Milestones: Initial Operational Capability (IOC)	1	2012	1	2012
Acquisition Milestones: VTUAV Milestones: Full Rate Production (FRP)	2	2015	2	2015
Acquisition Milestones: VTUAV Milestones: MQ-8 ECP Initial Operational Capability (IOC)	1	2015	1	2015
Acquisition Milestones: MRMUAS Milestones: MRMUAS MSA	1	2013	1	2013
Acquisition Milestones: MRMUAS Milestones: MRMUAS MSB	2	2016	2	2016
Systems Development: Engineering and Manufacturing Development: VTUAV	1	2010	4	2011
Systems Development: Engineering and Manufacturing Development: Coastal Battlefield Reconnaissance and Analysis (COBRA) Integration	1	2010	4	2011
Systems Development: Engineering and Manufacturing Development: MQ-8 ECP	3	2011	1	2015
Systems Development: Engineering and Manufacturing Development: Weapons	3	2011	3	2012
Systems Development: Engineering and Manufacturing Development: Payload, Obsolescence, Software Studies and Analysis	1	2010	4	2016
Reviews: MQ8 ECP: System Readiness Review	4	2011	4	2011
Reviews: MQ8 ECP: Preliminary Design Review	2	2012	2	2012
Reviews: MQ8 ECP: Critical Design Review	3	2012	3	2012
Reviews: MQ8 ECP: Military Utility Assessment	3	2014	3	2014
Reviews: WEAPONS: System Requirement Review	3	2011	3	2011
Reviews: WEAPONS: Preliminary Design Review	3	2011	3	2011
Reviews: WEAPONS: Critical Design Review	4	2011	4	2011
Reviews: WEAPONS: Quick Reaction Assessment	3	2012	3	2012
Reviews: MRMUAS: System Requirement Review	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2478: <i>Tactical Control System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Reviews: MRMUAS: System Functional Review	2	2014	2	2014
Reviews: MRMUAS: Preliminary Design Review	1	2015	1	2015
Reviews: MRMUAS: Critical Design Review	1	2016	1	2016
Test & Evaluation: Technical Evaluation: COBRA IT-D-1	3	2011	4	2011
Test & Evaluation: Operational Evaluation: OT-C1 OPEVAL	3	2011	4	2011
Test & Evaluation: Operational Evaluation: LCS Integration	1	2010	4	2012
Production Milestones: Software Updates: TCS 3.0	1	2010	3	2012
Production Milestones: Software Updates: TCS 4.0	2	2012	3	2015
Production Milestones: Software Updates: TCS 5.0	2	2015	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2501: <i>Medium Endurance Marinized UAS Technology Demonstration</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2501: <i>Medium Endurance Marinized UAS Technology Demonstration</i>	-	26.352	-	-	-	-	-	-	-	0.000	26.352
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

A new start program for FY11.

A. Mission Description and Budget Item Justification

The Medium Endurance Marinized Unmanned Aircraft System (UAS) Technology Demonstration - This demonstration was going to evaluate medium endurance Vertical Take Off and Landing (VTOL) UAS at sea. On August 10, 2010 the CNO signed a Utilization Plan for FY11 Medium Endurance Maritime Unmanned Air System (MEMUAS) Demonstration funding in conjunction with the initiation of a new start Medium Range Maritime UAS (MRMUAS) follow-on program. MRMUAS will provide the long term capability for the Beyond Line of Sight SOF and Navy Missions. MRMUAS is a potential joint program with the Army.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Hardware and System Development Articles: FY 2011 Plans: Commence planning and execution of an Analysis of Alternatives (AoA) for the MRMUAS program. Commence drafting of the MRMUAS Concept of Operations. Prepare and award up to five (5) studies and analysis contracts in support of MRMUAS concept refinement. Data received from these contracts will be used to support AoA analyses and drafting of initial Key Performance Parameters/Key System Attributes for the MRMUAS Capability Development Document.	-	14.500 0	-	-	-
Title: Engineering and Technical Services Articles: FY 2011 Plans: Begin engineering management, program technical management, and management support. Begin preparation of Milestone A required documentation. Begin program office personnel travel and contract support services.	-	11.852 0	-	-	-
Accomplishments/Planned Programs Subtotals	-	26.352	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2501: <i>Medium Endurance Marinized UAS Technology Demonstration</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDT&E, 0305237N: <i>Medium Range Maritime UAS</i>	0.000	0.000	15.000	0.000	15.000	160.900	270.500	271.000	311.000	Continuing	Continuing

D. Acquisition Strategy

Conduct full and open competition for up to five (5) Trade Studies and analysis contracts. Initiated industry trade studies and AOA. Transition to MRMUAS PE 0305237N.

E. Performance Metrics

Successfully complete trade studies and analysis.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2501: <i>Medium Endurance Marinized UAS Technology Demonstration</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives Support	SS/FFP	Systems Plan: Alexandria, VA	-	2.000	Apr 2011	-		-		-	0.000	2.000	10.900
Analysis of Alternatives	WR	NAWCAD: Patuxent River, MD	-	2.000	Jan 2011	-		-		-	0.000	2.000	
CONOPS Development	TBD	TBD: TBD	-	0.500	Mar 2011	-		-		-	0.000	0.500	
Study Contracts (Up to 5)	TBD	TBD: TBD	-	10.000	May 2011	-		-		-	0.000	10.000	
Subtotal			-	14.500		-		-		-	0.000	14.500	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD: Patuxent River, MD	-	7.602	Jan 2011	-		-		-	0.000	7.602	
Program Management Support	WR	NAWCAD: Patuxent River, MD	-	4.000	Feb 2011	-		-		-	0.000	4.000	
Travel	WR	NAVAIR: Patuxent River, MD	-	0.250	Jan 2011	-		-		-	0.000	0.250	
Subtotal			-	11.852		-		-		-	0.000	11.852	

Remarks
Travel Contract Type is TO.

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	26.352	-	-	-	0.000	26.352

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2501: <i>Medium Endurance Marinized UAS Technology Demonstration</i>
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Medium Endurance Marinized UAS Technology Demonstration	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones																																
Milestones					▲	◆			▲				▲																			
System Engineering Development																																
Analysis of Alternatives					— AOA —																											
Concept Design Studies					— CD —																											

2012PB - 0305204N - 2501

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 2501: <i>Medium Endurance Marinized UAS Technology Demonstration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Medium Endurance Marinized UAS Technology Demonstration</i>				
Acquisition Milestones: Milestones: Gate 1	2	2011	2	2011
Acquisition Milestones: Milestones: Material Development Decision (MDD)	3	2011	3	2011
Acquisition Milestones: Milestones: Gate 2	2	2012	2	2012
Acquisition Milestones: Milestones: Gate 3A	4	2012	4	2012
System Engineering Development: Analysis of Alternatives: Analysis of Alternatives (AOA)	2	2011	2	2012
System Engineering Development: Concept Design Studies: Concept Design (CD)	3	2011	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 3332: <i>CARGO UAS</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3332: <i>CARGO UAS</i>	26.500	-	-	-	-	-	-	-	-	0.000	26.500
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

CARGO UAS is funded under Program Element 0305204N Project Unit 3332, initiated upon receipt of FY10 Overseas Contingency Operations Supplemental Surge II funding in the amount of \$26.5M, and a Special Operation Forces Rotary Wing Aviation Above Threshold Reprogramming of \$25.0M (not reflected in FY10 total in this exhibit), for 4 proof of concept air vehicles, 6 Forward Operating Bases(FOB) Ground Control Stations, non-recurring engineering and testing efforts.

A. Mission Description and Budget Item Justification

The Cargo UAS will address the immediate Marine Corps need as described in the Joint Urgent Operational Needs Statement (CC-0375) for combat re-supply of remote FOBs without unnecessary risk to Marine Corps personnel or high volume logistics assets. This need has been filled by ground transportation (truck convoys) and with manned assault support cargo rotary wing assets. Both alternatives expose unnecessary risk to Marine Corps personnel, and impact the availability of the aviation assets for other combat support missions. The Cargo UAS service will apply to the deployed I Marine Expeditionary Force (I MEF), Forward, deployed in Afghanistan. The current concept of operations is to provide support from one Main Operating Base to three FOBs.

Current combat operations have highlighted the vulnerability and effectiveness of existing modes of resupply. To mitigate this threat, it is imperative that alternative methods to resupply remote Spokes (also called FOBs) be employed. A vertical lift Cargo UAS is required to augment existing resupply methods in Afghanistan and is required immediately to fulfill war fighter needs. Special Operations Command will monitor the program to help determine their future requirements.

A Cargo UAS is comprised of air vehicles, Ground Control Stations and associated spares and support equipment. The system will support the I MEF, Forward while operating from selected FOBs. The air vehicles and remote terminal control stations are procured by the government, and the Cargo UAS is operated as a Government Owned, Contractor Operated system.

The Cargo UAS was granted Rapid Deployment Capability (RDC) program status by the Assistant Secretary of the Navy for Research, Development and Acquisition on 17 May 2010. The RDC program designation number is to be assigned.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Hardware and System Development	23.388	-	-	-	-
Articles:	4				
FY 2010 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 3332: <i>CARGO UAS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Acquisition of fully compliant Immediate CARGO UAS for sustained operations in Operation Enduring Freedom. Procure 4 air vehicles and 6 FOB ground control stations.					
Title: Development Testing <i>Articles:</i>	2.137 0	-	-	-	-
FY 2010 Accomplishments: Component and flight testing in support of NAVAIR flight clearance.					
Title: Engineering and Technical Services <i>Articles:</i>	0.975 0	-	-	-	-
FY 2010 Accomplishments: Reliability improvements and associated Non-recurring Engineering. Continued government engineering support, contractor support, program support, and travel for the CARGO UAS program.					
Accomplishments/Planned Programs Subtotals	26.500	-	-	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 0708018N: <i>Operations and Maintenance, Marine Corp</i>	0.000	0.000	0.000	53.900	53.900	0.000	0.000	0.000	0.000	0.000	53.900
• 1160482BB: <i>Special Operations Forces (SOF) Rotary Wing Aviation</i>	25.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.000

D. Acquisition Strategy
Awarded two Firm Fixed Price Contracts and will down select to a single contractor for deployment. The deployment services are supported with O&M,MC OCO funding.

E. Performance Metrics
Cargo UAS Availability, Pounds of Cargo delivered per day.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 3332: <i>CARGO UAS</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Primary Hardware Development	C/FFP	Frontier Systems:Irvine, CA	12.444	-		-		-		-	0.000	12.444	41.000
Primary Hardware Development	C/FFP	Lockheed Martin:Owego NY	10.944	-		-		-		-	0.000	10.944	10.944
Subtotal			23.388	-		-		-		-	0.000	23.388	51.944

Remarks
FY10 Primary Hardware Development contracts will increase by \$12.5M each, once the \$25M SOF Rotary Wing Aviation Above Threshold Reprogramming is included in the controls.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Test & Evaluation	Various	Various:Various	2.137	-		-		-		-	0.000	2.137	4.000
Subtotal			2.137	-		-		-		-	0.000	2.137	4.000

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support	WR	NAWCAD:Patuxent River, MD	0.875	-		-		-		-	0.000	0.875	
Travel	WR	NAVAIR:Patuxent River, MD	0.100	-		-		-		-	0.000	0.100	
Subtotal			0.975	-		-		-		-	0.000	0.975	

Remarks
Travel contract type is TO.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 3332: <i>CARGO UAS</i>
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	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	26.500	-	-	-	-	0.000	26.500	

Remarks
 CARGO UAS is funded under Program Element 0305204N Project Unit 3332, initiated upon receipt of FY10 OCO Supplemental Surge II funding in the amount of \$26.5M and a SOF Rotary Wing Aviation ATR of \$25.0M for 4 proof of concept air vehicles, 6 FOB Ground Control Stations, non-recurring engineering and testing efforts.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 3332: <i>CARGO UAS</i>
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Proj 3332	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones																																
Milestones																																
Systems Development																																
Engineering and Manufacturing Development																																
Test and Evaluation																																
Technical Evaluation																																
Operational Evaluation																																
Production Milestones																																
Deliveries																																

2012PB - 0305204N - 3332

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204N: <i>Tactical Unmanned Aer Vehicles</i>	PROJECT 3332: <i>CARGO UAS</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3332				
Acquisition Milestones: Milestones: Milestone Decision Authority Decision	4	2011	4	2011
Acquisition Milestones: Milestones: Cargo Demo Contract Award	1	2011	1	2011
Acquisition Milestones: Milestones: Deploy (OM,MC Funded)	1	2012	4	2012
Systems Development: Engineering and Manufacturing Development: Non-recurring Engineering for System Improvements	1	2011	4	2011
Systems Development: Engineering and Manufacturing Development: Development	1	2011	4	2011
Test and Evaluation: Technical Evaluation: Test and Evaluation	4	2011	4	2011
Test and Evaluation: Technical Evaluation: Development Testing	4	2011	4	2011
Test and Evaluation: Operational Evaluation: Operational Testing	4	2011	4	2011
Production Milestones: Deliveries: 4 Air Vehicles (AV)	4	2011	4	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206N: <i>Airborne Reconnaissance Sys</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	55.082	-	-	-	-	-	-	-	-	0.000	55.082
2694: <i>Advanced Signal Recognition</i>	45.771	-	-	-	-	-	-	-	-	0.000	45.771
9999: <i>Congressional Adds</i>	9.311	-	-	-	-	-	-	-	-	0.000	9.311

A. Mission Description and Budget Item Justification

Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities. These developments are driven by evolving collection requirements and technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy (IARS) and amplified in the Airborne Reconnaissance Information Technical Architecture. The Advanced Sensors Development Program implements successful proof-of-concept efforts accomplished in the Advanced Technology Program, other Service/ Agency developments, and Congressionally-funded initiatives leading to producible sensor systems for airborne platforms. Upon successful sensor prototype demonstration, technology sensor developments are turned over to the Services for procurement and platform integration. This effort focuses on developments, which support sensor system interoperability and standardization of multi-Service and multi-platform applications. In addition, funds provide for the development/integration and operational assessment of components for the EP-3E and P-3 Special Projects Aircraft and follow-on candidate aircraft.

There are two primary objectives for the Advanced Technology funding: (1) to evaluate the utility and maturity of technology for airborne reconnaissance applications and (2) to reduce the risk of employing emerging technologies in system upgrades, new system acquisitions, or Advanced Concept Technology Demonstrations, by integrating and exercising them in developmental and operational tests. These technologies help satisfy the requirements of the objective architecture set forth in the IARS. These technology investments are also identified in the Airborne Reconnaissance Technology Program Plan, published in November 1994.

Exhibits reflect Congressional Adds currently being executed as follows:

FY10 Congressional Add of \$4.332M is for Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance.
 FY10 Congressional Add of \$4.979M is for EP-3E Requirements Capability Migration Technology Integration Lab.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206N: <i>Airborne Reconnaissance Sys</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	55.327	-	-	-	-
Current President's Budget	55.082	-	-	-	-
Total Adjustments	-0.245	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Section 219 Reprogramming	-0.244	-	-	-	-
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: *Fusion, Exploitation, Algorithm, Targeting, High-*

Congressional Add: *EP-3E requirements capability migration technology*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	4.332	-
	4.979	-
Congressional Add Subtotals for Project: 9999	9.311	-
Congressional Add Totals for all Projects	9.311	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not Applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206N: <i>Airborne Reconnaissance Sys</i>	PROJECT 2694: <i>Advanced Signal Recognition</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2694: <i>Advanced Signal Recognition</i>	45.771	-	-	-	-	-	-	-	-	0.000	45.771
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Provides funds for the development of sensor systems to improve present airborne reconnaissance capabilities fielded in both the EP-3E and P-3 Special Projects Aircraft (SPA) platforms. The developments are driven by evolving collection requirements and modern technology advances. The developments allow for the necessary changes required to meet an integrated, objective airborne reconnaissance architecture as defined in the Integrated Airborne Reconnaissance Strategy and amplified in the Airborne Reconnaissance Information Technical Architecture. The advanced sensor program includes technical analysis, systems engineering assessments, planning, and development for advanced airborne sensor systems. This effort focuses on developments which support sensor system interoperability and standardization of multi-Service and multi-platform applications. The EP-3E and Special Projects will undergo a series of incremental modifications via an evolutionary acquisition process which began in FY 2001. The advanced sensor developments described herein will provide the technology transition modules necessary for the overall migration of the airborne fleet to Joint Airborne SIGINT Architecture, (i.e., sensors, ground systems, data links, and platforms), and provide the mechanism required for timely dissemination of intelligence information to operational forces.

FY05 began the integration of Joint Common Configuration (JCC) into all EP-3 aircraft. These efforts carry forward the developments from prior years and continue the development efforts to ensure that EP-3 aircraft maintain their interoperability and relevance to emerging threats and changing technology. This funding provides for the development of the JCC capabilities and Spirals.

In FY06 the JCC program was further restructured due to delays in the Aerial Common Sensor recapitalization program. The restructure added an obsolescence evolution and a JCC Spiral 3 upgrade to maintain EP-3E mission system viability until recapitalization platform can be fielded. This funding supported the required development of the restructured JCC program. The program procured an Environmental Development Model (EDM) in FY06 for Developmental Testing (DT) of the Spiral 2 system in FY07. Spiral 3 includes signal exploitation, low-band direction finding, Remote Tuning Receivers, Integrated Information Operations and Environment Control System upgrades. The program will procure two (2) Spiral 3 EDM's. The first EDM was procured in FY08 for DT of the system in FY09.

The Special Projects Modernization and Common Configuration Baseline (MCCB) program provides rapid insertion of new capabilities including improved communications, collection and analysis capabilities and weight reduction. Additionally, MCCB addresses technology refresh and obsolescence engineering. Most of the MCCB upgrades are based on stand-alone Government-Off-The-Shelf and Commercial-Off-The-Shelf systems.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Spiral 3 development RFD, DF, I/O, ECS	36.064	-	-	-	-
Articles:	0				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206N: <i>Airborne Reconnaissance Sys</i>	PROJECT 2694: <i>Advanced Signal Recognition</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<i>FY 2010 Accomplishments:</i> Spiral 3 development and test included low-band Radio Frequency Distribution and Direction Finding subsystem replacement, Remote Tuning Receivers, Intergrated Information Operations and Environmental Control System upgrades.					
<i>Title:</i> Develop Spiral upgrades to collection subsystems	9.707	-	-	-	-
<i>Articles:</i>	0				
<i>FY 2010 Accomplishments:</i> Imagery engineering investigations completed. Developed and demonstrated SPA Direction Finding upgrades for Special Project Systems Requirements Review. SPA Communications/Infrastructure updated. SPA Modernization and Common Configuration Baseline program. Develop Spiral upgrades to the special collections subsystem, data communications and infrastructure. Address technology refresh and obsolescence issues. Mission system weight reduction development.					
Accomplishments/Planned Programs Subtotals	45.771	-	-	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN/0537: <i>EP-3E Series</i>	92.245	90.323	83.181	20.800	103.981	66.764	56.707	30.576	10.054	34.400	1,264.794
• APN/0567: <i>Special Projects Aircraft</i>	12.331	20.779	12.248	11.184	23.432	15.070	15.279	15.553	15.787	82.970	566.976

D. Acquisition Strategy

Leverages/complements Air Force, Naval Research Laboratory, Office of Naval Research RDTE efforts for technology insertions into EP-3E/SPA production programs.

E. Performance Metrics

Not Applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305206N: <i>Airborne Reconnaissance Sys</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	9.311	-	-	-	-	-	-	-	-	0.000	9.311
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Exhibits reflect Congressional Adds currently being executed as follows:

FY10 Congressional Add of \$4.332M is for Fusion Exploitation Algorithm Targeting High-Altitude Reconnaissance.
 FY10 Congressional Add of \$4.979M is for EP-3E Requirements Capability Migration Technology Integration Lab.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Fusion, Exploitation, Algorithm, Targeting, High-	4.332	-
FY 2010 Accomplishments: This effort developed algorithmic, cueing and software focused efforts in support of the Deployable Unmanned Systems for Targeting, Exploitation, and Reconnaissance (DUSTER) system. This system could simultaneously extend the area of intelligence gathering, keep the operators out of harms way, and provide an airborne real-time exploitation and dissemination node to identify, geo-locate, and track enemy targets.		
Congressional Add: EP-3E requirements capability migration technology	4.979	-
FY 2010 Accomplishments: This effort funded operational systems development in support of the EP-3E Requirements Capability Migration Technology Integration Lab.		
Congressional Adds Subtotals	9.311	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Leverages/complements Air Force, Naval Research Laboratory, Office of Naval Research RDTE efforts for technology insertions into EP-3E/SPA production programs.

E. Performance Metrics

Not required for Congressional Adds.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0305208M: <i>(U)Distributed Common Ground/Surface Systems</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	8.377	23.785	-	23.785	26.847	16.489	14.420	3.780	Continuing	Continuing
2268: <i>Distributed Common Ground System (DCGS-MC)</i>	-	8.377	23.785	-	23.785	26.847	16.489	14.420	3.780	Continuing	Continuing

Note

Topographic Production Capability(TPC),and Tactical Exploitation Group(TEG) have merged into DCGS-MC. Funding for these efforts under PE 0206625M has been realigned to DCGS-MC PE 0305208M effective FY 2011.

A. Mission Description and Budget Item Justification

DCGS-MC, in compliance with the Department of Defense DCGS Family of Systems (FOS) concept, is a service-level effort to migrate select USMC Intelligence, Surveillance and Reconnaissance (ISR) processing and exploitation capabilities into a single, integrated, net-centric baseline that will be interoperable with other services and agencies.

Multiple functional capability sets will be configured to support Marine intelligence analysts across the MAGTF. The goal of DCGS-MC is to make external and internal ISR data more visible, accessible, and understandable.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	8.377	5.533	-	5.533
Current President's Budget	-	8.377	23.785	-	23.785
Total Adjustments	-	-	18.252	-	18.252
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	18.388	-	18.388
• Rate/Misc Adjustments	-	-	-0.136	-	-0.136

Change Summary Explanation

Previous RDT&E funding for DCGS-MC was reported in PE's 0206625M and 0206313M.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0305208M: <i>(U)Distributed Common Ground/Surface Systems</i>

FY12 increase in RDT&E funding reflects DT analysis and Operational Test in preparation for Increment I MS C in FY13. In addition, Increment II Development efforts will commence in FY12. This program also experienced a funding increase to reflect USMC commitment to the program in preparation for a MS B Full-Funding requirement.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208M: <i>(U)Distributed Common Ground/Surface Systems</i>	PROJECT 2268: <i>Distributed Common Ground System (DCGS-MC)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2268: <i>Distributed Common Ground System (DCGS-MC)</i>	-	8.377	23.785	-	23.785	26.847	16.489	14.420	3.780	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Topographic Production Capability (TPC) and Tactical Exploitation Group (TEG) have merged into DCGS-MC. Funding for these efforts under PE 0206625M has been realigned to DCGS-MC PE 0305208M effective FY 2011.

A. Mission Description and Budget Item Justification

Distributed Common Ground System-Marine Corps DCGS-MC, in compliance with the Department of Defense DCGS Family of Systems concept, is a Service-level effort to migrate select USMC Intelligence, Surveillance and Reconnaissance (ISR) processing and exploitation capabilities into a single, integrated, net-centric baseline that will be interoperable with other Services and Agencies.

Multiple functional capability sets will be configured to support Marine intelligence analysts across the Marine Air-Ground Task Force (MAGTF). The goal of DCGS-MC is to make external and internal ISR data more visible, accessible, and understandable.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: TESTING AND EVALUATION SUPPORT	-	1.082	2.120
Articles:		0	0
FY 2011 Plans: Mature the Test and Evaluation Master Plan and resource requirements in support of the Milestone B, Engineering & Manufacturing Development phase while conducting development and integration testing on the initial DCGS-MC Squadron Expeditionary Exploitation Suite capabilities			
FY 2012 Plans: Conduct Operational Testing and a Technology Readiness Review in support of the Increment I DCGS-MC functionality. Conduct Developmental Testing, OUSD-I Sponsored, System Demonstration/Exercise Participation (Empire Challenge) and Limited User Evaluations in support of the Increment II DCGS-MC functionality.			
Title: RESEARCH AND DEVELOPMENT EFFORTS FOR INTEGRATION EFFORTS	-	1.157	7.450
Articles:		0	0
FY 2011 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208M: <i>(U)Distributed Common Ground/Surface Systems</i>	PROJECT 2268: <i>Distributed Common Ground System (DCGS-MC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			
	FY 2010	FY 2011	FY 2012
Continue research development efforts for integrating the DCGS Intelligence Analyst Semantic WIKI, DCGS-MC Common Data Link (CDL) alternatives, and Geospatial Services concepts. FY 2012 Plans: Continue research development efforts for integrating Semantic WIKI enhancements, Full Motion Video, Multi-level security Cross Domain Solutions and Ground Moving Target Indicator implementation. Continue the research and development activities surrounding requirements definition associated with DCGS-MC Increment II, the Intelligence Analyst System, Rapid Technology Insertion activities associated with Semantic WIKI enhancements, Full Motion Video, Multi-level security Cross Domain Solutions and Ground Moving Target Indicator, and integration opportunities associated with follow-on versions of the DCGS Integration Backbone (DIB).			
Title: ENGINEERING AND TECHNICAL SERVICES Articles: FY 2011 Plans: Define the detailed system design, including technical documentation to support the integration and development, as approved by the Critical Design Review. Initiate Requirements derivation and traceability processes. Conduct Program Test Readiness Review and follow-on Developmental Testing (DT). FY 2012 Plans: Conduct requirements analysis and review for the second increment of capability, integrating All Source capabilities into DCGS and identifying and processing the required Engineering Changes, due to emergent requirements and security patches to the increment one system.	-	0.775 0	1.524 0
Title: DESIGN AND DEVELOPMENT OF HARDWARE AND ENTERPRISE SERVICES Articles: FY 2011 Plans: Development of the DCGS-MC Increment 1 baseline for the replacement of TEG and TPC at the Marine Expeditionary Force (MEF) Intelligence Battalion, identify and implement Joint enterprise services, and provide the Increment 1 baseline for full rate production assessment and execution. FY 2012 Plans: Implement initial design and planning for the migration of Increment II Intelligence Analysis System (IAS) All Source capabilities into the DCGS-MC program. Prepare for Increment II Systems requirements Review and Critical Design Review while evaluating	-	5.363 0	12.691 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208M: <i>(U)Distributed Common Ground/Surface Systems</i>	PROJECT 2268: <i>Distributed Common Ground System (DCGS-MC)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Rapid Technology Insertion prototype opportunities for migration into the DCGS baseline, using the DCGS Integration Backbone (DIB). Fund DCGS Management Office for continued DIB upgrades and Enterprise technology migration analysis.			
Accomplishments/Planned Programs Subtotals	-	8.377	23.785

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012			FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• PMC/4747: <i>DCGS-MC</i>	2.535	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.535
• PMC/4767: <i>DCGS-MC</i>	0.000	26.371	10.789	0.000	10.789	19.513	13.510	21.078	8.881	Continuing	Continuing

D. Acquisition Strategy

The Acquisition Strategy shall follow the Hybrid alternative, recommended by the Analysis of Alternatives (AoA), consisting of a viable mix of alternatives that allows flexibility, agility and rapid fielding of new capabilities and will be matured prior to the first MS B to reflect results of the Capability Development Document (CDD), Technology Development Strategy (TDS), and the updated Life Cycle Cost Estimate (LCCE). An Evolutionary Acquisition approach will be solicited from industry for the development of DCGS-MC in order to maintain maximum programmatic agility while reducing cost. Capabilities will be delivered via clearly defined and militarily useful increments.

The specific content of each increment will be determined by an integrated assessment of user needs, technology readiness, risk mitigation, and affordability. Currently, two increments are envisioned with increment I focusing on Geospatial Intelligence incorporating the functions of TEG and TPC and increment II on All Source Intelligence.

E. Performance Metrics

Milestone reviews.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208M: <i>(U)Distributed Common Ground/Surface Systems</i>	PROJECT 2268: <i>Distributed Common Ground System (DCGS-MC)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS	WR	Naval Research Lab:Washington, DC	-	1.157	Nov 2010	1.057	Nov 2011	-		1.057	Continuing	Continuing	Continuing
DCGS	WR	SPAWAR:Charleston, SC	-	-		11.634	Dec 2011	-		11.634	0.000	11.634	
Subtotal			-	1.157		12.691		-		12.691			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS	C/CPFF	NSMA:Stafford, Virginia	-	5.363	Nov 2010	7.450	Nov 2011	-		7.450	0.000	12.813	
Subtotal			-	5.363		7.450		-		7.450	0.000	12.813	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS	C/CPFF	MCOTEA:QUANTICO, VA	-	1.082	Dec 2010	2.120	Dec 2011	-		2.120	0.000	3.202	
Need Item Text	C/CPFF	JITC HUACHUCA:SIERRA VISTA, AZ	-	-		0.224	Nov 2011	-		0.224	0.000	0.224	
Subtotal			-	1.082		2.344		-		2.344	0.000	3.426	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS	SS/CPFF	Concurrent Technologies	-	0.500	Oct 2010	1.000	Oct 2011	-		1.000	0.000	1.500	

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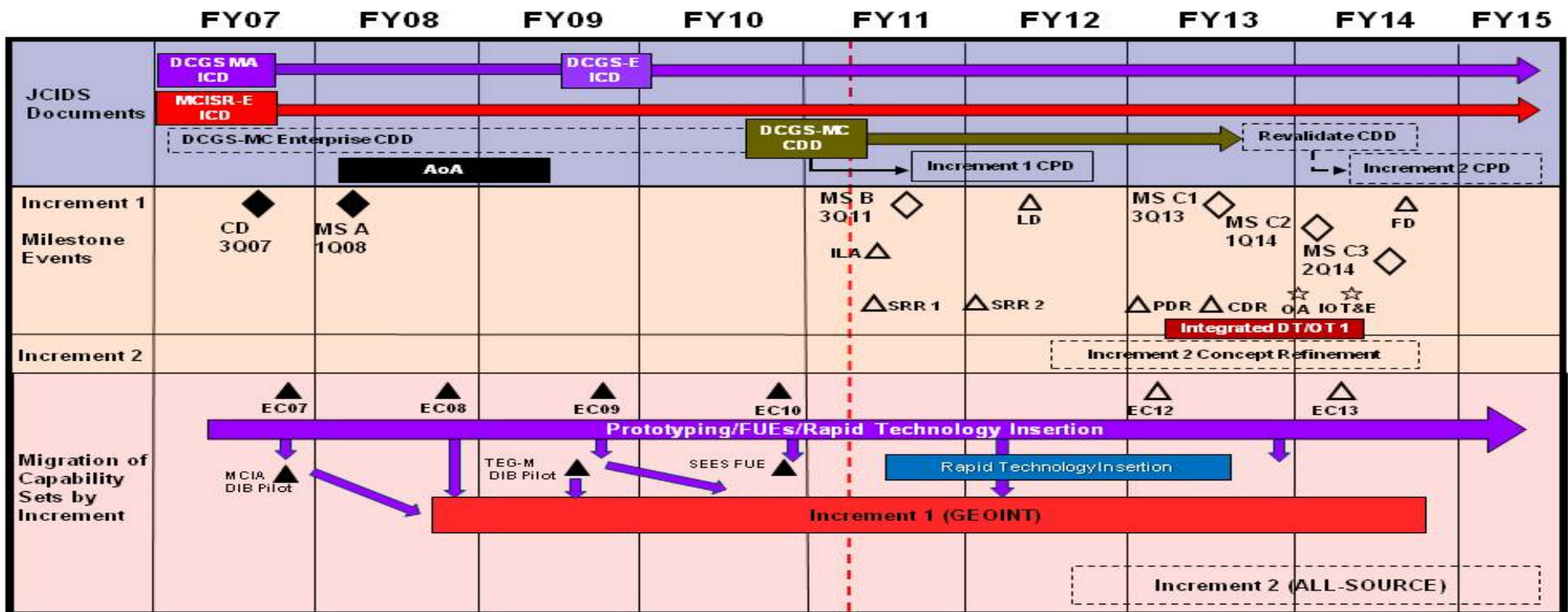
APPROPRIATION/BUDGET ACTIVITY
 1319: Research, Development, Test & Evaluation, Navy
 BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE
 PE 0305208M: (U)Distributed Common
 Ground/Surface Systems

PROJECT
 2268: Distributed Common Ground System
 (DCGS-MC)



Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208M: <i>(U)Distributed Common Ground/Surface Systems</i>	PROJECT 2268: <i>Distributed Common Ground System (DCGS-MC)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2268				
DCGS MILESTONE B	3	2011	3	2011
DCGS SUB-INCR 1 MILESTONE C	3	2013	3	2013
DCGS SUB-INCR 2 MILESTONE C	1	2014	1	2014
DCGSSUB-INCR 3 MILESTONE C	2	2014	2	2014
DCGS CDD	1	2010	1	2011
DCGS DT	3	2013	1	2014
DCGS TEST READINESS REVIEW	4	2013	1	2014
DCGS IOT&E	2	2014	2	2014
DCGS PROTOTYPES	3	2010	4	2012
DCGS INCR 1 LIMITED DELIVERY	2	2012	3	2013
DCGS INCR 1 FULL DELIVERY	3	2014	2	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	11.979	16.665	25.487	-	25.487	17.288	12.521	31.874	32.859	Continuing	Continuing
2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>	11.979	16.665	25.487	-	25.487	17.288	12.521	31.874	32.859	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Distributed Common Ground System - Navy (DCGS-N) is the Navy's portion of the Under Secretary of Defense, Intelligence (USD (I)) DCGS -N Family of Systems (FoS). The Department of Defense (DoD) has defined a DCGS architecture that will be verifiably compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. DCGS will access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data will be shared across a Joint enterprise using the DCGS Integration Backbone (DIB) to enhance access and sharing of ISR information across Joint forces through the use of common enterprise standards and services. DCGS FoS supports Joint Task Force (JTF)-level and below combat operations with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and Overseas Contingency Operations (OCO). DCGS is a cooperative effort between the Services, Agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS-N core components include the Analyst Work Station from the Global Command and Control System (GCCS) - Integrated Imagery and Intelligence (I3), Generic Area Limitation Environment (GALE) Lite Signal Intelligence (SIGINT), Common Geo-positioning Services (CGS), Image Product Library (IPL), Modernized Integrated Database (MIDB), Joint Concentrator Architecture (JCA) and Track Management Services.

The DCGS-N system represents the integration of: 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signals Intelligence (SIGINT); 2) Precision target geopositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA) ; and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting and Command and Control information via DIB and Net-Centric Enterprise Services (NCES) standards with a wide range of customers (e.g., Global Command and Control System - Maritime (GCCS-M)), Joint Mission Planning System (JMAPS), and many others.)

The DCGS-N Enterprise Node (DEN), which incorporates DCGS DIB standards, facilitates interoperability and data sharing among the DOD DCGS FoS. DCGS-N will stay abreast of evolving requirements and ensure compliance with the DOD DCGS network architecture. Engineering work is funded to migrate legacy Joint Services Imagery Processing System - Navy (JSIPS-N) capabilities to this network environment.

The Navy is focusing on establishing an ISR Enterprise way ahead that will emphasize a reach back strategy with a focus on providing intelligence products to support deployed ship and shore operations. The Navy will also initiate migration to a Service Oriented Architecture (SOA) that requires the development, integration, and testing of ISR Enterprise capability (Maritime Operations Centers (MOC) to MOC to afloat), development and migration of ISR SOA applications, and development and integration to leverage the Integrated Shipboard Network System (ISNS) strategy for a Common Computing Environment (CCE). Additionally, DCGS-N will become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis tool applications for the Navy. As a result, the funding profile was modified to

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>
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revise the procurement schedule, maintain the equipment support line, and focus on product improvement for migration to the CCE and support to fielded systems until replaced by DCGS-N systems.

The Navy's Integrated Imagery and Intelligence Applications (I3 Apps) are an integrated set of applications designed to support analyst workflows and tactical intelligence processing, providing a useful integration framework to ensure joint intelligence interoperability across the GCCS and DCGS enterprise. Development of I3 applications includes end to end intelligence analysis applications that leverage the MIDB and integration with NGA-provided digital map and imagery systems. I3 imagery applications provide for archiving, viewing and measurement of still and video images. The Navy's I3 effort is part of the Military Intelligence Program (MIP), managed by the Secretary of Defense through the Assistant Secretary of Defense for Command, Control, Communications, Computers and Intelligence.

Joint Service Imagery Processing System - Navy (JSIPS-N) tech refresh and service life extension upgrades provide shipboard digital imagery capability to receive, exploit, store, and disseminate imagery products based on national, theater, and tactical sensors. JSIPS-N service life extension is comprised of five subsystems: Joint Concentrator Architecture (JCA), Common Geo-positioning Service (CGS), Image Product Library (IPL), Imagery Exploitation Support System (IESS), and the Sharp Display System (SDS). JSIPS-N is the Navy's legacy imagery processing system. JSIPS-N Service Life Extension (JSLEP) will overcome JSIPS-N's end-of-life hardware challenges, software obsolescence, and improve systems reliability until DCGS-N fully replaces JSIPS-N ashore and afloat.

DCGS-N Increment 2 pre-acquisition activities began in Q4 FY10 and will continue into FY11 with a focus on requirements definition, system architecture review and development, acquisition planning, and prototype development and assessment. DCGS-N Increment 2 addresses the significant gaps in tactical and operational multiple intelligence (multi-INT) capabilities. Specific emphasis is placed in the areas of Counter Intelligence/Human Intelligence (CI/HUMINT), Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), Enhanced Signals Intelligence (SIGINT), Non-Traditional ISR (NT - ISR), Open Source and an enhanced capability to exploit full motion video. DCGS-N Increment 2 adds to the capabilities delivered under DCGS-N Increment 1 to provide a robust Navy ISR capability with significant processing and exploitation capabilities that address significant issues for Processing Exploitation and Dissemination (PED). The ashore component of DCGS-N Increment 2 addresses the capability needs identified in the DCGS Enterprise Initial Capabilities Document (ICD) and the Maritime Fusion and Analysis (MFAS) ICD. DCGS-N Increment 2 consists of two components. The first builds on the DCGS-N Enterprise Node, the MDA Enterprise Node and development of the Integrated Maritime Architecture (IMA) at the Office of Naval Intelligence (ONI) to provide the Navy with an ashore backbone that fulfills the operational ISR needs of the MOCs. The second component addresses significant gaps in the afloat ISR capabilities consistent with the Key Performance Parameters (KPPs) identified as deferred in the DCGS-N Increment 1 Capability Production Document (CPD) and complete analysis of PED issues and identify specific solutions to be addressed in DCGS-N Increment 2.

The FY12 development plan includes conducting operational test events and test reviews for DCGS-N Increment 1, Block 1 Early Adopter Engineering Change Proposal build (EA ECP) and develop associated software patch. Complete design, development, and begin developmental testing of Increment 1, Block 2. DCGS-N Increment 1 Block 2 new capabilities to incorporate collection management capabilities, Real-Time Regional Gateway (RTRG), software upgrades for new Navy sensors, and Moving Target Indicator (MTI) processor integration. Deliver two Engineering Development Models (EDM) for DCGS-N Increment 1 Block 2. Continue to conduct I3 operational testing, begin new software development, and provide for the technical migration of standardized, linked intelligence data and imagery software tools and services from a platform-centric model to a SOA. Complete DCGS-N Increment 2 Analysis of Alternatives (AOA), conduct system requirement analysis,

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>
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design, and prototyping in coordination with the DCGS Community of Interest and ONI. Complete DCGS-N Increment 2 Capability Development Document (CDD) and Test and Evaluation Master Plan (TEMP).

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	12.228	16.665	23.777	-	23.777
Current President's Budget	11.979	16.665	25.487	-	25.487
Total Adjustments	-0.249	-	1.710	-	1.710
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	1.917	-	1.917
• Section 219 Reprogramming	-0.209	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.207	-	-0.207
• Congressional General Reductions Adjustments	-0.040	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: The schedule has been updated to include DCGS-N Increment 2 development, milestones, and fielding as identified under the Streamlined Information Technology (IT) Acquisition approach in accordance with the Department of Defense Instruction (DoDI 5000.02) Acquisition process.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>	11.979	16.665	25.487	-	25.487	17.288	12.521	31.874	32.859	Continuing	Continuing
Quantity of RDT&E Articles	0	0	2	0	2	0	0	0	0		

Note
In FY12, funding is realigned from MDA PE 0604231N into DCGS-N PE 0305208N.

A. Mission Description and Budget Item Justification

The Distributed Common Ground System - Navy (DCGS-N) is the Navy's portion of the Under Secretary of Defense, Intelligence (USD (I)) DCGS -N Family of Systems (FoS). The Department of Defense (DoD) has defined a DCGS architecture that will be verifiably compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. DCGS will access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data will be shared across a Joint enterprise using the DCGS Integration Backbone (DIB) to enhance access and sharing of ISR information across Joint forces through the use of common enterprise standards and services. DCGS FoS supports Joint Task Force (JTF)-level and below combat operations with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and Overseas Contingency Operations (OCO). DCGS is a cooperative effort between the Services, Agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS-N core components include the Analyst Work Station from the Global Command and Control System (GCCS) - Integrated Imagery and Intelligence (I3), Generic Area Limitation Environment (GALE) Lite Signal Intelligence (SIGINT), Common Geo-positioning Services (CGS), Image Product Library (IPL), Modernized Integrated Database (MIDB), Joint Concentrator Architecture (JCA) and Track Management Services.

The DCGS-N system represents the integration of: 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signals Intelligence (SIGINT); 2) Precision target geopositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA) ; and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting and Command and Control information via DIB and Net-Centric Enterprise Services (NCES) standards with a wide range of customers (e.g., Global Command and Control System - Maritime (GCCS-M)), Joint Mission Planning System (JMPS), and many others.)

The DCGS-N Enterprise Node (DEN), which incorporates DCGS DIB standards, facilitates interoperability and data sharing among the DOD DCGS FoS. DCGS-N will stay abreast of evolving requirements and ensure compliance with the DOD DCGS network architecture. Engineering work is funded to migrate legacy Joint Services Imagery Processing System - Navy (JSIPS-N) capabilities to this network environment.

The Navy is focusing on establishing an ISR Enterprise way ahead that will emphasize a reach back strategy with a focus on providing intelligence products to support deployed ship and shore operations. The Navy will also initiate migration to a Service Oriented Architecture (SOA) that requires the development, integration, and testing of ISR Enterprise capability (Maritime Operations Centers (MOC) to MOC to afloat), development and migration of ISR SOA applications, and development and

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0305208N: <i>Distributed Common Ground Sys</i>	2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>

integration to leverage the Integrated Shipboard Network System (ISNS) strategy for a Common Computing Environment (CCE). Additionally, DCGS-N will become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis tool applications for the Navy. As a result, the funding profile was modified to revise the procurement schedule, maintain the equipment support line, and focus on product improvement for migration to the CCE and support to fielded systems until replaced by DCGS-N systems.

The Navy's Integrated Imagery and Intelligence Applications (I3 Apps) are an integrated set of applications designed to support analyst workflows and tactical intelligence processing, providing a useful integration framework to ensure joint intelligence interoperability across the GCCS and DCGS enterprise. Development of I3 applications includes end to end intelligence analysis applications that leverage the MIDB and integration with NGA-provided digital map and imagery systems. I3 imagery applications provide for archiving, viewing and measurement of still and video images. The Navy's I3 effort is part of the Military Intelligence Program (MIP), managed by the Secretary of Defense through the Assistant Secretary of Defense for Command, Control, Communications, Computers and Intelligence.

Joint Service Imagery Processing System - Navy (JSIPS-N) tech refresh and service life extension upgrades provide shipboard digital imagery capability to receive, exploit, store, and disseminate imagery products based on national, theater, and tactical sensors. JSIPS-N service life extension is comprised of five subsystems: Joint Concentrator Architecture (JCA), Common Geo-positioning Service (CGS), Image Product Library (IPL), Imagery Exploitation Support System (IESS), and the Sharp Display System (SDS). JSIPS-N is the Navy's legacy imagery processing system. JSIPS-N Service Life Extension (JSLEP) will overcome JSIPS-N's end-of-life hardware challenges, software obsolescence, and improve systems reliability until DCGS-N fully replaces JSIPS-N ashore and afloat.

DCGS-N Increment 2 pre-acquisition activities began in Q4 FY10 and will continue into FY11 with a focus on requirements definition, system architecture review and development, acquisition planning, and prototype development and assessment. DCGS-N Increment 2 addresses the significant gaps in tactical and operational multiple intelligence (multi-INT) capabilities. Specific emphasis is placed in the areas of Counter Intelligence/Human Intelligence (CI/HUMINT), Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), Enhanced Signals Intelligence (SIGINT), Non-Traditional ISR (NT - ISR), Open Source and an enhanced capability to exploit full motion video. DCGS-N Increment 2 adds to the capabilities delivered under DCGS-N Increment 1 to provide a robust Navy ISR capability with significant processing and exploitation capabilities that address significant issues for Processing Exploitation and Dissemination (PED). The ashore component of DCGS-N Increment 2 addresses the capability needs identified in the DCGS Enterprise Initial Capabilities Document (ICD) and the Maritime Fusion and Analysis (MFAS) ICD. DCGS-N Increment 2 consists of two components. The first builds on the DCGS-N Enterprise Node, the MDA Enterprise Node and development of the Integrated Maritime Architecture (IMA) at the Office of Naval Intelligence (ONI) to provide the Navy with an ashore backbone that fulfills the operational ISR needs of the MOCs. The second component addresses significant gaps in the afloat ISR capabilities consistent with the Key Performance Parameters (KPPs) identified as deferred in the DCGS-N Increment 1 Capability Production Document (CPD) and complete analysis of PED issues and identify specific solutions to be addressed in DCGS-N Increment 2.

The FY12 development plan includes conducting Follow-On Test and Evaluation (FOT&E) on Increment 1, Block 1 EA ECP and develop associated software patch. Complete design, development, and begin developmental testing of Increment 1, Block 2. DCGS-N Increment 1 Block 2 new capabilities to incorporate collection management capabilities, Real-Time Regional Gateway (RTRG), software upgrades for new Navy sensors, and Moving Target Indicator (MTI) processor integration. Continue to conduct I3 operational testing, begin new software development, and provide for the technical migration of standardized, linked intelligence data and imagery software tools and services from a platform-centric model to a SOA. Deliver two Engineering Development Models (EDM) for DCGS-N Increment 1 Block

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>
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2. Complete DCGS-N Increment 2 Analysis of Alternatives (AOA), conduct system requirement analysis, design, and prototyping in coordination with the DCGS Community of Interest and ONI. Complete DCGS-N Increment 2 Capability Development Document (CDD) and Test and Evaluation Master Plan (TEMP).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: DCGS-N Increment 1</p> <p align="right">Articles:</p>	10.460	14.900	15.022
<p>FY 2010 Accomplishments: Increment 1: Migration to the Navy's Common Computing Environment (CCE) / Afloat Core Services (ACS). Began development of DCGS-N Increment 1 Block 1 Early Adopter Engineering Change Proposal (EA ECP) architecture, design, and prototyping efforts which continues integration of common hardware and Service Oriented Architecture (SOA) applications leveraging the Integrated Shipboard Network System (ISNS) and Special Compartmented Information (SCI) Local Area Network (LAN) hardware and software infrastructure. Successfully, participated in EMPIRE CHALLENGE - 10 demonstrated interoperability between DCGS Family of Systems (FoS) utilizing the operational DCGS-N Enterprise Node (DEN) capability over Secret Internet Protocol Router Network (SIPRNet).</p> <p>I3: Integrated Imagery and Intelligence (I3) funding transitioned into the DCGS-N PE 0305208N in FY10, funds were previously budgeted under the Tactical Command System budget PE 0604231N. Continued to conduct operational testing, began new software development, and provided for the technical migration of standardized, linked intelligence data and imagery software tools and services from a platform-centric model to a Services Oriented Architecture (SOA). The RDT&E focus included modernizing interfaces between Special Intelligence (SI) Tools and Global Command and Control System (GCCS) / DCGS Middle and Data Tier services and Consolidated Afloat Network Enterprise Services (CANES) Infrastructure and the migration to National Geospatial Intelligence (GEOINT) Core Services (National Geospatial-Intelligence Agency (NGA) SOA). Efforts included support for end to end intelligence analysis tools that leverage Modernized Integrated Database (MIDB), NGA-related digital mapping and imagery products, and other intelligence support streams, while continuing to ensure joint intelligence interoperability across the GCCS and DCGS enterprise.</p> <p>FY 2011 Plans: Conduct System Integration Testing (SIT) and Developmental Test and Evaluation (DT&E) test events and Operation Test Readiness Review (OTRR) for the DCGS-N Increment 1 Block 1 EA ECP build. Increment 1 Block 2 requirements definition to begin incorporating collection management capabilities, Real-Time Regional Gateway (RTRG), software upgrades for new Navy sensors, and Moving Target Indicator (MTI) processor integration. Begin updating/developing the Block 2 Test and Evaluation Master Plan (TEMP) and commence development of two Block 2 Engineering Development Models (EDM). DCGS-N Requirements Working Group (DRWG) efforts in FY11 include updating and socializing specific DCGS-N Block 1 & 2 capabilities in support of Capabilities Production Document (CPD) requirements. DCGS-N's RDTE focus for I3 specific components is on</p>	0	0	2

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
migration to CANES, CCE, SOA, widget related efforts, DCGS-N Enterprise Services, and environment, including transition to Common PC Operating System Environment (COMPOSE) 4.X. FY 2012 Plans: Conduct Follow-On Test and Evaluation (FOT&E) on Increment 1, Block 1 EA ECP and develop associated software patch. Complete design, development, and begin developmental testing of Increment 1, Block 2. New capabilities to include collection management capabilities, Real-Time Regional Gateway (RTRG), software upgrades for new Navy sensors, and Moving Target Indicator (MTI) processor integration. Deliver two Engineering Development Models (EDM) for DCGS-N Increment 1 Block 2. DCGS-N's RDTE focus for I3 specific components is on migration to CANES, CCE, SOA, widget related efforts, DCGS-N Enterprise Services, and environment, including transition to COMPOSE 4.X.				
Title: DCGS-N Increment 2 FY 2010 Accomplishments: Finished the DCGS-N Increment 2 Gap Analysis. Defined the transition of Maritime Domain Awareness (MDA) capabilities into DCGS-N Increment 2 Program of Record as identified in the Maritime Fusion and Analysis Services (MFAS) Initial Capabilities Document (ICD). Began the pre-acquisition activities including initial requirements analysis, and began defining the acquisition strategy that will lead to a Material Development Decision (MDD). FY 2011 Plans: Manage a Material Development Decision (MDD). Manage an Analysis of Alternatives (AOA), Capability Development Document (CDD) development, and conduct cost analysis based on AOA findings. Manage prototyping activities in coordination with the Office of Naval Intelligence (ONI) to address capability gaps associated with the establishment of a robust Navy ISR enterprise infrastructure building on the DCGS-N Enterprise Node, the MDA Enterprise Node and the Integrated Maritime Architecture (IMA). FY 2012 Plans: Complete an Analysis of Alternatives (AOA), Capability Development Document (CDD) , and conduct cost analysis based on AOA findings. Prepare a Program Build Decision (BD) for DCGS-N Increment 2. Complete Increment 2 Test and Evaluation Master Plan (TEMP). Continue to conduct exploratory studies, system requirements analysis, design, and prototyping in coordination with the DCGS Community Of Interest (COI) and the Office of Naval Intelligence (ONI) to ensure a solution that operates within both the DCGS and Integrated Maritime Architecture (IMA) environments. Synchronize Increment 2 design and development with the on going evolution of Cloud Computing supporting the intelligence community.		Articles: 0.256 0	0.765 0	10.465 0
Title: JSIPS-N		0.263 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p><i>FY 2010 Accomplishments:</i> Joint Services Imagery Processing System - Navy (JSIPS-N): Conducted Follow-on Operational Test and Evaluation (FOT&E) for service life extension upgrades. Supported Demonstration Test and Operational Test (DT&OT) on the CVN72.</p> <p><i>Title:</i> Common Security and Discovery Services Increment 1</p>			
<i>Articles:</i>	1.000 0	1.000 0	-
<p><i>FY 2010 Accomplishments:</i> Continued participation in development and demonstration of NCES; Continued to follow Pilot Plan; integrated DCGS testbed capabilities into Project Plan.</p> <p><i>FY 2011 Plans:</i> Complete participation in development and demonstration of NCES; Continue to follow Pilot Plan; integrate DCGS testbed capabilities into Project Plan.</p>			
Accomplishments/Planned Programs Subtotals	11.979	16.665	25.487

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN 2914: <i>Distributed Common Ground System-Navy (DCGS-N)</i>	23.847	16.634	11.201	0.000	11.201	14.403	21.212	30.223	36.163	Continuing	Continuing

D. Acquisition Strategy

The Distributed Common Ground System - Navy (DCGS-N) program will utilize mature Commercial Off The Shelf (COTS) and Governmental Off The Shelf (GOTS) capabilities. The Navy plan is to adapt and integrate these capabilities and ensure interoperability with the DCGS Integration Backbone (DIB) standards. Integration of DCGS-N Increment 1 components has transitioned from Government-led to Industry-led based on the award of DCGS-N's Prime Mission Product (PMP) contract. The DCGS-N Increment 2 streamlined Information Technology (IT) acquisition strategy is based on an accelerated acquisition model as defined in the Department of Defense Instructions (DoDI 5000.02) tailoring restructuring. DCGS-N Increment 2 acquisition strategy calls for an accelerated approval for the Capabilities Development Document (CDD) to meet a Program Build Decision (BD) for DCGS-N Increment 2 Release 1. DCGS-N Increment 2 capabilities will be developed through an evolutionary process that calls for multiple releases. The first planned DCGS-N Increment 2 release establishes an ISR capability supporting the Tasking, Processing Exploitation Dissemination (TPED) needs of the Fleet. DCGS-N Increment 2 Release 2 provides Multi-Intelligence (multi-INT) ISR capabilities to Navy forces afloat and ashore Maritime Operation Centers (MOC) that capitalize on a robust ashore enterprise. Subsequent releases will meet deferred capability gaps and take advantage of the migration to Cloud Computing capabilities currently underway within the Intelligence community.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>

E. Performance Metrics

DCGS-N Increment 1 GOAL: Provide Fleet with additional migration to the Navy's Common Computing Environment (CCE) / Afloat Core Services (ACS).
DCGS-N Increment 1 METRIC: Test Increment 1 Block 1 Early Adopters Engineering Change Proposal (EA ECP) and develop two DCGS-N Increment 1 Block 2 Engineering Development Models (EDM).

DCGS-N Increment 2 GOAL: Develop a multi-INT ISR capability that supports afloat forces through a robust enterprise ISR capability supporting maritime needs for processing, exploitation, and dissemination..
DCGS-N Increment 2 METRIC: Complete Analysis of Alternatives (AOA), initiate prototype development leading to DCGS-N Increment 2 Release 1 and Release 2 capability decisions. Define enterprise architecture and the integration of DCGS-N with the Integrated Maritime Architecture (IMA). Complete DCGS-N Increment 2 CDD, develop Test and Evaluation Master Plan (TEMP) and conduct prototyping to support final design decision.

I3 GOAL: Demonstrate Integrated Imagery and Intelligence (I3) capabilities within DCGS-N Increment 1.
I3 METRIC: Synch and enhance DCGS-N software deliveries to accommodate system user requirements, data interfaces, integration, configuration, and testing.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various:Various	5.085	-		-		-		-	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPAF	BAE:Rancho Bernardo, CA	2.013	0.318	Nov 2010	0.400	Nov 2011	-		0.400	Continuing	Continuing	Continuing
Systems Engineering (prior)	Various	Various:Various	8.753	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	C/CPAF	JFCOMM:Norfolk, VA	5.634	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	C/CPAF	BAE:Rancho Bernardo, CA	20.924	5.323	Nov 2010	6.000	Nov 2011	-		6.000	Continuing	Continuing	Continuing
Systems Engineering	C/CPAF	LMSI:Valley Forge, PA	4.432	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC Lant:Charleston, SC	7.181	1.591	Oct 2010	2.370	Oct 2011	-		2.370	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	SETA SAIC:Columbia, MD	1.273	1.887	Oct 2010	2.400	Oct 2011	-		2.400	Continuing	Continuing	Continuing
Systems Engineering	Various	SAIC:Columbia, MD	4.804	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	C/CPAF	L3:Chantilly, VA	3.582	0.588	Dec 2010	0.500	Dec 2011	-		0.500	Continuing	Continuing	Continuing
Licenses	Various	BAE, SSC Lant:Various	0.660	-		-		-		-	Continuing	Continuing	Continuing
Primary Hardware Development	WR	SSC Lant:Charleston, SC	-	0.191	Oct 2010	-		-		-	0.000	0.191	
Systems Engineering	WR	SSC PAC:San Diego, CA	-	0.840	Oct 2010	1.800	Oct 2011	-		1.800	0.000	2.640	
Licenses	C/CPAF	SSC LANT:Charleston, SC	-	0.075	Nov 2010	0.080	Dec 2011	-		0.080	0.000	0.155	
Systems Engineering	C/CPAF	Unkown (PMP):Unknown	-	-		1.500	Nov 2011	-		1.500	0.000	1.500	
Subtotal			64.341	10.813		15.050		-		15.050			

Remarks
 Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Development Support (prior)	Various	Various:Various	4.136	-		-		-		-	Continuing	Continuing	Continuing
Software Development	C/CPAF	BAE, NG:Various	16.733	-		-		-		-	Continuing	Continuing	Continuing
Integrated Logistics Support	Various	L3, SAIC:Various	4.380	-		-		-		-	Continuing	Continuing	Continuing
Configuration Management	C/CPAF	L3:Chantilly, VA	2.353	-		-		-		-	Continuing	Continuing	Continuing
Technical Data	Various	L3, SSC CHAS:Various	0.577	-		-		-		-	Continuing	Continuing	Continuing
Development Support	C/CPFF	SETA SAIC:Columbia, MD	-	0.331	Nov 2010	0.300	Oct 2011	-		0.300	0.000	0.631	
Development Support	WR	SSC Lant:Charleston, SC	-	0.280	Oct 2010	0.200	Oct 2011	-		0.200	0.000	0.480	
Development Support	C/CPAF	Unknown:Unknown	-	-		2.000	Nov 2011	-		2.000	0.000	2.000	
Software Development	C/CPAF	Northrop Grumman:Los Angeles, CA	-	0.949	Nov 2010	0.950	Nov 2011	-		0.950	0.000	1.899	
Software Development	C/CPAF	BAE:Rancho Bernardo, CA	-	0.334	Nov 2010	0.400	Nov 2011	-		0.400	0.000	0.734	
Integrated Logistics Support	C/CPFF	Unknown:Unknown	-	-		0.500	Nov 2011	-		0.500	0.000	0.500	
Integrated Logistics Support	WR	SSC Lant:Charleston, SC	-	0.737	Oct 2010	0.950	Oct 2011	-		0.950	0.000	1.687	
Configuration Management	WR	SSC Lant:Charleston, SC	-	0.658	Oct 2010	0.550	Oct 2011	-		0.550	0.000	1.208	
Subtotal			28.179	3.289		5.850		-		5.850			

Remarks
Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	
Developmental Test & Evaluation	Various	SAIC, L3, SSC LANT:Various	10.443	-		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	Various	SAIC, NAWC, NGES, OPTEVFOR, NSWC Corona:Various	5.056	-		-		-		-	Continuing	Continuing	Continuing
Developmental Test & Evaluation	C/CPAF	BAE:Rancho Bernardo, CA	-	0.366	Nov 2010	0.120	Nov 2011	-		0.120	0.000	0.486	
Developmental Test & Evaluation	WR	SSC Lant:Charleston, SC	-	0.747	Oct 2010	-		-		-	0.000	0.747	
Operational Test & Evaluation	WR	SSC Pac:San Diego, CA	-	0.118	Oct 2010	0.120	Oct 2011	-		0.120	0.000	0.238	
Operational Test & Evaluation	C/CPAF	BAE:Rancho Bernardo, CA	-	-		1.360	Nov 2011	-		1.360	0.000	1.360	
Operational Test & Evaluation	WR	SSC Lant:Charleston, CA	-	-		0.240	Oct 2011	-		0.240	0.000	0.240	
Subtotal			15.499	1.231		1.840		-		1.840			

Remarks
Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPAF	SAIC:Columbia, MD	1.316	-		-		-		-	Continuing	Continuing	Continuing
Travel	Allot	SPAWAR:San Diego, CA	0.519	0.140	Oct 2010	0.160	Oct 2011	-		0.160	Continuing	Continuing	Continuing
Government Engineering Support	WR	SSC Lant:Charleston, SC	0.884	0.400	Oct 2010	0.200	Oct 2011	-		0.200	0.000	1.484	
Program Management Support	C/CPFF	PSS BAH:Washington, DC	-	0.248	Nov 2010	1.323	Nov 2011	-		1.323	0.000	1.571	
	WR		-	0.339	Oct 2010	0.839	Oct 2011	-		0.839	0.000	1.178	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support		SSC Lant:Charleston, SC											
Program Management Support	WR	SSC Pac:San Diego, CA	-	0.205	Oct 2010	0.225	Oct 2011	-		0.225	0.000	0.430	
Subtotal			2.719	1.332		2.747		-		2.747			

Remarks
Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	110.738	16.665		25.487		-		25.487			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

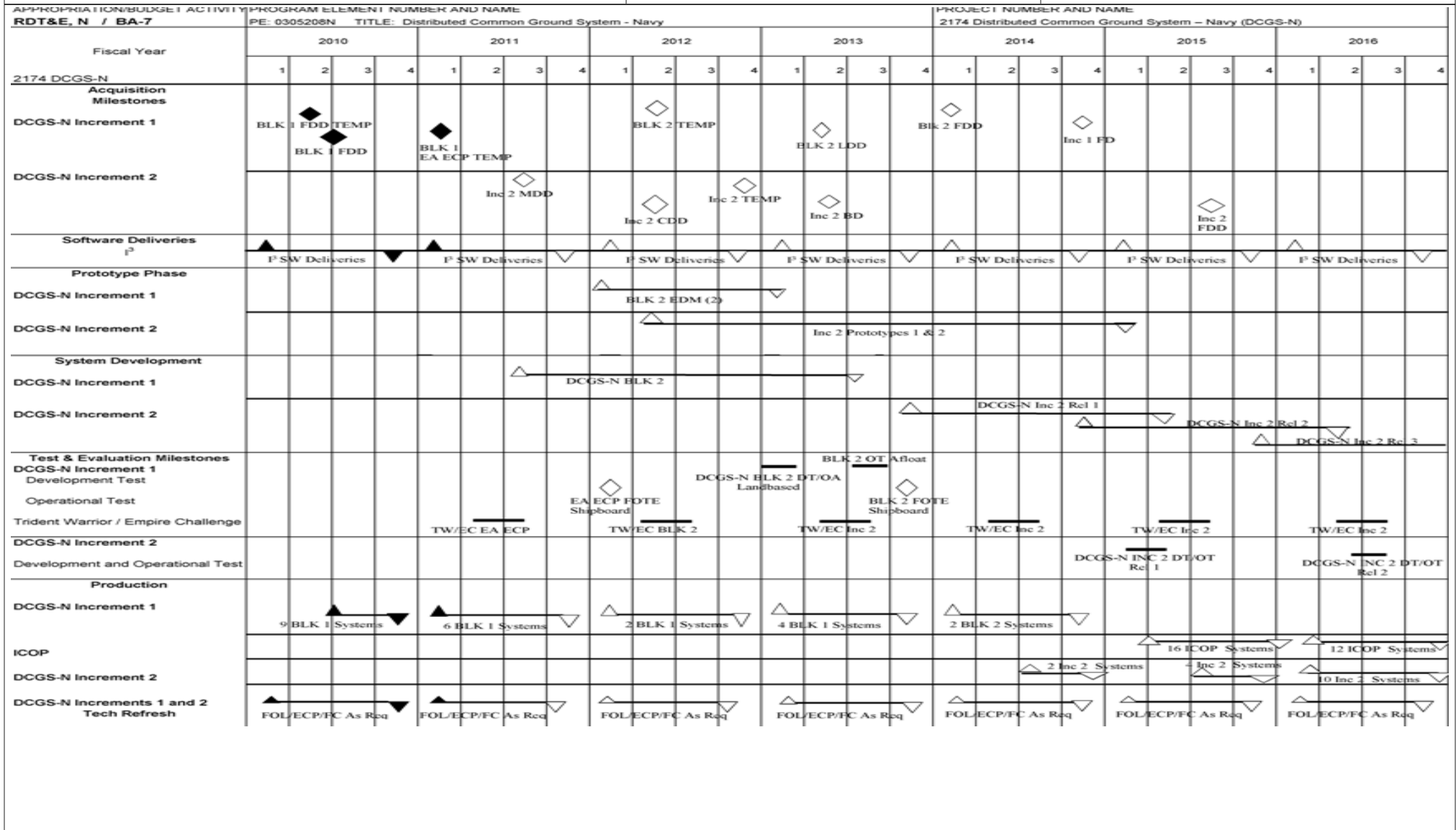
1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305208N: *Distributed Common Ground Sys*

PROJECT

2174: *Distributed Common Ground System-Navy (DCGS-N)*



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2174				
DCGS-N BLK 2 DT/OT Landbased	1	2013	1	2013
DCGS-N BLK 2 FOTE Shipboard	4	2013	4	2013
DCGS-N Inc 2 Release 1 DT/OT Landbased	1	2015	2	2015
Trident Warrior / Empire Challenge EA ECP 2011	2	2011	3	2011
Trident Warrior / Empire Challenge BLK 2 2012	2	2012	3	2012
Trident Warrior / Empire Challenge Inc 2 2013	2	2013	3	2013
Trident Warrior / Empire Challenge Inc 2 2014	2	2014	3	2014
Trident Warrior / Empire Challenge Inc 2 2015	2	2015	3	2015
I3 Software Deliveries 2010	1	2010	4	2010
I3 Software Deliveries 2011	1	2011	4	2011
I3 Software Deliveries 2012	1	2012	4	2012
I3 Software Deliveries 2013	1	2013	4	2013
I3 Software Deliveries 2014	1	2014	4	2014
I3 Software Deliveries 2015	1	2015	4	2015
DCGS-N BLK 2 Development	3	2011	3	2013
DCGS-N Inc 2 Release 1 Development	4	2013	2	2015
DCGS-N Inc 2 Release 2 Development	4	2014	2	2016
DCGS-N BLK 1 FDD	3	2010	3	2010
DCGS-N Increment 2 TEMP	4	2012	4	2012
DCGS-N Inc 2 BD	2	2013	2	2013
DCGS-N BLK 2 LDD	2	2013	2	2013

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208N: <i>Distributed Common Ground Sys</i>	PROJECT 2174: <i>Distributed Common Ground System-Navy (DCGS-N)</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
DCGS-N Inc 1 FD	4	2014	4	2014
DCGS-N Inc 2 CDD	2	2012	2	2012
DCGS-N Inc 2 Procurement	3	2014	4	2016
DCGS-N Inc 1 BLK 1 EA ECP TEMP	1	2011	1	2011
ICOP Procurement	2	2015	4	2016
DCGS-N Inc 1 BLK 2 TEMP	2	2012	2	2012
DCGS-N Inc 2 MDD	3	2011	3	2011
DCGS-N BLK 2 OT AFLOAT	3	2013	3	2013
DCGS-N Inc 1 FDD TEMP	2	2010	2	2010
DCGS-N Inc 2 FDD	3	2015	3	2015
DCGS-N Inc 1 Procurement	3	2010	4	2014
EA ECP FOTE (Shipboard)	1	2012	1	2012
Trident Warrior / Empire Challenge Inc 2 2016	2	2016	3	2016
DCGS-N Inc 1 BLK 2 EDM (2)	1	2012	1	2013
DCGS-N Inc 2 Prototypes 1 & 2	2	2012	1	2015
DCGS-N Inc 2 Release 2 DT/OT	2	2016	3	2016
DCGS-N Inc 1 and Inc 2 Tech Refresh	1	2010	4	2016
I3 Software Deliveries 2016	1	2016	4	2016
DCGS-N Inc 2 Release 3 Development	1	2014	1	2014
DCGS-N Inc 1 BLK 2 FDD	1	2014	1	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	438.199	529.250	548.482	-	548.482	681.775	228.229	165.480	233.161	Continuing	Continuing
4020: <i>BAMS UAS</i>	438.199	529.250	548.482	-	548.482	681.775	228.229	165.480	233.161	Continuing	Continuing

A. Mission Description and Budget Item Justification

RQ-4 Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS)

The BAMS RQ-4 is a High Altitude-Long Endurance UAS designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

The RQ-4 air vehicle is based on Northrop Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five orbits inside and outside continental United States, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infra-red and Electronic Support Measures systems. Additionally, the RQ-4 will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCENet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships.

RQ-4 will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported Combatant Command or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture. The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment. Additionally, BAMS UAS will be a FORCENet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy Information Backbone.

This PE includes funding in FY15-16 for future incremental development in support of BAMS Increment 3 signals intelligence (SIGINT) capability.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	439.010	529.250	540.992	-	540.992
Current President's Budget	438.199	529.250	548.482	-	548.482
Total Adjustments	-0.811	-	7.490	-	7.490
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.007	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	9.998	-	9.998
• Section 219 Reprogramming	-0.794	-	-	-	-
• Rate/Misc Adjustments	-	-	-2.508	-	-2.508
• Congressional General Reductions Adjustments	-0.010	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4020: <i>BAMS UAS</i>	438.199	529.250	548.482	-	548.482	681.775	228.229	165.480	233.161	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

RQ-4 Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS).

RQ-4 is a High Altitude-Long Endurance UAS designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft, and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

The RQ-4 air vehicle is based on Northrop Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five orbits inside and outside the continental United States, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infra-red and Electronic Support Measures systems. Additionally, BAMS will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCENet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships.

RQ-4 will play a significant role in the Sea Shield and FORCENet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported Combatant Command or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture. The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment. Additionally, RQ-4 will be a FORCENet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy Information Backbone.

The RQ-4 system is an evolutionary based acquisition, using an incremental development approach. Two Mission Need Statements (MNSs) support the requirement; 1) BAMS and Littoral Armed ISR MNS, and 2) Long Endurance, Reconnaissance, Surveillance and Target Acquisition Capability MNS. The BAMS UAS Capability Development Document was approved May 2007 by the Joint Requirements Oversight Council.

This PE includes funding in FY15-16 for future incremental development in support of BAMS Increment 3 signals intelligence (SIGINT) capability.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Product Development	416.180	499.042	512.196
Articles:	0	0	0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>Description: Awarded contract in FY08 to initiate the Engineering and Manufacturing Development (EMD) phase effort. The Prime Contractor is responsible for overall system development and performance, as well as associated management, engineering and logistics activities.</p> <p>FY 2010 Accomplishments: Continued EMD, including Government engineering support related to EMD.</p> <p>FY 2011 Plans: Continue EMD, including Government engineering support related to EMD.</p> <p>FY 2012 Plans: Continue EMD, including purchase of long lead materials in support of FY13 Low Rate Initial Production vehicles and Government engineering support related to EMD.</p>				
<p>Title: ILS, Support, Studies & Analysis</p> <p>Description: Integrated Logistics Support, Studies and Analysis.</p> <p>FY 2010 Accomplishments: Continued integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.</p> <p>FY 2011 Plans: Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.</p> <p>FY 2012 Plans: Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.</p>		<p>Articles:</p> <p>11.928 0</p>	<p>12.625 0</p>	<p>14.105 0</p>
<p>Title: Program Management</p> <p>Description: Program Management Support and travel.</p>		<p>Articles:</p> <p>5.434 0</p>	<p>6.600 0</p>	<p>6.854 0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p><i>FY 2010 Accomplishments:</i> Continued the following: Program Management Support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and Joint and International Cooperation efforts.</p> <p><i>FY 2011 Plans:</i> Continue the following: Program Management Support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and Joint and International Cooperation efforts.</p> <p><i>FY 2012 Plans:</i> Continue the following: Program Management Support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and Joint and International Cooperation efforts.</p>			
<p><i>Title:</i> Test & Evaluation (T&E)</p> <p align="right"><i>Articles:</i></p>	4.657 0	10.983 0	15.327 0
<p><i>Description:</i> T&E efforts.</p> <p><i>FY 2010 Accomplishments:</i> Continued test and evaluation support activities to allow test and fielding of the BAMS UAS.</p> <p><i>FY 2011 Plans:</i> Continue test and evaluation support activities to allow test and fielding of the BAMS UAS.</p> <p><i>FY 2012 Plans:</i> Continue test and evaluation support activities to allow test and fielding of the BAMS UAS.</p>			
Accomplishments/Planned Programs Subtotals	438.199	529.250	548.482

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE/0305205N: <i>BAMS UAS</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	588.909

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012	FY 2012	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• APN-4/044200: <i>RQ-4 UAV</i> <i>(BAMS UAV)</i>	0.000	0.000	0.000	0.000	0.000	48.166	582.210	585.724	609.629	7,851.816	9,677.545
• APN-6/060510: <i>BAMS UAV</i>	0.000	0.000	0.000	0.000	0.000	0.000	29.520	90.326	91.809	1,166.700	1,378.355
• MILCON/0816376N: <i>Broad Area</i> <i>Maritime Surveillance T&E Facility</i>	0.000	42.211	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.211
• MILCON/0815976N: <i>Facilities</i> <i>New Footprint</i>	0.000	0.000	4.482	0.000	4.482	77.930	76.139	108.843	35.224	76.054	378.672

D. Acquisition Strategy

The BAMS UAS is an evolutionary-based acquisition, using an incremental development approach. During the pre-Milestone B phase, the program performed technical risk reduction through studies and demonstrations, EMD contract preparation, and Milestone B documentation development activities. Milestone B occurred on 8 April 2008 and EMD award occurred on 22 April 2008. The EMD contract was based on a competitive selection process for a Prime Contractor.

The BAMS UAS program office is pursuing joint efficiency with the Air Force on the Global Hawk UAS. However, the integration of the BAMS UAS into the Maritime Patrol Reconnaissance Force and the unique maritime sensors employed dictate a Navy-led acquisition program focused on joint efficiencies, where possible.

E. Performance Metrics

Successfully achieve Critical Design Review, Flight Readiness Review, Milestone C, Integrated Test, and Operational Evaluation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	Northrop Grumman: Bethpage, NY	379.674	458.608	Nov 2010	465.498	Nov 2011	-		465.498	1,043.142	2,346.922	2,346.922
Systems Engineering	Various	Various: Various	2.408	0.961	Nov 2010	1.278	Nov 2011	-		1.278	1.071	5.718	
Award Fees	C/CPAF	Northrop Grumman: Bethpage, NY	6.882	10.234	Dec 2011	12.533	Dec 2011	-		12.533	38.452	68.101	68.101
Systems Engineering	WR	NAWC-AD: Patuxent River, MD	25.937	27.916	Nov 2010	31.548	Nov 2011	-		31.548	66.119	151.520	
Systems Engineering	WR	NAWC-WD: China Lake, CA	1.279	1.323	Nov 2010	1.339	Nov 2011	-		1.339	4.428	8.369	
Subtotal			416.180	499.042		512.196		-		512.196	1,153.212	2,580.630	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various: Various	2.825	3.855	Nov 2010	3.933	Nov 2011	-		3.933	26.217	36.830	
Integrated Logistics Support	Various	Various: Various	0.305	0.930	Nov 2010	1.799	Nov 2011	-		1.799	3.761	6.795	
Development Support	MIPR	CECOM: Ft. Monmouth, NJ	3.500	2.570	Dec 2010	2.362	Dec 2011	-		2.362	8.192	16.624	
Integrated Logistics Support	WR	NAWC-AD: Patuxent River, MD	3.521	4.225	Nov 2010	4.955	Nov 2011	-		4.955	15.123	27.824	
Integrated Logistics Support	WR	NAWC-TSD: Orlando, FL	1.009	1.045	Nov 2010	1.056	Nov 2011	-		1.056	4.334	7.444	
Prior Years Support	Various	Various: Various	0.768	-		-		-		-	0.000	0.768	
Subtotal			11.928	12.625		14.105		-		14.105	57.627	96.285	

Remarks
Prior to FY10, BAMS was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>
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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various:Various	1.045	3.876	Nov 2010	6.859	Nov 2011	-		6.859	33.335	45.115	
Developmental Test & Evaluation	WR	NAWC-AD:Patuxent River, MD	3.612	7.107	Nov 2010	8.468	Nov 2011	-		8.468	29.012	48.199	
Operational Test & Evaluation	Various	Not Specified:Not Specified	-	-		-		-		-	22.949	22.949	
Subtotal			4.657	10.983		15.327		-		15.327	85.296	116.263	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	Mitre:McLean, VA	0.514	1.600	Nov 2010	1.700	Nov 2011	-		1.700	3.373	7.187	7.187
Program Management Support	Various	Various:Various	0.783	0.706	Nov 2010	0.722	Nov 2011	-		0.722	1.517	3.728	
Travel	WR	Various:Various	0.322	0.300	Nov 2010	0.350	Nov 2011	-		0.350	0.846	1.818	
Program Management Support	C/CPFF	Ausley:Lexington Park, MD	2.458	2.513	Dec 2010	2.569	Dec 2011	-		2.569	5.010	12.550	12.550
Program Management Support	C/CPFF	Bowhead:Alexandria, VA	1.357	1.481	Dec 2010	1.513	Dec 2011	-		1.513	2.952	7.303	7.303
Subtotal			5.434	6.600		6.854		-		6.854	13.698	32.586	

Remarks
Travel funding vehicle type is TO.

	Total Prior Years Cost		FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		438.199	529.250		548.482		-		548.482	1,309.833	2,825.764	

Remarks
Prior to FY10, BAMS was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>	PROJECT 4020: <i>BAMS UAS</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4020				
Acquisition Milestones: Milestone C	3	2013	3	2013
Acquisition Milestones: Full Rate Production	1	2016	1	2016
Acquisition Milestones: Initial Operational Capability	1	2016	1	2016
System Development: Systems Demonstration and Development	1	2010	3	2016
System Development: Reviews: Preliminary Design Review	2	2010	2	2010
System Development: Reviews: Critical Design Review	2	2011	2	2011
System Development: Reviews: Flight Readiness Review	2	2012	2	2012
Test & Evaluation Activities: Integrated Test (Combined/Developmental/Operational)	3	2012	4	2014
Test & Evaluation Activities: Operational Test Readiness Review	1	2015	1	2015
Test & Evaluation Activities: OPEVAL	2	2015	3	2015
Production Milestones: Contracts: Low Rate Initial Production 1 Contract Award	3	2013	3	2013
Production Milestones: Contracts: Low Rate Initial Production 2 Contract Award	3	2014	3	2014
Production Milestones: Contracts: Low Rate Initial Production 3 Contract Award	2	2015	2	2015
Production Milestones: Contracts: Full Rate Production Contract Award	2	2016	2	2016
Production Milestones: Deliveries: System Development and Demonstartion Deliveries	3	2012	4	2012
Production Milestones: Deliveries: Low Rate Initial Production 1 Delivery	4	2014	2	2015
Production Milestones: Deliveries: Low Rate Initial Production 2 Delivery	3	2015	3	2016
Production Milestones: Deliveries: Low Rate Initial Production 3 Delivery	3	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0305231N: <i>MQ-8 UAV</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	25.497	10.665	108.248	-	108.248	77.630	37.000	-	-	0.000	259.040
2768: <i>VTUAV</i>	25.497	10.665	108.248	-	108.248	77.630	37.000	-	-	0.000	259.040

A. Mission Description and Budget Item Justification

MQ-8 Unmanned Aerial Vehicle Joint Military Intelligence Program.

The MQ-8 (popular name "Fire Scout") Vertical Take-off Unmanned Aerial Vehicle (VTUAV) provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8 can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The MQ-8 launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, the incorporation of weapons, the incorporation of an electro-optical/infra-red/laser designator-laser range finder modular mission payload, Radar and other specialty payloads. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8 will be provided through standard DoD Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	25.533	10.665	3.638	-	3.638
Current President's Budget	25.497	10.665	108.248	-	108.248
Total Adjustments	-0.036	-	104.610	-	104.610
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	104.681	-	104.681
• Section 219 Reprogramming	-0.035	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.071	-	-0.071
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>
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Change Summary Explanation

Technical: OSD directed Navy to modify the MQ-8 system to achieve increased aircraft flight endurance to provide an interim maritime capability to Special Operations Forces (SOF). This requirement will require a larger airframe. New payload integration will also be done as part of the effort. Additionally, the CNO has directed a rapid fielding of a limited weapon capability to VTUAV.

Schedule:

Acquisition milestones have been adjusted due to software and flight test delays.

- Initial Operational Capability (IOC) moved from 2Q FY10 to 1Q FY12.
- Completion of Operational Evaluation OT-C-1 moved from 2Q FY10 to 1Q FY12.
- Full Rate Production (FRP) decision moved to 2Q FY15 to accommodate endurance modifications. Additional Low Rate Initial Production (LRIP) quantities and production years have been added to the schedule. Extends LRIP through FY14. Total LRIP quantity exceeds 10%.

The completion dates of the following events have moved:

- Engineering and Manufacturing Development VTUAV from 2Q FY10 to 4Q FY11.

With the addition of LRIP IV through VIII, FRP awards and deliveries have been adjusted.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2768: <i>VTUAV</i>	25.497	10.665	108.248	-	108.248	77.630	37.000	-	-	0.000	259.040
Quantity of RDT&E Articles	0	0	2	0	2	0	0	0	0		

A. Mission Description and Budget Item Justification

The MQ-8 (popular name "Fire Scout") Vertical Take-off Unmanned Aerial Vehicle (VTUAV) provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8 can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting, laser designation and battle management (including communications relay). The MQ-8 launches and recovers vertically and can operate from air capable ships, as well as confined area land bases. Other characteristics include autonomous air vehicle launch and recovery, autonomous waypoint navigation with command override capability, the incorporation of weapons, the incorporation of an electro-optical/infra-red laser designator-laser range finder modular mission payload, radar and other specialty payloads. Interoperability is achieved through the use of the Tactical Control System (TCS) software in the ground control station, and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8 will be provided through standard DoD Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance system architectures and protocols.

The MQ-8 system is composed of air vehicles and associated spares and support equipment, electro-optical/infra-red/laser designator-range finder payloads, Ground Control Stations (with TCS), aircraft and control station TC DL elements, and a Unmanned Aerial Vehicle Common Automatic Recovery System (UCARS) for automatic takeoff and landing from ships. The MQ-8 system will support the Surface Warfare, Mine Countermeasures Warfare and Anti-Submarine Warfare mission modules while operating on Littoral Combat Ship (LCS). The system will also be integrated on select surface combatants that are air capable and can host MQ-8 ancillary equipment. A limited number of land based control stations supplement the system to support shore based operations, such as predeployment, acceptance flights and expeditionary operations. These assets will also support depot level maintenance/post maintenance activities.

MQ-8 endurance modification is an Engineering Change Proposal (ECP) to the existing system and is in response to the Special Operations Forces (SOF), endorsed by US Central Command (CENTCOM), request for a sea based medium range, persistent Intelligence Surveillance and Reconnaissance unmanned air system. Office of the Secretary of Defense (OSD) CAPE(IW) evaluated options to meet this urgent requirement. This resulted in OSD directing the Navy to upgrade Fire Scout for increased endurance, procure additional aircraft, and modify 12 additional ships in the Fiscal Year Defense Plan (FYDP) to support multiple orbits through FY18, and to initiate Medium Range Maritime UAS (MRMUAS) follow-on program. MRMUAS will provide the long term capability for the Beyond Line of Sight SOF and Navy Missions. MRMUAS is a potential joint program. The fundamental concept of the MQ-8 ECP is to leverage over 85% of the Fire Scout system hardware and 95% of the software. The MQ-8 ECP will use the existing Ground Control Station (GCS), Command and Control (C2) links, avionics, payloads, and logistics. The MQ-8 ECP will rehost the avionics, software and C2 sub-systems into a new airframe. A new airframe will provide the extended endurance and payload capacity to support, on an interim basis, the SOF requirements for orbital coverage in specific Areas of Responsibility (AOR). The MQ-8 ECP will retain the baseline targeting capability with an Electro-Optic/Infrared (EO/IR) payload and be compatible with the existing ground control stations and C2 architecture for operations at sea or from an expeditionary base ashore. The MQ-8 ECP falls within the existing program requirements Capabilities Production Document (CPD), but will require contract modification to allow the prime contractor to select a different airframe supplier. The program will carry forward the payloads, such as Brite Star II, COBRA, Automated Identification System (AIS), specialty payloads, and radar planned for the MQ-8B.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>
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Radar, as part of the program of record, will continue development and be leveraged for integration in the MQ-8. The MQ-8 increased endurance and payload capacity may allow the Navy to fully meet the LCS mission requirements with fewer aircraft lowering the Fire Scout's total ownership cost.

A weapons Rapid Deployment Capability (RDC) for Fire Scout is also part of PB12. The Chief of Naval Operations (CNO) has directed that a Rapid Deployment/Development Capability (RDC) for weaponizing Fire Scout be initiated in FY11 and completed by 3QFY12. The Navy is requesting to initiate this effort in FY11 using an Above Threshold Reprogramming. A Quick Reaction Assessment is planned for 3QFY12 and will leverage off planned Fire Scout LCS 1 SUW mission package testing.

The VTUAV program is post Milestone C (MS C), which was approved in May 2007. MS C authorized entry into Low Rate Initial Production. A total of seven air vehicles and three control stations were purchased with Research Development Test & Evaluation (RDT&E) funds under System Design and Development.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Hardware and System Development</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Continued incremental integration of MQ-8 Air Vehicles to support Engineering and Manufacturing Development (EMD) program. Continued preliminary design for radar integration. Continued combined developmental and operational testing. Continued integration of the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload. Continue to support LCS integration.</p> <p>FY 2011 Plans: Continue incremental integration of MQ-8 Air Vehicles to support the EMD program. Start integration of radar. Continue integration of the COBRA payload. Continue to support LCS integration. Integrate MQ-8 onto USS HALYBURTON and conduct testing with specialty payloads to deploy the system land base in Operation Enduring Freedom (OEF). Begin MQ-8 ECP integration.</p> <p>FY 2012 Plans: Continue integration of MQ-8. Start development and testing of SOF provided payloads. Continue integration of the radar, specialty payloads, and COBRA payload. Continue to support LCS integration. Start Weapons requirement development, integration and a Quick Reaction Assessment as required for RDC designated programs. Continue MQ-8 ECP integration.</p>	<p>20.300</p> <p>0</p>	<p>7.400</p> <p>0</p>	<p>92.000</p> <p>2</p>
<p>Title: Development Testing</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments:</p>	<p>0.392</p> <p>0</p>	<p>1.165</p> <p>0</p>	<p>6.300</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continued incremental integration of MQ-8 Air Vehicles to support EMD program. Continued testing of the VTUAV system. Continued LCS integration efforts. FY 2011 Plans: Continue OPEVAL. Continue LCS integration efforts. Start MQ-8 ECP integration. FY 2012 Plans: Complete OPEVAL. Start testing VTUAV SOF system payloads. Continue LCS integration efforts. Start Weapons integration efforts. Continue MQ-8 ECP integration.			
Title: Engineering and Technical Services FY 2010 Accomplishments: Continued incremental integration of MQ-8 Air Vehicles to support EMD program. Continued engineering management, program technical management, and management support for the VTUAV system. These included transportation of system assets, program office personnel travel, and contract support services. Continued to support LCS integration and USS HALYBURTON testing. FY 2011 Plans: Continue engineering management, program technical management, and management support for the VTUAV system. These include transportation of system assets, program office personnel travel, and contract support services. Continue to support LCS integration and payloads integration. Start MQ-8 ECP integration. FY 2012 Plans: Continue engineering management, program technical management, and management support for the VTUAV system. These include transportation of system assets, program office personnel travel, and contract support services. Continue to support LCS integration and payloads integration. Start Weapons integration, weapon studies, systems engineering, and test and evaluation. Continue MQ-8 ECP integration.	4.805 0	2.100 0	9.948 0
Articles:			
Accomplishments/Planned Programs Subtotals	25.497	10.665	108.248

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RD TEN, 0305204N: <i>Tactical Unmanned Aerial Vehicles</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	562.137

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012			FY 2013	FY 2014	FY 2015	FY 2016	Cost To	
			Base	OCO	Total					Complete	Total Cost
• APN, 044300: <i>MQ-8 UAV</i>	136.877	47.484	191.986	0.000	191.986	166.843	191.110	158.060	179.932	1,066.710	2,264.042
• APN, 060510: <i>MQ-8 UAV Spares</i>	7.320	3.488	6.891	0.000	6.891	13.742	14.324	14.822	14.942	83.712	184.308

D. Acquisition Strategy

Continue incremental integration of MQ-8 Air Vehicles to support the Engineering and Manufacturing Development program. Continue the MQ-8 program, payload integration and LCS integration support. Full Rate Production and Initial Operational Capability (IOC) will follow completion of Operation Test and Evaluation. Weaponize VTUAV.

E. Performance Metrics

Successfully achieve IOC. Successfully continue Coastal Battlefield Reconnaissance and Analysis integration. Successfully continue Radar Sensor Integration. Successfully continue LCS Ship Integration. Successfully complete Operational Test. Successfully achieve weaponization. Successfully support interim SOF mission.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/FFP	Northrop Grumman Corp:San Diego, CA	20.300	6.400	Nov 2010	87.000	Nov 2011	-		87.000	0.000	113.700	39.400
Primary Hardware Development	SS/FFP	Raytheon Corp:Falls Church, VA	-	0.400	Feb 2011	5.000	Nov 2011	-		5.000	0.000	5.400	1.400
Subtotal			20.300	6.800		92.000		-		92.000	0.000	119.100	40.800

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	Various	Various:Various	-	1.165	Nov 2010	1.700	Nov 2011	-		1.700	0.000	2.865	
Subtotal			-	1.165		1.700		-		1.700	0.000	2.865	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD:PAXRV, MD	-	-		4.000	Nov 2011	-		4.000	0.000	4.000	
Operational Test & Evaluation	WR	NAWCAD:PAXRV, MD	0.050	0.600	Nov 2010	0.600	Nov 2011	-		0.600	0.000	1.250	
Prior Years T&E	Various	Various:Various	0.342	-		-		-		-	0.000	0.342	
Subtotal			0.392	0.600		4.600		-		4.600	0.000	5.592	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD:PAXRV, MD	4.775	1.658	Nov 2010	7.948	Nov 2011	-		7.948	0.000	14.381	
	Various	Various:Various	-	0.370	Nov 2010	1.600	Nov 2011	-		1.600	0.000	1.970	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support													
Travel	WR	NAVAIR:PAXRV, MD	0.030	0.072	Oct 2010	0.400	Nov 2011	-		0.400	0.000	0.502	
Subtotal			4.805	2.100		9.948		-		9.948	0.000	16.853	

Remarks
Travel contract type is TO.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.497	10.665		108.248		-		108.248	0.000	144.410	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0305231N: *MQ-8 UAV*

PROJECT
 2768: *VTUAV*

MQ-8 VTUAV	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016								
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q					
Acquisition Milestones																																	
Milestones									IOC ▲									MQ-8 ECP IO C ▲	FRP ◆														
Systems Development																																	
Engineering and Manufacturing Development	VTUAV																																
	COBRA Integration																																
	MQ-8 ECP Integrated Test																																
	Weapons RDC																																
	Payload, Obsolescence, Software Studies and Analysis																																
Reviews																																	
MQ-8 ECP									SRR ■	PDR ■	CDR ■									MUA ■													
Weapons									SRR ■	PDR ■	CDR ■	QRA ■																					
Test & Evaluation (T&E)																																	
Technical Evaluation	COBRA IT-D-1																																
Operational Evaluation	OT-C1 OPEVAL																																
	LCS Integration																																
Production Milestones																																	
Contract Awards	LRIP IV ●				LRIP V ●				LRIP VI ●				LRIP VII ●				LRIP VIII ●				FRP I ●												
Deliveries																																	
	LRIP II				LRIP III				LRIP IV				LRIP V				LRIP VI				LRIP VII				LRIP VIII								

2012PB - 0305231N - 2768

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MQ-8 VTUAV				
Acquisition Milestones: Milestones: Initial Operational Capability (IOC)	1	2012	1	2012
Acquisition Milestones: Milestones: Full Rate Production (FRP)	2	2015	2	2015
Acquisition Milestones: Milestones: MQ-8 ECP IOC	1	2015	1	2015
Systems Development: Engineering and Manufacturing Development: VTUAV	1	2010	4	2011
Systems Development: Engineering and Manufacturing Development: COBRA Integration	1	2010	4	2011
Systems Development: Engineering and Manufacturing Development: MQ-8 ECP	3	2011	1	2015
Systems Development: Engineering and Manufacturing Development: Weapons Rapid Deployment Capability	2	2011	3	2012
Systems Development: Engineering and Manufacturing Development: Payload, Obsolescence, Software Studies and Analysis	1	2010	4	2015
Reviews: MQ-8 ECP: System Readiness Review	4	2011	4	2011
Reviews: MQ-8 ECP: Preliminary Design Review	2	2012	2	2012
Reviews: MQ-8 ECP: Critical Design Review	3	2012	3	2012
Reviews: MQ-8 ECP: Military Utility Assessment	3	2014	3	2014
Reviews: Weapons: System Requirement Review	3	2011	3	2011
Reviews: Weapons: Preliminary Design Review	3	2011	3	2011
Reviews: Weapons: Critical Design Review	4	2011	4	2011
Reviews: Weapons: Quick Reaction Assessment	3	2012	3	2012
Test & Evaluation (T&E): Technical Evaluation: COBRA IT-D-1	4	2010	4	2011
Test & Evaluation (T&E): Operational Evaluation: OT-C1 OPEVAL	3	2011	1	2012
Test & Evaluation (T&E): Operational Evaluation: LCS Integration	1	2010	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305231N: <i>MQ-8 UAV</i>	PROJECT 2768: <i>VTUAV</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestones: Contract Awards: Low Rate Initial Production Aircraft Procurement Navy (LRIP) (APN) Contract Award IV	3	2010	3	2010
Production Milestones: Contract Awards: LRIP APN Contract Award V	3	2011	3	2011
Production Milestones: Contract Awards: LRIP Contract Awards VI	3	2012	3	2012
Production Milestones: Contract Awards: LRIP Contract Awards VII	3	2013	3	2013
Production Milestones: Contract Awards: LRIP Contract Awards VIII	3	2014	3	2014
Production Milestones: Contract Awards: FRP Contract Awards I	3	2015	3	2015
Deliveries: Air Vehicles - LRIP II APN	2	2010	1	2011
Deliveries: Air Vehicles - LRIP III APN	2	2011	4	2011
Deliveries: Air Vehicles - LRIP IV APN	1	2012	1	2013
Deliveries: Air Vehicles - LRIP V APN	2	2013	1	2014
Deliveries: Air Vehicles - LRIP VI	2	2014	1	2015
Deliveries: Air Vehicles - LRIP VII	2	2015	1	2016
Deliveries: Air Vehicles - LRIP VIII	2	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	0.551	0.512	0.979	-	0.979	1.010	1.034	1.057	1.081	Continuing	Continuing
2272: <i>Intel Command and Control (C2) Sys</i>	0.551	-	-	-	-	-	-	-	-	0.000	0.551
2292: <i>RQ-11 UAV</i>	-	0.512	0.979	-	0.979	1.010	1.034	1.057	1.081	Continuing	Continuing

Note
In FY 2009 and prior, RQ-11 Unmanned Aerial Vehicle (UAV) was funded in PE 0206313M, C2273. Project will be funded in PE 0305232M C2292 for FY 2011 and out.

A. Mission Description and Budget Item Justification
(U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

GROUP 1 (formerly known as TIER I UAS) - The Program Office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with two incremental developments to meet the final desired Small Unit Remote Scouting System (SURSS) requirements (Joint USMC/USA/SOCOM capabilities). The SURSS Block 0, Dragon Eye, was the first increment and is currently fielded to deployed units. For the Block 1 increment the USMC adopted the USSOCOM Rucksack Portable UAV (RPUAV) ORD, which meets the USMC's requirement and began migrating to the joint materiel solution, the Raven B.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	0.551	0.512	1.021	-	1.021
Current President's Budget	0.551	0.512	0.979	-	0.979
Total Adjustments	-	-	-0.042	-	-0.042
• Congressional General Reductions					
• Congressional Directed Reductions					
• Congressional Rescissions	-	-			
• Congressional Adds					
• Congressional Directed Transfers					
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-0.001	-	-0.001
• Rate/Misc Adjustments	-	-	-0.041	-	-0.041

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>				PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>				
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2272: <i>Intel Command and Control (C2) Sys</i>	0.551	-	-	-	-	-	-	-	-	0.000	0.551
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

GROUP 1 (formerly known as TIER I UAS) - The Program Office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with two incremental developments to meet the final desired Small Unit Remote Scouting System (SURSS) requirements (Joint USMC/USA/SOCOM capabilities). The SURSS Block 0, Dragon Eye, was the first increment and is currently fielded to deployed units. For the Block 1 increment the USMC adopted the USSOCOM Rucksack Portable UAV (RPUAV) ORD, which meets the USMC's requirement and began migrating to the joint materiel solution, the Raven B.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Program Management Support	0.551	-	-
Articles:	0		
FY 2010 Accomplishments: To fund Tactical Network Sensor Suite (TNS2) program. This initiative supports the experimentation, integration and product enhancement of the Marine Corps UAS program, communications hardware and C2 software.			
Accomplishments/Planned Programs Subtotals	0.551	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PMC/6468: <i>Tier I UAS</i>	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417
• PMC/4640: <i>Tier I UAS</i>	2.962	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.962

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PMC/4757: <i>Tier I UAS</i>	41.492	6.189	2.104	0.000	2.104	4.483	4.760	4.551	4.629	0.000	68.208

D. Acquisition Strategy

The Program Office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with two incremental developments to meet the final desired Small Unit Remote Scouting System (SURSS) requirements (Joint USMC/USA/SOCOM capabilities).

E. Performance Metrics

Fielded joint material solution.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>	PROJECT 2292: <i>RQ-11 UAV</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2292: <i>RQ-11 UAV</i>	-	0.512	0.979	-	0.979	1.010	1.034	1.057	1.081	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The system below collects and converts raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

GROUP 1 (formerly known as TIER I UAS) - The Program Office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with two incremental developments to meet the final desired Small Unit Remote Scouting System (SURSS) requirements (Joint USMC/USA/SOCOM capabilities). The SURSS Block 0, Dragon Eye, was the first increment and was fielded to deployed units. Dragon Eyes are being removed and replaced with the Raven B. For the Block 1 increment the USMC adopted the USSOCOM Rucksack Portable UAV (RPUAV) ORD, which meets the USMC's requirement and began migrating to the joint materiel solution, the Raven B. Raven B's are transitioning from an 8 Channel to a Digital Data Link (DDL) version.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Program Management and Support	-	0.512	0.979
Articles:		0	0
FY 2011 Plans: To fund Tactical Network Sensor Suite (TNS2) program. This initiative supports the experimentation, integration and product enhancement of the Marine Corps UAS program, communications hardware and C2 software.			
FY 2012 Plans: To fund Tactical Network Sensor Suite (TNS2) program. This initiative continues to support the development, experimentation, integration and product enhancement of the Marine Corps UAS program, communications hardware and C2 software.			
Accomplishments/Planned Programs Subtotals	-	0.512	0.979

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>	PROJECT 2292: <i>RQ-11 UAV</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PMC/4640: <i>Tier I UAS</i>	2.962	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.962
• PMC/6468: <i>Tier I UAS</i>	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417
• PMC/4757: <i>Tier I UAS</i>	41.492	6.189	2.104	0.000	2.104	4.483	4.760	4.551	4.629	0.000	68.208

D. Acquisition Strategy

The Program Office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with two incremental developments to meet the final desired Small Unit Remote Scouting System (SURSS) requirements (Joint USMC/USA/SOCOM capabilities).

E. Performance Metrics

Fielded joint material solution.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>	PROJECT 2292: <i>RQ-11 UAV</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tier I	MIPR	NSWC:Dahlgren	0.500	0.512	Feb 2011	0.979	Feb 2012	-		0.979	0.000	1.991	
Subtotal			0.500	0.512		0.979		-		0.979	0.000	1.991	

Remarks
For the development and testing of DDL (Digital Data Link) into the TNS2 (Tactical Network Sensor Suite).

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tier I	MIPR	NAWC AD:Pax River	0.051	-		-		-		-	0.000	0.051	
Subtotal			0.051	-		-		-		-	0.000	0.051	

Remarks
To develop an aerodynamic model for Raven B.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		0.551	0.512		0.979		-	0.979	0.000	2.042	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>	PROJECT 2292: <i>RQ-11 UAV</i>

Group I Schedule

FISCAL YEARS	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Fielding Decision (Block 1)								
Technical Reviews & Audits								
Technology Development (SOCOM's ACTD)								
Production/Procurement		Block 1			FOC Block 1			
PEI Reprocurement								
Operation and Support (SURSS)		Operator Training						
			▲ ** DDL UPGRADE					
Fielding	81	98	171	13	13	13	13	

Additional funding notes:

Note: DDL Upgrade – Funded by OCO funding in FY-10. Army contract pushed to 1st QTR FY11.

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232M: <i>RQ-11 UAV</i>	PROJECT 2292: <i>RQ-11 UAV</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2292				
Completion of fielded DDL Systems	3	2011	3	2011

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	3.132	7.834	0.872	-	0.872	0.871	0.874	0.876	0.891	Continuing	Continuing
9156: <i>Wide Focal Plane Array Camera (WFPAC)</i>	2.150	6.900	-	-	-	-	-	-	-	0.000	9.050
9C84: <i>MCTUAS</i>	0.982	0.934	0.872	-	0.872	0.871	0.874	0.876	0.891	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element supports additional capability development for the RQ-7 Shadow non-lethal joint tactical Unmanned Aerial Vehicle system for Department of Defense to provide the warfighter with the capability for day/night aerial Reconnaissance, Surveillance and Target Acquisition, intelligence, battle damage assessment, and force protection.

FY11 request includes \$6.9M in Overseas Contingency Operation funds for Wide Focal Plane Array Camera (WFPAC) in support of Operation Enduring Freedom - Afghanistan.

B. Program Change Summary (\$ in Millions)

	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	0.982	0.934	0.928	-	0.928
Current President's Budget	3.132	7.834	0.872	-	0.872
Total Adjustments	2.150	6.900	-0.056	-	-0.056
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	2.150	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	6.900	-0.055	-	-0.055
• Rate/Misc Adjustments	-	-	-0.001	-	-0.001

Change Summary Explanation

Schedule: WFPAC contract award expected in 3Q FY11. Previous budget submission inadvertently had contract award in 2Q FY11.

Technical: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>	PROJECT 9156: <i>Wide Focal Plane Array Camera (WFPAC)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9156: <i>Wide Focal Plane Array Camera (WFPAC)</i>	2.150	6.900	-	-	-	-	-	-	-	0.000	9.050
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Congressional approval received via above-threshold reprogramming in FY10. FY11 request includes \$6.9M in Overseas Contingency Operation funds for Wide Focal Plane Array Camera (WFPAC) in support of Operation Enduring Freedom - Afghanistan.

A. Mission Description and Budget Item Justification

Program completes development, testing, integration and initial procurement of a WFPAC sensor for the RQ-7 Shadow Unmanned Aircraft System (UAS) in support of Operation Enduring Freedom - Afghanistan. The Office of Naval Research is leading the development and funding the low rate initial procurement. These funds will support the test and integration efforts for the Marine Corps Shadow systems.

The WFPAC sensor enhancement will address the Marine Expeditionary Brigade's near-term organic persistent Intelligence, Surveillance and Reconnaissance requirement in Afghanistan as well as provide an enduring capability in a reduced form factor tactical UAS sensor.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: WFPAC	2.150	6.900	-
Articles:	0	0	
FY 2010 Accomplishments: Funding supports integration and testing of the WFPAC Sensor on the RQ-7 Shadow UAS.			
FY 2011 Plans: Funding will continue to support integration and testing of the WFPAC Sensor on the RQ-7 Shadow UAS.			
Accomplishments/Planned Programs Subtotals	2.150	6.900	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The program office will leverage Army contracting by UAS Program Manager to integrate WFPAC onto the RQ-7 Unmanned Aerial Vehicle (UAV). Government engineering support will be provided by Naval Air Warfare Center, Aircraft Division, China Lake.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>	PROJECT 9156: <i>Wide Focal Plane Array Camera (WFPAC)</i>

E. Performance Metrics

WFPAC successfully integrated onto RQ-7 UAV.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>	PROJECT 9156: <i>Wide Focal Plane Array Camera (WFPAC)</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCWD:China Lake, CA	-	0.500	Mar 2011	-		-		-	0.000	0.500	
Integration and Testing	Various	TBD:TBD	1.913	6.400	Jun 2011	-		-		-	0.000	8.313	
Engineering Support	WR	Fleet Readiness:San Diego, CA	0.237	-		-		-		-	0.000	0.237	
Subtotal			2.150	6.900		-		-		-	0.000	9.050	

Remarks
FY10 funds for Integration and Testing are not yet awarded.

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.150	6.900	-	-	-	0.000	9.050	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>	PROJECT 9156: <i>Wide Focal Plane Array Camera (WFPAC)</i>
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Wide Focal Plane Array Camera (WFPAC)	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016							
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Integration Testing																																
					Integration and Testing																											

2012PB - 0305233N - 9156

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>	PROJECT 9156: <i>Wide Focal Plane Array Camera (WFPAC)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Wide Focal Plane Array Camera (WFPAC)				
Integration Testing: Integration and Testing	1	2011	2	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>	PROJECT 9C84: <i>MCTUAS</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9C84: <i>MCTUAS</i>	0.982	0.934	0.872	-	0.872	0.871	0.874	0.876	0.891	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This Marine Corps Tactical Unmanned Aircraft System (MCTUAS) project supports the fielded RQ-7B Shadow Unmanned Aerial Vehicle (UAV) system by conducting research, development, test, and evaluation for improvement of the RQ-7 UAV capabilities in Reconnaissance, Surveillance and Target Acquisition, Intelligence, Battle Damage Assessment and Force Protection. The RQ-7B Shadow UAV system provides critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level.

RQ-7B Shadow UAV systems are acquired through the Army's Unmanned Aerial System (UAS) Program Office to fulfill Marine Corps UAS requirements. In order to optimize Marine Corps and Army's interoperability, maintenance, and capability with minimal cost, the two services plan to develop additional capability for the common system. These funds will provide the Marine Corps share of the combined development cost.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: MCTUAS Development Support	0.982	0.934	0.872
Articles:	0	0	0
Description: Joint development efforts with US Army RQ-7 Shadow Program and associated government engineering support for block upgrades required for continued improvement and interoperability.			
FY 2010 Accomplishments: The RQ-7 MCTUAS program benefitted and shared in cost for the following upgrades: Common Systems Integration were required to ensure interoperability with other weapon systems, manned and unmanned. Included in this category were Universal Ground Station, trainer upgrades, and One System Remote Video Transceiver and advance payloads. The Small Sense and Avoid system was required to meet the requirements for a traffic alert and collision avoidance system and to allow for operations in the National Airspace. FY10 funded the Marine Corps share of the combined development cost. Funding was also used for government engineering support.			
FY 2011 Plans: Continue with Marine Corps share of the combined development cost and government engineering support. Continue development efforts and government engineering support begun in FY10.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233N: <i>RQ-7 UAV</i>	PROJECT 9C84: <i>MCTUAS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Funding continues development efforts and government engineering support, and will initiate development efforts for improvements to control systems, the power plant, Intelligence Surveillance Reconnaissance systems and weapons capabilities.			
Accomplishments/Planned Programs Subtotals	0.982	0.934	0.872

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• WPN/422700: <i>MCTUAS</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	207.900
• APN/044100: <i>RQ-7 UAV</i>	109.988	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	109.988
• APN/058900: <i>RQ-7 UAV</i>	0.000	26.121	11.419	0.000	11.419	11.550	11.810	0.000	0.000	0.000	60.900

D. Acquisition Strategy

Sole source engineering development services contract with Aircraft Armament Incorporated (AAI) through Army Program Manager Unmanned Aircraft System.

E. Performance Metrics

Attainment of targeted development effort upgrades improving operational capability of the RQ-7 UAV (MCTUAS).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASLO)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	18.685	26.209	-	-	-	-	-	-	-	0.000	44.894
2272: <i>Intel Command and Control (C2) Sys</i>	18.685	-	-	-	-	-	-	-	-	0.000	18.685
2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUALO)</i>	-	26.209	-	-	-	-	-	-	-	0.000	26.209

Note

The Tier II program is in PE 0305234M, Project C2272 in FY10. The Tier II program is in PE 0305234M, Project C2298 in FY11. The Tier II program was realigned to PE 0305239M, Project C2298 in FY12 and out.

A. Mission Description and Budget Item Justification

Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

TIER II - This is a combined Navy (PE 0305204N-TCS) and Marine Corps (PE 0305234M) budget submission. The Tier II/UAS will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment, this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver. This submission is the Marine Corps portion of the program and has been coordinated with the Navy budget submission PE 0305204N.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASLO)</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	18.685	26.209	16.864	-	16.864
Current President's Budget	18.685	26.209	-	-	-
Total Adjustments	-	-	-16.864	-	-16.864
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	9.789	-	9.789
• Rate/Misc Adjustments	-	-	-26.653	-	-26.653

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2272: <i>Intel Command and Control (C2) Sys</i>	18.685	-	-	-	-	-	-	-	-	0.000	18.685
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

TIER II - This is a combined Navy (PE 0305204N) and Marine Corps (PE 0305234M) budget submission. The Tier II/UAS will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment, this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver. This submission is the Marine Corps portion of the Tier II program and has been coordinated with the Navy budget submission PE 0305204N. Tier II UAS is the only project (C2298) in PE 0305234M in FY11. Tier II UAS was realigned to PE 0305239M, C2298 in FY12 and out at OSD (C) direction.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Tier II UAS: Marine Corps C4I Integration</p> <p style="text-align: right;">Articles:</p> <p>FY 2010 Accomplishments: MCTSSA (Marine Corps Tactical Systems Support Activity) and TSO (Technical Support Office) established a Help Desk to support Tier II UAS C4I integration. Engineering, Manufacturing and Development Contract with Low Rate Initial Production (LRIP) and Early Operational Capability (EOC) Options awarded. Preliminary Design Review (PDR) held. Initial Operational Assessment and Development Testing completed as part of IT B1 test phase.</p>	1.345 0	-	-
<p>Title: Tier II UAS: Development Command Support</p> <p style="text-align: right;">Articles:</p> <p>FY 2010 Accomplishments:</p>	0.640 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
MCCDC (Marine Corps Combat Development Center) support to complete JCIDS (Joint Capabilities Integration and Development System) documentation.			
Title: Tier II UAS: Test Community Support FY 2010 Accomplishments: MCOTEA (Marine Corps Operational Test and Evaluation Activity) support to observe Testing and Evaluation and complete TEMP (Test & Evaluation Master Plan).	0.220 0	-	-
Title: Tier II UAS: Navy Program Management Support FY 2010 Accomplishments: NAVAIR contract award and program management support.	15.470 0	-	-
Title: Tier II UAS: Program Management Support FY 2010 Accomplishments: MCSC (Marine Corps Systems Command) program management and CEOSS (Commercial Enterprise Omnibus Support Services) support.	1.010 0	-	-
Accomplishments/Planned Programs Subtotals	18.685	-	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PMC/4757: <i>TIER II</i>	0.000	26.301	0.000	0.000	0.000	27.893	72.070	77.106	80.386	Continuing	Continuing

D. Acquisition Strategy
The program office expects to utilize a competitive acquisition approach to quickly field a capability with limited development. Spiral development will be utilized to field a system fully compliant with documented requirements.

E. Performance Metrics
Down select to final solution.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASLO)</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tier II	WR	MCTSSA:San Diego, CA	0.184	-		-		-		-	0.000	0.184	
Subtotal			0.184	-		-		-		-	0.000	0.184	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tier II	C/FP	Eagan Mcallister:Lexington park, MD	0.640	-		-		-		-	0.000	0.640	
Subtotal			0.640	-		-		-		-	0.000	0.640	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tier II	C/CPAF	Not Specified:Not Specified	0.220	-		-		-		-	0.000	0.220	
Subtotal			0.220	-		-		-		-	0.000	0.220	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tier II	C/FP	QNA:Stafford, VA	1.010	-		-		-		-	0.000	1.010	
Tier II	WR	MCSC:Quantico, VA	0.978	-		-		-		-	0.000	0.978	
Tier II	C/CPAF	INSITU:BINGEN, WA	15.470	-		-		-		-	0.000	15.470	
Tier II	WR	NSWC:Dahlgren, VA	0.183	-		-		-		-	0.000	0.183	
Subtotal			17.641	-		-		-		-	0.000	17.641	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				

Remarks
\$44M (includes Navy dollars) dollar contract awarded 29 July to INSITU.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.685	-		-		-		-	0.000	18.685	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

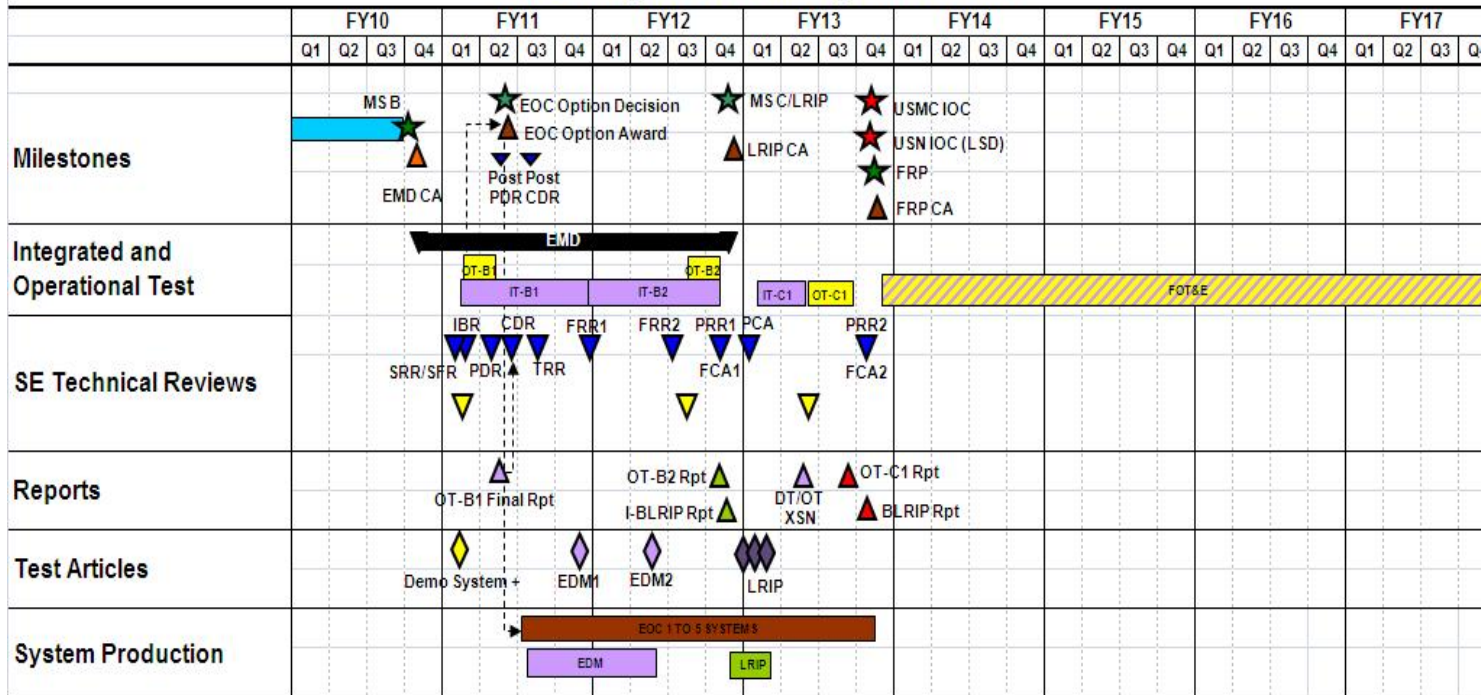
R-1 ITEM NOMENCLATURE

PE 0305234M: *Small (LEVEL 0) Tactical UAS (STUASLO)*

PROJECT

2272: *Intel Command and Control (C2) Sys*

STUAS Integrated Test Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2272: <i>Intel Command and Control (C2) Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2272				
Milestone C	4	2012	4	2012
Marine Corps IOC	4	2013	4	2013
Navy IOC	4	2013	4	2013
Ship Integration	1	2011	4	2012
EDM-Land Based System	4	2011	4	2011
EDM-Ship Based System	2	2012	2	2012
EOC	2	2011	4	2013
Milestone B	4	2010	4	2010
Full Rate Production	4	2013	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>				PROJECT 2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUAL0)</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUAL0)</i>	-	26.209	-	-	-	-	-	-	-	0.000	26.209
Quantity of RDT&E Articles	0	1	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

(U) Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

TIER II - This is a combined Navy (PE 0305204N) and Marine Corps (PE 0305234M) budget submission. The Tier II/UAS will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment, this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore in OCO and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver. This submission is the Marine Corps portion of the program and has been coordinated with the Navy budget submission PE 0305204N. This program was moved to PE 0305234M in FY10 and beyond.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: *Tier II UAS: Development Command Support	-	8.609	-
Articles:		0	
FY 2011 Plans: Conduct Early Operations Assessment (OT-B1), complete Capability Production Document (CPD), complete Production Readiness Review (PRR), develop Engineering and Manufacturing Development (EMD), fund Engineering Design Model (EDM) for (1) Land Based System that will be Contractor Owned.			
Title: *Tier II UAS: Navy Program Management Support	-	17.600	-
Articles:		0	
FY 2011 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUAL0)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Conduct Early Operations Assessment (OT-B1), complete Capability Production Document (CPD), complete Production Readiness Review (PRR), develop Engineering and Manufacturing Development (EMD), fund Engineering Design Model (EDM) for (1) Land-based system that will be Contractor Owned.			
Accomplishments/Planned Programs Subtotals	-	26.209	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PMC/4757: <i>TIER II</i>	0.000	26.301	0.000	0.000	0.000	27.608	71.664	76.679	79.943	Continuing	Continuing

D. Acquisition Strategy

The program office expects to utilize a competitive acquisition approach to quickly field a capability with limited development. Spiral development will be utilized to field a system fully compliant with documented requirements.

E. Performance Metrics

Down select to final solution.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

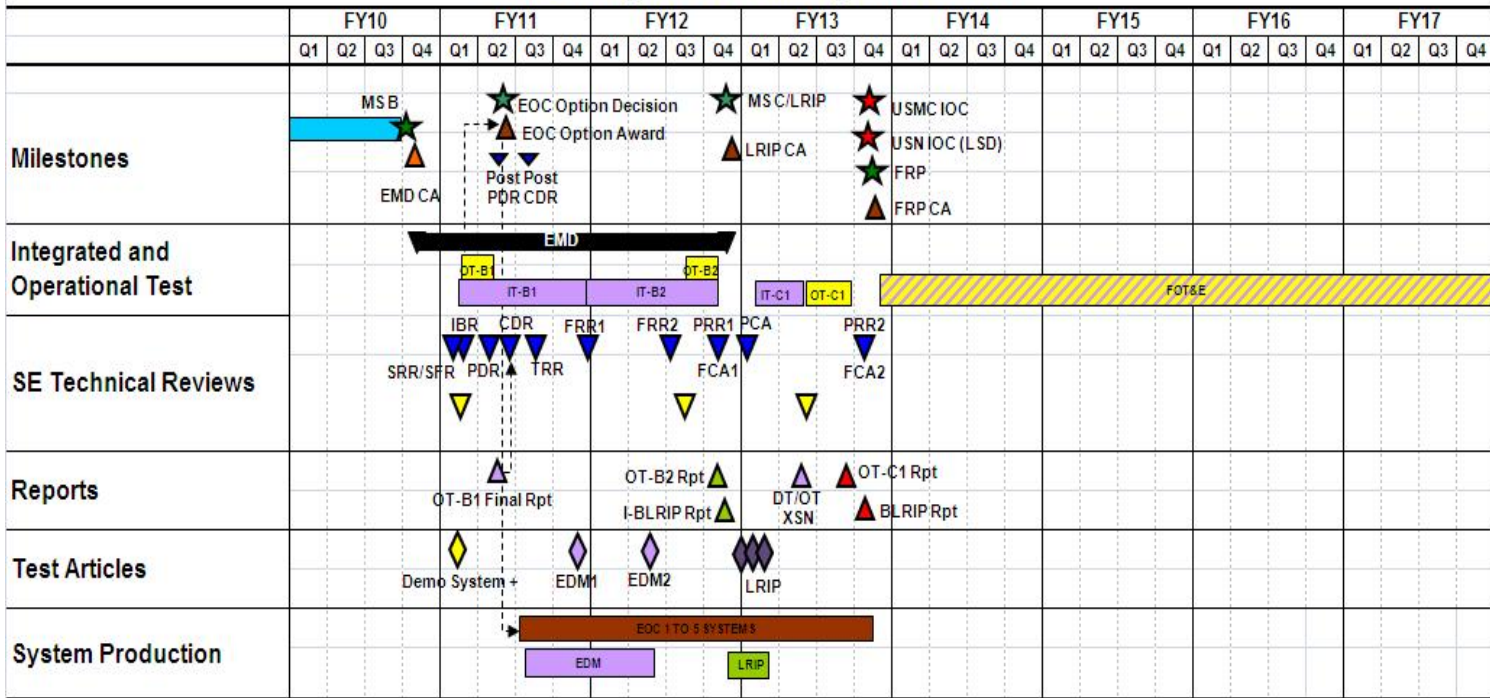
DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0305234M: *Small (LEVEL 0) Tactical UAS (STUASLO)*

PROJECT
 2298: *SMALL (LEVEL 0) TACTICAL UAS (STUALO)*

STUAS Integrated Test Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234M: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUAL0)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2298				
Milestone B	4	2010	4	2010
FRP	4	2013	4	2015
Milestone C	4	2012	4	2012
Marine Corps IOC	4	2013	4	2013
Navy IOC	4	2013	4	2013
Amphib Ship Integration	1	2011	4	2012
EDM-Land Based System	4	2011	4	2011
EDM-Ship Based System	2	2012	2	2012
EOC	2	2011	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	18.445	18.098	22.698	-	22.698	9.777	5.191	5.322	5.400	Continuing	Continuing
2787: <i>STUAS Lite</i>	0.005	5.388	-	-	-	-	-	-	-	0.000	5.393
3192: <i>STUAS</i>	18.440	12.710	22.698	-	22.698	9.777	5.191	5.322	5.400	Continuing	Continuing

Note

STUAS Lite FY10 funding in the amount of \$.005M will be reprogrammed prior to the end of fiscal year via below threshold reprogramming.

A. Mission Description and Budget Item Justification

This program element includes Small Tactical Unmanned Aircraft System (STUAS) and Small Tactical Unmanned Aircraft System Lite (STUAS Lite) non-lethal joint tactical Unmanned Aerial Vehicle systems for DoD to provide Persistent Intelligence, Surveillance and Reconnaissance (ISR)/Target Acquisition which will fill the capability gap in ISR services available to Fleet and Marine forces.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	23.496	18.098	12.603	-	12.603
Current President's Budget	18.445	18.098	22.698	-	22.698
Total Adjustments	-5.051	-	10.095	-	10.095
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-4.974	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	10.412	-	10.412
• Section 219 Reprogramming	-0.077	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.317	-	-0.317

Change Summary Explanation

Schedule:

STUAS Lite - Program start changed from 2Q FY10 to 1Q FY11 due to delays in STUAS source selection to determine STUAS Lite requirement.

STUAS - Schedule shifted to the right by two quarters due to delay in the on-going source selection for the Engineering and Manufacturing Development (EMD) contract. Contract was awarded on 29 July 2010. FRP contract award shifted to the right by two quarters due to delays in EMD contract award and schedule updated to reflect updates post contract award. Changed OTRR/IOT&E to IOT&E to correct discrepancy from prior budget submission.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>

Technical: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2787: <i>STUAS Lite</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2787: <i>STUAS Lite</i>	0.005	5.388	-	-	-	-	-	-	-	0.000	5.393
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

STUAS Lite FY10 funding in the amount of \$.005M will be reprogrammed prior to the end of fiscal year via below threshold reprogramming.

A. Mission Description and Budget Item Justification

The Small Tactical Unmanned Aircraft System Lite (STUAS Lite) integrates a Commercial-Off-The-Shelf (COTS) system onto Navy surface combatant (multi-ship classes) vessels and will provide Persistent Intelligence, Surveillance, and Reconnaissance (ISR)/Target Acquisition support for tactical level maneuver decisions and unit level force defense/force protection for surface combatant ships and Naval expeditionary forces. This system will fill the ISR capability shortfalls currently filled by the ISR services contracts. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and Naval Units operating from sea/shore in support of Overseas Contingency Operations.

Operational Test Asset consist of one air vehicle to be used in identifying and assessing reliability issues.

A notional system consists of four air vehicles, ground control station(s), multi-mission (plug-and-play) payloads, and associated launch, recovery and support equipment.

This project will continue to evolve and upgrade STUAS Lite capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include Navy Command and Control integration, Signals Intelligence, Synthetic Aperture Radar payloads and weapons integration.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Reprogrammings to Other Higher Navy Priorities <div style="text-align: right;">Articles:</div>	0.005 0	-	-
FY 2010 Accomplishments: Funding will be reprogrammed prior to the end of fiscal year via below threshold reprogramming.			
Title: Engineering and Technical Services <div style="text-align: right;">Articles:</div>	-	5.388 0	-
Description: The Prime System Contractor will be responsible for overall system integration and performance as well as systems engineering, interim integrated logistics support, and associated management activities.			
FY 2011 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2787: <i>STUAS Lite</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
FY11 will award the contract to initiate STUAS Lite Group 2 Unmanned Aircraft System program. Will fund Government Engineering Technical Support, Logistics Support, Contractor Support Services, Program Management Support and program related travel.			
Accomplishments/Planned Programs Subtotals	0.005	5.388	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN-4/044400: <i>STUASL0 (STUAS-Lite)</i>	0.000	14.906	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.906

D. Acquisition Strategy
STUAS Lite acquisition strategy is on-going, continuing to be based on COTS systems. FY11 Operational Test Asset is expected to be procured either through the prime contractor (TBD) or the GSA catalog if available.

E. Performance Metrics
Attainment of STUAS Lite Initial Operational Capability in accordance with approved schedule.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASLO)</i>	PROJECT 2787: <i>STUAS Lite</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship Integration	C/CPHF	TBD:TBD	-	1.634	Apr 2011	-		-		-	0.000	1.634	1.634
Ship Suitability	Various	Various:Various	-	0.200	Apr 2011	-		-		-	0.000	0.200	
Systems Engineering	Various	Various:Various	-	0.275	Apr 2011	-		-		-	0.000	0.275	
Training Development	Various	Various:Various	-	0.275	Dec 2010	-		-		-	0.000	0.275	
Subtotal			-	2.384		-		-		-	0.000	2.384	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Various:Various	-	0.500	Dec 2010	-		-		-	0.000	0.500	
Integrated Logistics Support	WR	Various:Various	-	0.364	Dec 2010	-		-		-	0.000	0.364	
Configuration Management	Various	Various:Various	-	0.100	Dec 2010	-		-		-	0.000	0.100	
Subtotal			-	0.964		-		-		-	0.000	0.964	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	C/CPFF	OPTEVFOR:Norfolk, VA	-	0.225	Apr 2011	-		-		-	0.000	0.225	0.225
Test Assets	C/CPHF	TBD:TBD	-	0.125	Apr 2011	-		-		-	0.000	0.125	0.125
Subtotal			-	0.350		-		-		-	0.000	0.350	0.350

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2787: <i>STUAS Lite</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various:Various	-	0.650	Dec 2010	-		-		-	0.000	0.650	
Government Engineering Support	WR	Various:Various	-	0.510	Dec 2010	-		-		-	0.000	0.510	
Program Management Support	Various	Various:Various	-	0.510	Dec 2010	-		-		-	0.000	0.510	
Travel	WR	NAVAIR HQ:Pax River, MD	-	0.020	Dec 2010	-		-		-	0.000	0.020	
Subtotal			-	1.690		-		-		-	0.000	1.690	

Remarks
Travel contract type is TO.

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	5.388	-	-	-	0.000	5.388	

Remarks
STUAS Lite FY10 funding in the amount of \$.005M will be reprogrammed prior to the end of the fiscal year via below threshold reprogramming.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305234N: *Small (LEVEL 0) Tactical UAS (STUASL0)*

PROJECT

2787: *STUAS Lite*

STUAS Lite	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Pre-Milestone Activities																												
					Pre-Milestone Activities																							
Operational Test & Evaluation																												
									Operational Test & Evaluation																			

2012PB - 0305234N - 2787

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 2787: <i>STUAS Lite</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
STUAS Lite				
Pre-Milestone Activities: Pre-Milestone Activities	1	2011	4	2011
Operational Test & Evaluation: Operational Test & Evaluation	3	2011	4	2011

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>				PROJECT 3192: <i>STUAS</i>				
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3192: <i>STUAS</i>	18.440	12.710	22.698	-	22.698	9.777	5.191	5.322	5.400	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Small Tactical Unmanned Aircraft System (STUAS) is a combined Navy and Marine Corps program that provides Persistent Intelligence, Surveillance, and Reconnaissance/Target Acquisition support for tactical level maneuver decisions and unit level force defense/force protection for Naval amphibious assault ships (multi-ship classes) and Navy and Marine land forces. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and provide support for Naval Units operating from sea/shore in Overseas Contingency Operations.

A notional system consists of three to four air vehicles, ground control station(s), multi-mission (plug-and-play) payloads, and associated launch, recovery and support equipment.

The STUAS system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability, and safety issues. Upgraded capabilities may include Navy Command and Control integration, Signals Intelligence and Synthetic Aperture Radar payloads, weapons integration, Heavy Fuel Engine, Laser Designator and Digital Common Data Link.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
<p>Title: Engineering and Manufacturing Development</p> <p style="text-align: right;">Articles:</p> <p>Description: Prime System Contractor will be responsible for overall system development and performance as well as systems engineering, integrated logistics support, and associated management activities.</p> <p>FY 2010 Accomplishments: Continued the Engineering and Manufacturing Development efforts for the STUAS/Tier II Unmanned Aircraft System program.</p> <p>FY 2011 Plans: Continue the Engineering and Manufacturing Development efforts for the STUAS/Tier II UAS program.</p> <p>FY 2012 Plans: Continue the Engineering and Manufacturing Development efforts for the STUAS/Tier II UAS program.</p>	7.550 0	7.550 0	12.100 0
<p>Title: Engineering and Technical Services</p> <p style="text-align: right;">Articles:</p>	10.890 0	5.160 0	10.598 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASLO)</i>	PROJECT 3192: <i>STUAS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<p>Description: Provides for the Government Engineering Technical Support, Logistics Support, Test and Evaluation, Contractor Support Services, Program Management Support and program related travel.</p> <p>FY 2010 Accomplishments: Continued support for Government Engineering Technical Support, Logistics Support, Test and Evaluation, Contractor Support Services, Program Management Support and program related travel.</p> <p>FY 2011 Plans: Continue support for Government Engineering Technical Support, Logistics Support, Test and Evaluation, Contractor Support Services, Program Management Support and program related travel.</p> <p>FY 2012 Plans: Continue support for Government Engineering Technical Support, Logistics Support, Test and Evaluation, Contractor Support Services, Program Management Support and program related travel.</p>			
Accomplishments/Planned Programs Subtotals	18.440	12.710	22.698

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• RDT&E,N/0305204N: <i>STUAS</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.569
• RDT&E,N/0305234M: <i>Tier II UAS</i>	18.685	26.209	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APN-4/044400: <i>STUASLO (Tier II)</i>	0.000	9.006	12.772	0.000	12.772	9.611	9.766	9.934	0.000	Continuing	Continuing
• APN-6/060510: <i>STUASLO (Tier II)</i>	0.000	0.000	0.925	0.000	0.925	0.680	0.119	0.121	0.123	Continuing	Continuing
• PMC-475700: <i>Tier II UAS</i>	0.000	26.301	0.000	0.000	0.000	27.608	71.664	76.679	79.943	Continuing	Continuing
• RDT&E,N/0206313M: <i>TIER II UAS</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.614
• RDT&E,N/0305239M: <i>STUASLO (Tier II)</i>	0.000	0.000	26.301	0.000	26.301	22.343	11.158	9.289	9.478	Continuing	Continuing

D. Acquisition Strategy

The program office has utilized a competitive acquisition approach for award of the Engineering and Manufacturing Development effort to field a capability which meets threshold requirements. Incremental development will be utilized to field a system fully compliant with documented requirements. An Early Operational Capability option to field an existing offerer's system is included as part of the acquisition approach.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 3192: <i>STUAS</i>

E. Performance Metrics

Attainment of STUAS Initial Operational Capability in accordance with approved schedule.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASLO)</i>	PROJECT 3192: <i>STUAS</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	Insitu, Inc.:Bingen, WA	7.550	7.550	Jun 2011	12.100	Jun 2012	-		12.100	2.100	29.300	29.300
Subtotal			7.550	7.550		12.100		-		12.100	2.100	29.300	29.300

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	WR	NAWC-AD:Patuxent River, MD	1.306	0.666	Nov 2010	1.602	Dec 2011	-		1.602	Continuing	Continuing	Continuing
Training Support	WR	TSD:Orlando, FL	0.675	0.624	Dec 2010	0.963	Dec 2011	-		0.963	Continuing	Continuing	Continuing
Software Engineering Support	WR	NAWC-WD:China Lake, CA	1.050	1.071	Dec 2010	2.093	Dec 2011	-		2.093	Continuing	Continuing	Continuing
Subtotal			3.031	2.361		4.658		-		4.658			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPFF	OPTEVFOR:Norfolk, VA	0.688	0.574	Jan 2011	0.757	Jan 2012	-		0.757	0.000	2.019	2.019
Simulation and Modeling	MIPR	JTC/SIL:Redstone Arsenal, AL	1.136	-		0.500	Mar 2012	-		0.500	Continuing	Continuing	Continuing
Subtotal			1.824	0.574		1.257		-		1.257			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	MIPR	DTIC:FT. Belvoir, VA	0.730	0.576	Jan 2011	0.588	Jan 2012	-		0.588	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 3192: <i>STUAS</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWC-AD:Patuxent River, MD	4.334	1.165	Dec 2010	3.406	Dec 2011	-		3.406	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Ausley:Patuxent River, MD	0.931	0.449	Dec 2010	0.654	Dec 2011	-		0.654	0.000	2.034	2.034
Travel	WR	Various:Various	0.040	0.035	Dec 2010	0.035	Dec 2011	-		0.035	Continuing	Continuing	Continuing
Subtotal			6.035	2.225		4.683		-		4.683			

Remarks
Travel contract type is TO.

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.440	12.710		22.698		-		22.698			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 3192: <i>STUAS</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
STUAS				
Acquisition Milestones: Milestones: Milestone B	4	2010	4	2010
Acquisition Milestones: Milestones: Milestone C	4	2012	4	2012
Acquisition Milestones: Milestones: USMC Initial Operational Capability (IOC)	4	2013	4	2013
Acquisition Milestones: Milestones: USN IOC Landing Ship, Dock	4	2013	4	2013
Acquisition Milestones: Milestones: Full Rate Production Decision Review	4	2013	4	2013
System Development: Hardware and Software Development: EMD	4	2010	4	2012
System Development: Hardware and Software Development: Demo System	1	2011	1	2011
System Development: Hardware and Software Development: Engineering Design Model (EDM) 1	4	2011	4	2011
System Development: Hardware and Software Development: EDM 2	2	2012	2	2012
System Development: Reviews: System Requirements Review	1	2011	1	2011
System Development: Reviews: Critical Design Review	3	2011	3	2011
Test & Evaluation: Technical Evaluation: IT-B1	1	2011	4	2011
Test & Evaluation: Technical Evaluation: IT-B2	4	2011	4	2012
Test & Evaluation: Operational Evaluation: Operational Test and Readiness Review (OTRR) OA-1	1	2011	2	2011
Test & Evaluation: Operational Evaluation: OTRR OA-2	3	2012	4	2012
Test & Evaluation: Operational Evaluation: Initial Operational Test & Evaluation (IOT&E)	2	2013	3	2013
Test & Evaluation: Operational Evaluation: IOT&E Report	3	2013	3	2013
Test & Evaluation: Operational Evaluation: Follow On Test and Evaluation	4	2013	4	2016
	4	2010	4	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305234N: <i>Small (LEVEL 0) Tactical UAS (STUASL0)</i>	PROJECT 3192: <i>STUAS</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestones: Contract Awards: Engineering & Manufacturing Development (EMD) Contract Award (CA)				
Production Milestones: Contract Awards: Low Rate Initial Production (LRIP) CA	4	2012	4	2012
Production Milestones: Contract Awards: FRP Contract Award	4	2013	4	2013
Deliveries: LRIP Delivery APN-4	1	2013	1	2013
Deliveries: FRP Delivery 1	3	2014	3	2014
Deliveries: FRP Delivery 2	2	2015	2	2015
Deliveries: FRP Delivery 3	1	2016	1	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0305237N: <i>Medium Range Maritime UAS</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	-	15.000	-	15.000	160.900	270.500	271.000	311.000	Continuing	Continuing
2770: <i>Medium-Range Maritime Unmanned Aerial System</i>	-	-	15.000	-	15.000	160.900	270.500	271.000	311.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Note: FY11 efforts are budgeted in PE 0305204N, Project Unit 2501 (\$26.352M).

MRMUAS Unmanned Aerial Vehicle Joint Military intelligence Program.

The Medium-Range Maritime Unmanned Aerial System (MRMUAS) Unmanned Aerial Vehicle as a program commenced under PE 0305204N. This new PE was established to fund the Technology Development (TD) and Engineering and Manufacturing Development (EMD) phases of the MRMUAS program. The MRMUAS intended to provide persistent, sea-based, airborne, real-time and near-real-time Intelligence, Surveillance, and Reconnaissance data to Maritime and Special Operations Forces. The MRMUAS will be capable of carrying reconfigurable, multi-Intelligence payloads to extended ranges. MRMUAS will launch and recover vertically, making it employable from all air-capable ships, as well as land bases. The MRMUAS will be able to operate within line-of-sight of a ship, similar to the MQ-8 (Fire Scout) Vertical Take-off unmanned Aerial Vehicle, as well as in a remote, split-based mode that will allow take-off and landing from an air-capable ship and control hand-off to a Mission Control Element via Satellite Command for Beyond Line of Sight operations. The MRMUAS will allow communications to relay between supported forces, as well as broadcast payload data to the supported forces. Interoperability will be achieved through the use of a common control station, also used by Fire Scout, with software modifications for the MRMUAS air vehicle and mission systems. The data from the MRMUAS will be provided through standard DoD Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance systems and networks. MRMUAS is a potential joint program.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	15.000	-	15.000
Total Adjustments	-	-	15.000	-	15.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	15.000	-	15.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0305237N: *Medium Range Maritime UAS*

Change Summary Explanation

This is a new PE established with funding for the TD and EMD phases of the MRMUAS program.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305237N: <i>Medium Range Maritime UAS</i>	PROJECT 2770: <i>Medium-Range Maritime Unmanned Aerial System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2770: <i>Medium-Range Maritime Unmanned Aerial System</i>	-	-	15.000	-	15.000	160.900	270.500	271.000	311.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Note: FY11 efforts are budgeted under PE 0305204N, Project Unit 2501.

A. Mission Description and Budget Item Justification

The Medium-Range Maritime Unmanned Aerial System (MRMUAS) Unmanned Aerial Vehicle as a program commenced under PE 0305204N. This new PE was established to fund the Technology Development (TD) and Engineering and Manufacturing Development (EMD) phases of the MRMUAS program. The MRMUAS intended to provide persistent, sea-based, airborne, real-time and near-real-time Intelligence, Surveillance, and Reconnaissance data to Maritime and Special Operations Forces (SOF). The MRMUAS will be capable of carrying reconfigurable, multi-Intelligence (multi-INT) payloads to extended ranges. MRMUAS will launch and recover vertically, making it employable from all air-capable ships, as well as land bases. The MRMUAS will be able to operate within line-of-sight of a ship, similar to the MQ-8 (Fire Scout) Vertical Take-Off Unmanned Aerial Vehicle, as well as in a remote, split-based mode that will allow take-off and landing from an air-capable ships and control hand-off to a Mission Control Element via Satellite Command for Beyond Line of Sight (BLOS) operations. The MRMUAS will allow communications to relay between supported forces, as well as broadcast payload data to the supported forces. Interoperability will be achieved through the use of a common control station, also used by Fire Scout, with software modifications for the MRMUAS air vehicle and mission systems. The data from the MRMUAS will be provided through standard DoD Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance systems and networks. The MRMUAS system will be composed of air vehicles, associated spares and support equipment, multi-INT sensor payloads, and Ground Control Stations. The MRMUAS will support Surface Warfare, Strike Warfare, Information Warfare, Naval Special Warfare, Operations Outside Major Theaters of War, and Overseas Contingency Operations. MRMUAS is a potential joint program.

In response to a Special Operations Forces (SOF) urgent need and Initial Capability Document that is endorsed by US Central Command, request for a sea based medium range, persistent ISR unmanned air system, Office of the Secretary of Defense (OSD) evaluated options to meet this urgent requirement. This resulted in OSD directing the Navy to upgrade Fire Scout for increased endurance, procure additional aircraft and modify 12 additional ships in the Fiscal Year Defense Plan, to support multiple orbits through FY18, and to initiate a new start MRMUAS follow-on program. MRMUAS will provide the long term capability for the BLOS SOF and Navy Missions.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Product Development	-	-	7.320
Articles:			0
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305237N: <i>Medium Range Maritime UAS</i>	PROJECT 2770: <i>Medium-Range Maritime Unmanned Aerial System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Complete MRMUAS Analysis of Alternatives (AoA) and brief results. Continue drafting/updating of MRMUAS Concept of Operations (CONOPS). Coordinate with AoA and Trade Studies to incorporate latest concepts. Continue execution of up to five (5) studies and analysis contracts in support of MRMUAS concept refinement. Data received from these contracts will be used to support AoA analyses and drafting of initial Key Performance Parameters/Key System Attributes for the MRMUAS Capability Development Document.			
Title: Management Services	-	-	7.680
Articles:			0
FY 2012 Plans: Continue engineering management, program technical management, and management support for the MRMUAS system. Continue preparation of Milestone A required documentation. Prepare TD contract Request for Proposal and Source Selection Plan. Conduct TD Contract Source Selection. Continue program office personnel travel and contract support services.			
Accomplishments/Planned Programs Subtotals	-	-	15.000

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• RDTEN, 0603123N: <i>MRUAS</i>	0.000	0.000	18.823	0.000	18.823	19.143	19.460	0.000	0.000	0.000	57.426
• RDTEN, 0305204N: <i>MEMUAS</i>	0.000	26.352	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.352

D. Acquisition Strategy

Initiated industry trade studies and AOA under FY11 MEMUAS funding. Conduct full and open competition for up to five (5) Trade Studies and analysis contracts with potential MRMUAS vendors. A full and open competition will be conducted to select two (2) vendors for participation in the TD and prototyping phase contracts. At the conclusion of the TD phase, there will be a down select for the single EMD phase contract.

E. Performance Metrics

Successful completion of AoA. Successful completion of Trade Studies. Successful development of draft CONOPS. Successful TD phase.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305237N: <i>Medium Range Maritime UAS</i>	PROJECT 2770: <i>Medium-Range Maritime Unmanned Aerial System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives Support	SS/FFP	Systems Planning and Analysis:Alexandria, VA	-	-		1.110	Mar 2012	-		1.110	0.000	1.110	1.110
Analysis of Alternatives	WR	NAWCAD:Patuxent River, MD	-	-		1.330	Jan 2012	-		1.330	0.000	1.330	
CONOPS Development	TBD	TBD:TBD	-	-		0.440	Mar 2012	-		0.440	0.000	0.440	
Study Contracts (Up to 5)	TBD	TBD:TBD	-	-		4.440	May 2012	-		4.440	0.000	4.440	
Subtotal			-	-		7.320		-		7.320	0.000	7.320	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD:Patuxent River, MD	-	-		4.880	Jan 2012	-		4.880	0.000	4.880	
Program Management Support	Various	Various:Various	-	-		2.570	Jan 2012	-		2.570	0.000	2.570	
Travel	WR	NAWCAD:Patuxent River, MD	-	-		0.230	Jan 2012	-		0.230	0.000	0.230	
Subtotal			-	-		7.680		-		7.680	0.000	7.680	

	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	-	15.000	-	15.000	0.000	15.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305237N: <i>Medium Range Maritime UAS</i>	PROJECT 2770: <i>Medium-Range Maritime Unmanned Aerial System</i>
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MRMUAS	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Milestones	<div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Gate 1 ▲</div> <div style="width: 20%;">MDD ◆</div> <div style="width: 20%;">Gate 2 ▲</div> <div style="width: 20%;">Gate 3A ▲</div> <div style="width: 20%;">MS A ▲</div> <div style="width: 20%;">Gate 3B ▲</div> <div style="width: 20%;">Gate 4/5 ▲</div> <div style="width: 20%;">MS B ▲</div> </div>																											
System Engineering Development																												
Analysis of Alternatives	AOA																											
Concept Design Studies	CD																											
Prototype Phase	Prototype Phase																											
Reviews	<div style="display: flex; justify-content: space-around;"> <div>SRR ■</div> <div>SFR ■</div> <div>PDR ■</div> <div>CDR ■</div> </div>																											
Test & Evaluation (T&E)																												
Development Test	DT																											
Reviews	TRR ■																											

2012PB - 0305237N - 2770 Note: FY11 efforts are budgeted in PE 0305204N, PU 2501

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305237N: <i>Medium Range Maritime UAS</i>	PROJECT 2770: <i>Medium-Range Maritime Unmanned Aerial System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MRMUAS				
Acquisition Milestones: Milestones: Gate 1	2	2011	2	2011
Acquisition Milestones: Milestones: Material Development Decision (MDD)	3	2011	3	2011
Acquisition Milestones: Milestones: Milestone A (MS A)	1	2013	1	2013
Acquisition Milestones: Milestones: Gate 2	2	2012	2	2012
Acquisition Milestones: Milestones: Gate 3B	3	2014	3	2014
Acquisition Milestones: Milestones: Gate 3A	4	2012	4	2012
Acquisition Milestones: Milestones: Gate 4/5	1	2015	1	2015
Acquisition Milestones: Milestones: Milestone B (MS B)	3	2015	3	2015
System Engineering Development: Analysis of Alternatives: Analysis of Alternatives (AOA)	2	2011	2	2012
System Engineering Development: Concept Design Studies: Concept Design (CD)	3	2011	4	2012
System Engineering Development: Prototype Phase: Prototype Phase	1	2013	4	2015
System Engineering Development: Reviews: System Requirements Review (SRR)	3	2013	3	2013
System Engineering Development: Reviews: System Functional Review (SFR)	2	2014	2	2014
System Engineering Development: Reviews: Preliminary Design Review (PDR)	1	2015	1	2015
System Engineering Development: Reviews: Critical Design Review (CDR)	1	2016	1	2016
Test & Evaluation (T&E): Development Test: Development Test (DT)	1	2015	4	2016
Test & Evaluation (T&E): Reviews: Test Readiness Review (TRR)	4	2014	4	2014
Test & Evaluation (T&E): Reviews:	1	2010	1	2010

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0305239M: (U)RQ-21A							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	-	26.301	-	26.301	22.343	11.158	9.289	9.478	Continuing	Continuing
2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUALO)</i>	-	-	26.301	-	26.301	22.343	11.158	9.289	9.478	Continuing	Continuing

Note

New PE for Tier II UAS (STUAS) program per OSD (C) direction.

A. Mission Description and Budget Item Justification

TIER II - This is a combined Navy (PE 0305204N-TCS) and Marine Corps (PE 0305239M) budget submission. The Tier II/UAS will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment, this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver. This submission is the Marine Corps portion of the program and has been coordinated with the Navy budget submission PE 0305204N.

B. Program Change Summary (\$ in Millions)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	26.301	-	26.301
Total Adjustments	-	-	26.301	-	26.301
• Congressional General Reductions					
• Congressional Directed Reductions					
• Congressional Rescissions	-	-			
• Congressional Adds					
• Congressional Directed Transfers					
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	26.301	-	26.301

Change Summary Explanation

Technical: The increase in FY12 RDT&E is due to a technical realignment of the Tier II program into this new Program Element. The Tier II program is in PE 0305234M, Project C2272 in FY10. The Tier II program is in PE 0305234M, Project C2298 in FY11. The Tier II program was realigned to PE 0305239M, Project C2298 in FY12 and out.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305239M: (U)RQ-21A	PROJECT 2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUALO)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUALO)</i>	-	-	26.301	-	26.301	22.343	11.158	9.289	9.478	Continuing	Continuing
Quantity of RDT&E Articles	0	0	1	0	1	0	0	0	0		

Note

This project was in 0305234M in the FY11 PB request.

A. Mission Description and Budget Item Justification

Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

TIER II - This is a combined Navy (PE 0305204N) and Marine Corps (PE 0305239M) budget submission. The Tier II/UAS will provide persistent, Intelligence, Surveillance, and Reconnaissance (ISR) support for tactical level maneuver decisions and unit level force defense/force protection for Navy ships and Marine Corps land forces. This system will fill the ISR capability shortfalls identified by the Navy Small Tactical Unmanned Aircraft System (STUAS) and Marine Corps Tier II UAS efforts. Consisting of four air vehicles, two ground control stations, multiple payloads, and associated launch, recovery and support equipment, this system will support the Navy missions including building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and support of Navy units operating from sea/shore and the Marine Corps close range (<50 nautical miles (nm)) UAS enabling enhanced decision-making and improved integration with ground schemes of maneuver. This submission is the Marine Corps portion of the program and has been coordinated with the Navy budget submission PE 0305204N.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: New Accomplishment/Planned Program Entry	-	-	26.301
Articles:			0
FY 2012 Plans: FY12 RDT&E will procure (2) Government-Owned LRIP Test Articles. FY12 RDT&E will also fund required support for Initial Operation Test and Evaluation (IOT&E). FY12 RDT&E will fund an Engineering Design Model (EDM) for (1) Contractor Owned Ship-Based System			
Accomplishments/Planned Programs Subtotals	-	-	26.301

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305239M: (U)RQ-21A	PROJECT 2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUAL0)</i>

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• PMC/4757: <i>TIER II</i>	0.000	26.301	0.000	0.000	0.000	27.608	71.664	76.679	79.943	0.000	282.195

D. Acquisition Strategy

The FY12 RDT&E funding ensures interoperability/integration costs for Tier II UAS platforms aboard U.S. Navy L-Class ships fulfilling the scheduled integration timelines.

E. Performance Metrics

Down select to final solution.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

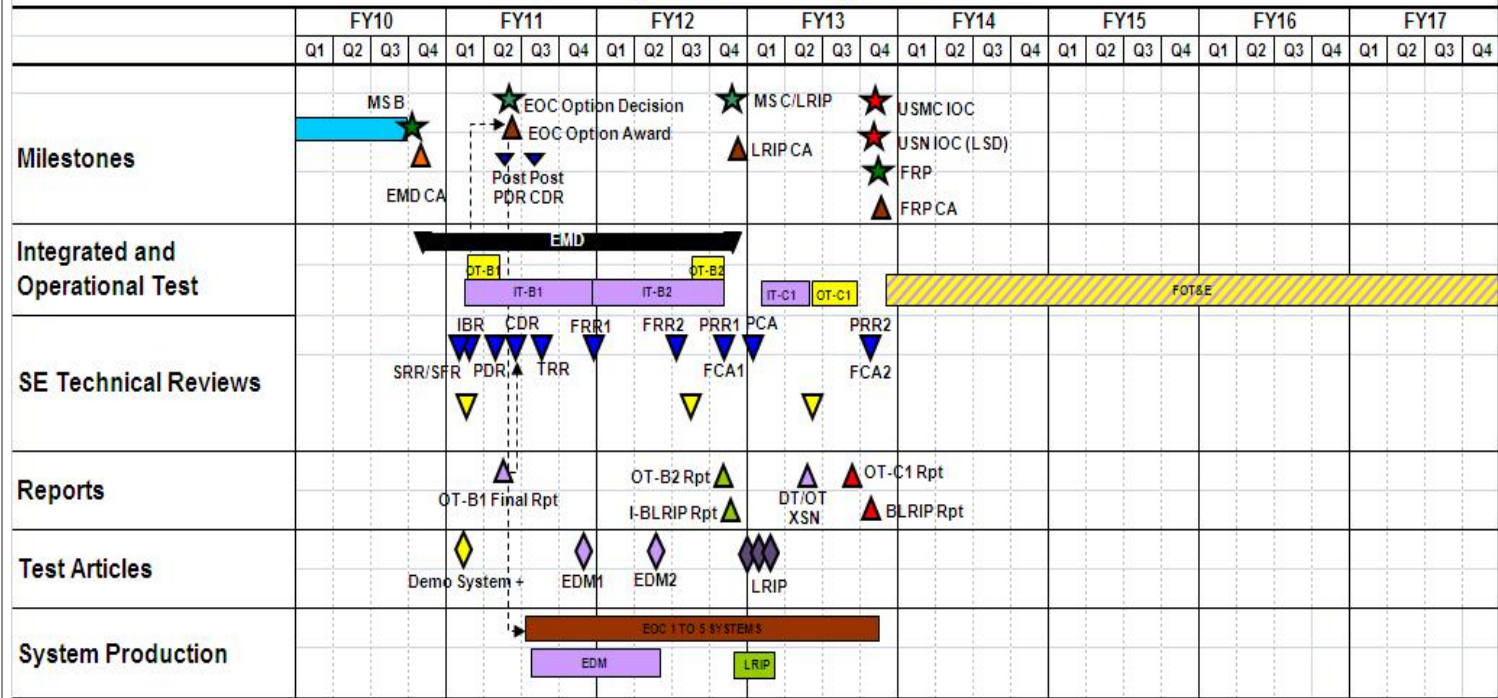
DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY
 1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE
 PE 0305239M: (U)RQ-21A

PROJECT
 2298: *SMALL (LEVEL 0) TACTICAL UAS*
 (STUAL0)

STUAS Integrated Test Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305239M: (U)RQ-21A	PROJECT 2298: <i>SMALL (LEVEL 0) TACTICAL UAS (STUAL0)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2298				
Milestone C	4	2012	4	2012
Marine Corps IOC	4	2013	4	2013
Navy IOC	4	2013	4	2013
Ship Integration (Engineering/design model)	1	2011	4	2012
EDM-Land Based System	4	2011	4	2011
EDM-Ship based system	2	2012	2	2012
EOC	2	2011	4	2013
Milestone B	4	2010	4	2010
Full Rate Production	4	2013	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307217N: <i>EPX (EP-3E Replacement)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	0.198	-	-	-	-	-	-	-	-	0.000	0.198
3015: <i>EPX (EP-3E Replacement)</i>	0.198	-	-	-	-	-	-	-	-	0.000	0.198

A. Mission Description and Budget Item Justification

EPX was the Navy's initial recapitalization effort for existing manned airborne Intelligence, Surveillance, Reconnaissance capabilities and was envisioned to be a transformational multi-intelligence platform to fulfill Navy and Office of the Secretary of Defense requirements. Department determined continuation of effort in current form to be premature.

FY2012 Budget Justification: No funds requested. Decision to terminate current program has been made by the Department of the Navy.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	11.926	-	-	-	-
Current President's Budget	0.198	-	-	-	-
Total Adjustments	-11.728	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-11.400	-			
• SBIR/STTR Transfer	-	-			
• Section 219 Reprogramming	-0.328	-			

Change Summary Explanation

Technical: Not applicable.

Schedule: Under Secretary of Defense for Acquisition, Technology, and Logistics directed Analysis of Alternatives has completed. Decision to terminate current program has been made by the Department of the Navy.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307217N: <i>EPX (EP-3E Replacement)</i>	PROJECT 3015: <i>EPX (EP-3E Replacement)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3015: <i>EPX (EP-3E Replacement)</i>	0.198	-	-	-	-	-	-	-	-	0.000	0.198
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

EPX was the Navy's initial recapitalization effort for existing manned airborne Intelligence, Surveillance, Reconnaissance (ISR) capabilities and was envisioned to be a transformational multi-intelligence platform to fulfill Navy and Office of the Secretary of Defense requirements. Department determined continuation of effort in current form to be premature.

FY2012 Budget Justification: No funds requested. Decision to terminate current program has been made by the Department of the Navy.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: EPX Government/Contractor systems engineering support; ISR study	0.198	-	-
Articles:	0		
FY 2010 Accomplishments: Funded Government EPX program management.			
Accomplishments/Planned Programs Subtotals	0.198	-	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not applicable.

E. Performance Metrics

Not Applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308601N: <i>Modeling & Simulation Support</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	7.709	8.158	8.292	-	8.292	8.438	8.628	8.808	8.960	Continuing	Continuing
2222: <i>Modeling & Simulation</i>	7.709	8.158	8.292	-	8.292	8.438	8.628	8.808	8.960	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element addresses projects under the Navy Modeling and Simulation (M&S) Office. It supports technical and management initiatives directed by Congress, Department of Defense (DoD), Secretary of the Navy (SECNAV), and Chief of Naval Operations (CNO) with the aim of bringing organization and focus to the development and use of M&S throughout the Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S, and represents Navy interests in Joint and other agency initiatives. It funds efforts to define and coordinate the corporate Navy M&S policy and guidance to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD. Efforts are organized around four product areas: (1) Engineering Studies and Analysis: identifies and measures the relevance of existing and emerging standards, technologies and services necessary to guide Navy M&S use; (2) Products and Services: promotes the policy, standards and technologies necessary to guide more efficient development and use of M&S across the Navy, including development and management of the Navy Modeling and Simulation Information Service (NMSIS); (3) M&S Quality Assurance Program: establishes and manages a disciplined process of model Verification, Validation and Accreditation (VV&A); and (4) Simulation Experiments: supports M&S use in Navy exercises and experiments across a wide variety of warfighting and supporting communities. Specifically, Simulation Experiments integrate appropriate models and simulations into Fleet exercises to test, validate and evaluate for possible transition to operationally relevant M&S products in support of Navy operations, training, acquisition, analysis and assessment.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	7.995	8.158	8.306	-	8.306
Current President's Budget	7.709	8.158	8.292	-	8.292
Total Adjustments	-0.286	-	-0.014	-	-0.014
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.249	-			
• Section 219 Reprogramming	-0.037	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.014	-	-0.014

Change Summary Explanation

Technical: Not applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0308601N: *Modeling & Simulation Support*

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308601N: <i>Modeling & Simulation Support</i>	PROJECT 2222: <i>Modeling & Simulation</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2222: <i>Modeling & Simulation</i>	7.709	8.158	8.292	-	8.292	8.438	8.628	8.808	8.960	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project addresses critical coordination of Navy M&S efforts, integrates individual programs into a coherent whole, promotes reuse of resources, and aligns Navy efforts with Joint programs. It develops and maintains a comprehensive repository of models, simulations and authoritative data to support broad-based Navy requirements. It promotes reusability through the Quality Assurance process for models, simulations and data, and enhances interoperability by coordinating and reviewing Navy's transition to DoD-mandated standards for distributed simulations. The project participates in Fleet exercise experiments, distributed simulations and demonstrations such as Limited Objective Experiments (LOE), Virtual at Sea Training (VAST), and Virtual Missile Range (VMR).

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: ENGINEERING STUDIES AND ANALYSIS	3.637	3.816	3.885
Articles:	0	0	0
<p>Description: This activity conducts engineering studies and analyses aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S, and investigate Service-unique requirements for standards or guidance. Individual efforts focus on developing or evaluating approaches to optimize training, assessments and acquisition functional/mission objectives through more efficient development and use of M&S. This activity develops methodologies and standards that will result in model and data reusability and interoperability through the formulation of a technical framework. These standards will support the full range of architecture and engineering design and analysis requirements across the Navy. This activity also provides an M&S degree program through the Naval Postgraduate School, Modeling Virtual Environments and Simulation (MOVES) curriculum.</p> <p>FY 2010 Accomplishments: Continued to work with the MOVES Institute and the MOVES degree program to provide military relevant thesis topics for research. Continued M&S support to Fleet Forces Command (FFC) for the CNO-directed Task Force Sim. Continued M&S utilization in Campaign/Mission assessments to support OPNAV N81 analysis of warfighting requirements.</p> <p>FY 2011 Plans: Continue all efforts of FY-2010</p> <p>FY 2012 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0308601N: <i>Modeling & Simulation Support</i>		PROJECT 2222: <i>Modeling & Simulation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Continue all efforts of FY-2011				
Title: PRODUCT AND SERVICES		1.629	1.768	1.786
		0	0	0
Articles:				
Description: This activity supports development of common services, tools, databases and standards to ensure the integration and connectivity of M&S products employed in Naval assessments, in training and acquisition, and among operational communities. It manages and maintains the Navy M&S Information System (NMSIS), as a central M&S information resource to support informed M&S investment decision making across Navy. It provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S standardization within the Navy. It provides annual updates to the Naval M&S Catalog, Master Plan, and Investment Strategy.				
FY 2010 Accomplishments: Continued to promote and enhance state-of-practice M&S catalog and technology within the Navy M&S community. Continued the development, servicing and use of M&S catalog as directed under applicable DoD DIR, SECNAVINST, and OPNAVINST. Continued to organize and facilitate quarterly NAVY M&S Technical Interchange Meetings to bring together the Navy M&S community for a direct interchange of M&S requirements, technology, standards and experience. Continued to foster and develop the DoD M&S Standards Process that draws M&S experts from the acquisition, training and operational communities, and from industry. Update DON VV&A Instructions to ensure compliance with new DoD Instructions				
FY 2011 Plans: Continue all efforts of FY-2010				
FY 2012 Plans: Continue all efforts of FY-2011				
Title: M&S QUALITY ASSURANCE PROGRAM		0.536	0.580	0.591
		0	0	0
Articles:				
Description: This activity implements and manages the Modeling and Simulation (M&S) Quality Assurance development of the VV&A process and guidelines for modeling, simulation, and data. It reviews both new and legacy M&S VV&A plans and reports, and develops and maintains the Naval M&S VV&A repository. It establishes and implements a VV&A training curriculum for developers and accreditors, and provides an annual VV&A assessment to CNO.				

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308601N: <i>Modeling & Simulation Support</i>	PROJECT 2222: <i>Modeling & Simulation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p><i>FY 2010 Accomplishments:</i> Continue to develop and update case studies within the VV&A Handbook Continued to incorporate information developed for training/education into the VV&A Handbook. Continued to coordinate with the NMSIS and DoD M&S catalog effort to update and Beta test new VV&A data entry fields as required. Assist the Navy Virtual SYSCOM in writing a VV&A Instruction for the SYSCOMS Lead the DoD Acquisition Community's VV&A Subcommittee in its attempt to bring VV&A data to the M&S catalog</p> <p><i>FY 2011 Plans:</i> Continue all efforts of FY-2010</p> <p><i>FY 2012 Plans:</i> Continue all efforts of FY-2011</p>				
<p><i>Title:</i> SIMULATION EXPERIMENTS</p> <p><i>Description:</i> This activity supports Fleet exercises and experiments through the application of distributed simulations across a wide variety of warfighting and supporting communities. Specifically, it develops and integrates appropriate M&S into Fleet Synthetic Training (FST), and develops simulation efforts to test and evolve the standards for models, interfaces, and data. It supports development of tools necessary to enable the seamless access and use of operationally relevant M&S products to support Navy training, warfare assessments and acquisition requirements.</p> <p><i>FY 2010 Accomplishments:</i> Continue all efforts of FY-2009</p> <p><i>FY 2011 Plans:</i> Continue all efforts of FY-2010</p> <p><i>FY 2012 Plans:</i> Continue all efforts of FY-2011</p>		<p><i>Articles:</i></p> <p>1.907 0</p>	<p>1.994 0</p>	<p>2.030 0</p>
Accomplishments/Planned Programs Subtotals		7.709	8.158	8.292

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308601N: <i>Modeling & Simulation Support</i>	PROJECT 2222: <i>Modeling & Simulation</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

This program supports ongoing efforts to define, develop and utilize M&S technologies, standards and techniques in DoN and Joint programs across a wide range of disciplines and technical arenas. As such, performance metrics are specific to individual projects initiated under this program element. Representative examples of performance criteria for M&S support include the following: VV&A of deployed M&S systems to support Fleet and Force missions and assessments; degree of composability and adaptability of system architectures employed in M&S systems; ability of M&S systems to replicate and permit recreation of force or system interactions that otherwise would be performed by more labor-intensive or expensive personnel, forces or elements; degree to which M&S frameworks would permit rapid integration and employment of analytic capabilities for the analysis and documentation of warfighter missions, weapons systems or Tactics, Techniques and Procedures (TT&P); and ability of a specific M&S technology or technique to meet the requirements specified in an individual project supported by this program.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308601N: <i>Modeling & Simulation Support</i>	PROJECT 2222: <i>Modeling & Simulation</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Navy M&S Information Service	WR	MARCORSYSCOM:Quantico, VA	0.307	0.761	Oct 2010	0.403	Oct 2011	-		0.403	Continuing	Continuing	Continuing
M&S to DODAF Structural Metadata	WR	NAWC:Pax River, MD	2.114	0.757	Oct 2010	0.770	Oct 2011	-		0.770	1.527	5.168	
DODAF to M&S Structural Metadata	WR	NAWC TSD:Orlando, FL	0.850	0.757	Oct 2010	0.770	Oct 2011	-		0.770	1.527	3.904	
M&S Postgraduate Education	WR	NPS Moves Institute:Monterey, CA	0.798	0.822	Oct 2010	0.847	Oct 2011	-		0.847	0.000	2.467	
Training M&S System Integration Initiative	WR	ONR:Arlington, VA	0.850	0.695	Oct 2010	0.126	Oct 2011	-		0.126	0.835	2.506	
Navy M&S Mission Suite	WR	SPAWAR HQ:San Diego, VA	0.500	0.250	Oct 2010	1.000	Oct 2011	-		1.000	1.750	3.500	
M&S Data Visibility/Online Tools	WR	SPAWAR LANT:North Charleston, SC	1.748	0.151	Oct 2010	0.151	Oct 2011	-		0.151	0.000	2.050	
USMC STORM	WR	MCCDC:Quantico, VA	0.314	0.667	Oct 2010	0.588	Apr 2012	-		0.588	0.750	2.319	
Navy Future Campaign Model	WR	NAVAIR:Pax River, MD	-	0.500	Oct 2010	0.500	Oct 2011	-		0.500	0.750	1.750	
Subtotal			7.481	5.360		5.155		-		5.155			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Navy M&S Archiving	WR	NAVAIR:Pax River, MD	-	0.083	Oct 2010	0.086	Oct 2011	-		0.086	0.170	0.339	
Subtotal			-	0.083		0.086		-		0.086	0.170	0.339	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NMSO Director, VV&A	WR	SPAWAR LANT:North Charleston, SC	-	0.719	Oct 2010	0.741	Oct 2011	-		0.741	0.000	1.460	

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>			PE 0702207N: <i>Depot Maintenance (NON-IF)</i>								
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	14.186	18.649	21.609	-	21.609	15.828	22.089	20.298	20.532	Continuing	Continuing
3030: <i>FA-18 SLAP</i>	13.234	18.649	21.609	-	21.609	15.828	22.089	20.298	20.532	Continuing	Continuing
3182: <i>T-45 SLAP</i>	0.952	-	-	-	-	-	-	-	-	0.000	0.952

A. Mission Description and Budget Item Justification

3030: The F/A-18A-F Service Life Assessment Program (SLAP) is assessing the structural condition of the F/A-18 fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve Chief of Naval Operations inventory requirements.

3182: The T-45 SLAP is assessing the structural condition of the T-45 Fleet in order to determine structural modifications necessary to extend the aircraft designed service life to support Pilot Training Requirements and Naval Flight Officer Training Requirements until 2021.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	14.614	18.649	21.257	-	21.257
Current President's Budget	14.186	18.649	21.609	-	21.609
Total Adjustments	-0.428	-	0.352	-	0.352
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.415	-			
• Program Adjustments	-	-	-0.046	-	-0.046
• Section 219 Reprogramming	-0.013	-	-	-	-
• Rate/Misc Adjustments	-	-	0.398	-	0.398

Change Summary Explanation

Technical: Not applicable.

Schedule: 3030 F/A-18 SLAP schedule changes are due to schedule descriptions and events that have been updated to more accurately reflect the efforts of the SLAP Program. Subsystems SLAP is being broken out as a separate effort from Structural SLAP for clarity.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207N: <i>Depot Maintenance (NON-IF)</i>	PROJECT 3030: <i>FA-18 SLAP</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3030: <i>FA-18 SLAP</i>	13.234	18.649	21.609	-	21.609	15.828	22.089	20.298	20.532	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The F/A-18E/F Service Life Assessment Program (SLAP) is assessing the structural condition of the F/A-18E/F fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve Chief of Naval Operations (CNO) inventory requirements. The goal of the SLAP program is to identify critical structures and components that can achieve the extended service life limit goals. An increase in total landings and flight hours would allow the F/A-18E/F to meet CNO inventory requirements, to include planning for the announced one year Joint Strike Fighter slide. This effort is required to be conducted for these airframes to ascertain what actions and modifications must be taken to safely operate each system beyond its designed life until the targeted end of service life.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: F/A-18 SLAP	13.234	18.649	21.609
Articles:	0	0	0
Description: Funding supports assessing the structural condition of the F/A-18 fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve CNO inventory requirements.			
FY 2010 Accomplishments: Continue analysis of numerous data points to provide exploitation of complete structural fatigue testing with the expectation of extending the current service life of F/A-18E/F flight hours from 6,000 to 9,000 hours.			
FY 2011 Plans: Continue analysis of numerous data points to provide exploitation of complete structural fatigue testing with the expectation of extending the current service life of F/A-18E/F flight hours from 6,000 to 9,000 hours.			
FY 2012 Plans: Continue analysis of numerous data points to provide exploitation of complete structural fatigue testing with the expectation of extending the current service life of F/A-18E/F flight hours from 6,000 to 9,000 hours.			
Accomplishments/Planned Programs Subtotals	13.234	18.649	21.609

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207N: <i>Depot Maintenance (NON-IF)</i>	PROJECT 3030: <i>FA-18 SLAP</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN/0525: <i>F-18 Series (OSIP 011-99)</i>	106.555	117.466	146.592	0.000	146.592	277.708	462.988	368.770	300.300	238.904	2,608.653

D. Acquisition Strategy

The SLAP program employs sole source contracts with Boeing, the aircraft prime manufacturer. SLAP consists of structural analyses of the main landing gear, arresting hook and catapult back-up structures, vertical tails, wings and fuselage. The current life limits for the F/A-18 E/F are 6,000FH, 2,250 Cat/Traps and 15,750 total landings. The F/A-18 E/F SLAP program of record states the SLAP goals as 12,000FH, 3,500 Cat/Traps and 22,500 total landings. The primary objective of F/A-18 E/F SLAP is to determine if the stated SLAP goals are feasible. SLAP further decomposes program of record goals into smaller discreet steps, analyzing requirements to extend flight hours from 6,000 to 9,000 first. These analyses will provide for the development of aircraft modifications necessary to extend total aircraft landings, catapults/arrestments, and flight hours. The F/A-18 SLAP Program consists of two major engineering efforts: the aircraft structural assessment and the aircraft subsystems assessment. Both efforts are broken into multiple phases which develop tools and models, assess current aircraft usage, and develop concepts to extend aircraft life to meet CNO objectives. The program will combine exploitation of complete structural fatigue testing and actual fleet usage with the expectation of extending the service life of the F/A-18 E/F aircraft. Conducting F/A-18 E/F SLAP to study the aircraft lifetime will provide a better estimate of aircraft service life and a follow on Service Life Extension Program (SLEP).

E. Performance Metrics

The SLAP provides an assessment of aircraft structure fatigue life as affected by flight maneuver, catapults, arrestments and landings, based on actual usage and identifies the efforts required to extend the aircraft life to SLAP goals. During SLAP Phase A (FY08-FY12) tools and modeling necessary to assess usage and fatigue life are developed. During SLAP Phase B (FY11-FY13) specific structural locations which do not meet SLAP goals are identified and analyzed. Flight Control Surface and Subsystems SLAP is also initiated concurrently with Structures Phase B. Retrofit concepts and repairs for deficient locations are developed during SLAP Phase C (FY13-FY17). SLAP is followed by the SLEP during which the actual retrofit and repairs are performed under a future OSIP to be established in FY14.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207N: <i>Depot Maintenance (NON-IF)</i>	PROJECT 3030: <i>FA-18 SLAP</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prod Dev SLAP F/A-18A-D	SS/CPFF	Boeing:St. Louis, MO	28.775	-		-		-		-	0.000	28.775	28.775
Prod Dev SLAP F/A-18E-F	SS/CPFF	Boeing:St. Louis, MO	28.120	12.235	Mar 2011	14.665	Mar 2012	-		14.665	53.425	108.445	108.445
Subtotal			56.895	12.235		14.665		-		14.665	53.425	137.220	137.220

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SLAP Inventory Model	WR	ONR:Arlington, VA	2.250	-		-		-		-	0.000	2.250	
SLAP F/A-18 E/F	WR	NAWCAD:Patuxent River, MD	3.872	0.306	Dec 2010	1.551	Jan 2012	-		1.551	2.911	8.640	
SLAP F/A-18 E/F	WR	FRC Southwest:San Diego, CA	2.057	5.273	Dec 2010	5.020	Jan 2012	-		5.020	22.841	35.191	
Subtotal			8.179	5.579		6.571		-		6.571	25.752	46.081	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Dev Test & Eval - SLAP E/F	WR	NAWCAD:Pax River, MD	-	0.500	Jan 2011	-		-		-	0.500	1.000	
Subtotal			-	0.500		-		-		-	0.500	1.000	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Govt ETS SLAP F/A-18 E/F	WR	NAWCAD:Pax River, MD	0.367	0.335	Dec 2010	0.373	Jan 2012	-		0.373	0.000	1.075	
Subtotal			0.367	0.335		0.373		-		0.373	0.000	1.075	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207N: <i>Depot Maintenance (NON-IF)</i>	PROJECT 3030: <i>FA-18 SLAP</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Service Life Assessment Program F/A-18				
Structures: 1.0 Structures Phase A	1	2010	4	2012
Structures: 2.0 Structures Phase B	1	2012	4	2014
Structures: 3.0 Structures Phase C	1	2014	4	2016
Subsystems: 4.0 Subsystems Phase A	1	2010	4	2010
Subsystems: 5.0 Subsystems Phase B	1	2011	1	2015
Subsystems: 6.0 Subsystems Phase C	2	2015	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207N: <i>Depot Maintenance (NON-IF)</i>	PROJECT 3182: <i>T-45 SLAP</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3182: <i>T-45 SLAP</i>	0.952	-	-	-	-	-	-	-	-	0.000	0.952
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The T-45 Service Life Assessment Program (SLAP) is assessing the structural condition of the T-45 fleet in order to determine structural modifications necessary to extend the aircraft designed service life to support Pilot Training Requirements (PTR) and Naval Flight Officer Training Requirements (NTR) until 2021. The T-45 aircraft structure is currently fatigue limited to 14,400 flight hours based on initial full-scale fatigue tests conducted from 1992-1996. This service life limit prevents the T-45 fleet from meeting PTR/NTR requirements past 2016. Recent studies have determined that the fleet squadrons have not been flying the T-45 aircraft as aggressively as the initial fatigue studies predicted. These studies demonstrate that the 14,400 flight hour service life can likely be extended to 21,600 flight hours, which will support meeting PTR/NTR until 2021. A T-45 SLAP is required to assess the critical areas within the structure that require modifications to achieve a 21,600 flight hour service life. This assessment will be based on the updated fleet aircraft usage spectrum and future predicted training missions of the T-45 aircraft. The assessment will address critical structural areas that are either landing and/or flight hour limited. To maintain PTR/NTR beyond 2021, analysis and studies will be conducted to outline improvements, assess manufacturing capabilities and develop specifications for future trainer aircraft.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: T-45 SLAP	0.952	-	-
Articles:	0		
FY 2010 Accomplishments: Build/Publish results in three separate reports (Updated Finite Element Model report, SLAP Internal Loads Methodology report, and SLAP Fatigue Analysis report).			
Accomplishments/Planned Programs Subtotals	0.952	-	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

The SLAP is a sole source contract effort with Boeing, the aircraft prime contractor. SLAP consists of structural analyses of landing gear, arresting hook and catapult back-up structure, vertical tail, wings and fuselage. These analyses will facilitate the future development of aircraft modifications necessary to extend the total aircraft service life from 14,400 to 21,600 flight hours.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702207N: <i>Depot Maintenance (NON-IF)</i>	PROJECT 3182: <i>T-45 SLAP</i>

E. Performance Metrics

SLAP provides an assessment of aircraft structure fatigue life as affected by flight maneuver, catapults, arrestments and landings, based on actual usage and identifies the efforts required to extend the aircraft life to SLAP goals. Effort delineates tasking incrementally to include; Tools and modeling necessary to assess usage and fatigue life are developed, specific structural locations which do not meet SLAP goals are identified and analyzed. Retrofit concepts and repairs for deficient locations are developed, followed by the Service Life Extension Program during which the actual retrofit and repairs are undertaken.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				PE 0702239N: <i>Avionics Component Improvement Program</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	3.438	3.250	-	-	-	-	-	-	-	0.000	6.688
3170: <i>Avionics Component Improvement Program(AVCIP)</i>	2.641	3.250	-	-	-	-	-	-	-	0.000	5.891
9999: <i>Congressional Adds</i>	0.797	-	-	-	-	-	-	-	-	0.000	0.797

A. Mission Description and Budget Item Justification

Project 3170 - The Avionics Component Improvement Program (AvCIP) develops, demonstrates, integrates, tests and evaluates solutions to address critical readiness and reliability deficiencies, obsolescence, loss of sustainability, and top repair cost drivers in Navy in-service avionics systems. Project candidates are collected from across all platforms, reviewed, competed and selected in the year prior to funding allocation.

Beginning in FY 2012, Project Unit 3170 transfers to Standards Development, PE 0604215N, Project Unit 0572.

Project 9999 - Research targeted toward extending the life of legacy avionics systems. The project will build on previous avionics life extension developments. The extension of existing avionics systems will allow the deferral of upgrades that could save the Department of Defense millions of dollars.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	3.511	3.250	3.322	-	3.322
Current President's Budget	3.438	3.250	-	-	-
Total Adjustments	-0.073	-	-3.322	-	-3.322
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.048	-			
• Program Adjustments	-	-	-3.322	-	-3.322
• Section 219 Reprogramming	-0.024	-	-	-	-
• Congressional General Reductions Adjustments	-0.001	-	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>
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Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Avionics Life Extension*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	0.797	-
	0.797	-
	0.797	-

Change Summary Explanation

Technical: Not applicable.

Schedule:

AvCIP - FY10 Project selections were added to schedule. Project 09A E-2C APS-145 WRA-29 Radar RF Amplifier Qual slipped from 4Q10 to 1Q11 due to technical issues identified during bench testing that have been corrected.

Congressional Add: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 3170: <i>Avionics Component Improvement Program(AVCIP)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3170: <i>Avionics Component Improvement Program(AVCIP)</i>	2.641	3.250	-	-	-	-	-	-	-	0.000	5.891
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Avionics Component Improvement Program (AvCIP) provides design, development, demonstration, test and evaluation, and integration support to resolve critical readiness and reliability deficiencies, obsolescence, loss of sustainability and top repair cost drivers of in-service Navy avionics systems. Funds are competitively allocated across multi-platform commodity and platform-specific projects with the objective of maintaining Avionics systems effectiveness at levels required to ensure mission success. AvCIP has been endorsed by the OSD Business Initiatives Council as a cooperative tri-service program that adopts the better business practices and proven resourcing models of the Engine Component Improvement Program. Resources are directed just prior to the execution year, allowing funds to address the most current fleet issues and accelerate solution fielding. Lack of out-year deliverable specificity is mitigated through definition of Avionics capability evolution in the Core Avionics Master Plan. Although Avionics association to digital technology brings challenges to keep pace with Moore's Law and stay ahead of obsolescence, it also affords significant opportunity to reap benefits of emerging advancements. Conversion of legacy systems from analog to digital components has consistently resulted in reliability gains that significantly reduce maintenance/repair activity/costs, save weight and space, and increase operational availability. Modern open system architecture technology insertion improves system upgradeability, by reducing integration time and cost. Avionics systems are the vehicles that enable platform connectivity and interoperability. AvCIP will help platforms integrate the modern technology that will allow them to keep pace with the rapid evolution of transformational network centric operations development. AvCIP also provides a vehicle to address unanticipated performance issues or critical changes in threat, tactics or operational demands revealed during deployment without disrupting program budget profiles designed for other purposes. AvCIP is designed to support manned and unmanned, common and unique, fixed and rotary wing aircraft electronic systems, including communications, navigation, surveillance, sensors, combat identification, civil interoperability, safety, mission data processing and display, and network connectivity equipment. Initiative selection is based upon analysis of operational priority, performance improvement, capability benefit, scope of applicability across fleet platform or weapon system inventory, technical risk, delivery time, cost and life cycle return on investment.

Beginning in FY 2012, Project Unit 3170 transfers to Standards Development, PE 0604215N, Project Unit 0572.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: AvCIP	2.641	3.250	-
Articles:	0	0	
Description: Investigate High Value Return on Investment Candidates, addressing avionics critical readiness and reliability deficiencies, obsolescence, loss of sustainability and top repair cost drivers. Prioritize critical avionics performance, capability and obsolescence problems that require immediate attention. Pursue solutions to these problems based upon urgency, warfighting contribution and return on investment. Develop and test system solutions based on priority. Resources will cover design and			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 3170: <i>Avionics Component Improvement Program(AVCIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
development, prototypes, platform integration, engineering, developmental/operational testing, program management, contracting and logistics efforts. Logistics will include efforts such as technical data, support equipment, provisioning, and training.			
<i>FY 2010 Accomplishments:</i> (a) Completed qualification for Radar Altimeter Shock Mount; (b) Continue second phase of E-2C APS-145 Radar Radio Frequency Amplifier; (c) Completed design for a modern digital auto-pilot for EP-3 airplanes; (d) Contract awarded for the P-3C Maintenance Data Processing Station UYQ-76A to qualify a 24 channel Global Positioning System signal reception circuit card; (e) Contract awarded to design a modern component cockpit lighting system for E-2C;(f) Contract awarded to implement a modern component sensor for reliable emergency hatch lighting in E-2C; (g) Contract awarded to redesign APN-171 circuit cards eliminating Diminishing Manufacturing Services Material Shortages issues.			
<i>FY 2011 Plans:</i> Complete second phase of E-2C APS-145 Radar Radio Frequency Amplifier. Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters). Projects will be similar to those addressed above in FY10. They will be chosen following a comprehensive review of most important and executable project submissions. In order to address those issues with more imminent and direct Fleet operational impacts, this review is completed following a formal solicitation and review that is completed mid-year in the year prior to execution. Candidate prioritization and selection are followed by project endorsement which leads to contract award in year of execution.			
Accomplishments/Planned Programs Subtotals	2.641	3.250	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN/0577: <i>Common Avionics</i>	1.993	2.000	2.000	0.000	2.000	2.000	2.000	2.000	2.095	114.635	130.693

D. Acquisition Strategy

AvCIP will annually compete candidate solutions according to criticality of operational contribution, technical risk, return on investment, and breadth of application. OPNAV N88 and N43, NAVAIR, NAVICP and the Fleet will participate in project selection for execution year allocation. The AvCIP Integrated Program Team will monitor project execution and track return on investment using Fleet supply and component performance tracking systems (i.e., Snapshot, Naval Aviation Logistics Command/Management Information System, Naval Aviation Logistics Data Analysis, Logistics Management Data System, Visibility and Management of Operation and Support Cost). Demonstrated Fleet operation/sustainment cost avoidances will be coordinated with N43 Flying Hour Program. Modification solutions include modular hardware, software and material upgrades. Resources will cover design and development, prototypes, platform integration, engineering, developmental/operational testing, program management, contracting and logistics efforts. Logistics will include efforts such as technical data, support equipment, provisioning, and training.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 3170: <i>Avionics Component Improvement Program(AVCIP)</i>

E. Performance Metrics

The AvCIP program goal is successful establishment of AvCIP projects, execution and benefits tracking mechanisms.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 3170: <i>Avionics Component Improvement Program(AVCIP)</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	TBD:TBD	-	0.550	Mar 2011	-		-		-	0.000	0.550	
Ancillary Hardware Development	TBD	TBD:TBD	-	0.450	Mar 2011	-		-		-	0.000	0.450	
Systems Engineering	TBD	TBD:TBD	-	1.094	Mar 2011	-		-		-	0.000	1.094	
Prior Year Prod Dev no Longer Funded in Budget Year or Out years	Various	Various:Various	4.586	-		-		-		-	0.000	4.586	
Subtotal			4.586	2.094		-		-		-	0.000	6.680	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	TBD	TBD:TBD	-	0.150	Mar 2011	-		-		-	0.000	0.150	
Studies & Analyses	TBD	TBD:TBD	-	0.300	Mar 2011	-		-		-	0.000	0.300	
Prior Year Support no Longer Funded in Budget Year or Out years	Various	Various:Various	0.701	-		-		-		-	0.000	0.701	
Subtotal			0.701	0.450		-		-		-	0.000	1.151	

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	TBD	TBD:TBD	-	0.350	Nov 2010	-		-		-	0.000	0.350	
Prior Year T&E no Longer Funded in Budget Year or Out years	Various	Various:Various	0.230	-		-		-		-	0.000	0.230	
Subtotal			0.230	0.350		-		-		-	0.000	0.580	

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0702239N: *Avionics Component Improvement Program*

PROJECT

3170: *Avionics Component Improvement Program(AVCIP)*

AVIONICS COMPONENT IMPROVEMENT PROGRAM (AVCIP)	FY 2010				FY 2011				FY 2012	FY 2013	FY 2014	FY 2015	FY 2016			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
ACQUISITION MILESTONES																
FUNDING ALLOCATION	▲				▲											
CANDIDATE COLLECTION		▬				▬										
CANDIDATE EVALUATION																
CANDIDATE PRIORITIZATION & SELECTION			▲				▲									
CANDIDATE ENDORSEMENT			▲				▲									
CONTRACT ESTABLISHMENT		▬				▬										
SELECTED AVCIP PROJECTS																
07B F/A-18 Radar Altimeter Mod	F/A-18 QUAL															
09A E-2C APS-145 WRA-29 Radar RF Amplifier	E-2C DR		E-2C TEST				E-2C QUAL									
10A EP-3 Digital Autopilot Upgrade	EP-3 CA		EP-3 PDR	EP-3 CDR			EP-3 TEST	EP-3 QUAL								
10B P-3C MDPS UYQ-76A	P-3C CA			P-3C TEST			P-3C QUAL									
10C F/A-18E/F MAGR 2K GPS			F/A-18E/F CA	F/A-18E/F PDR/CDR	F/A-18E/F TEST	F/A-18E/F QUAL										
10D E-2C Overhead Cockpit White Light	E-2C CA						E-2C DR		E-2C TEST	E-2C QUAL						
10E E-2C Overhead Cockpit Emergency Escape Hatch Lighting	E-2C CA			E-2C DR			E-2C TEST	E-2C QUAL								
10F AN/APN-171 SRA DMSMS			AN/APN-171 CA	AN/APN-171 DEL	AN/APN-171 CERT											

2012PB - 0702239N - 3170

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 3170: <i>Avionics Component Improvement Program(AVCIP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
AVIONICS COMPONENT IMPROVEMENT PROGRAM (AVCIP)				
ACQUISITION MILESTONES: FUNDING ALLOCATION: AvCIP Funding Allocation	1	2010	1	2010
ACQUISITION MILESTONES: FUNDING ALLOCATION: AvCIP Funding Allocation 1	1	2011	1	2011
ACQUISITION MILESTONES: CANDIDATE COLLECTION: AvCIP Candidate Collection	2	2010	3	2010
ACQUISITION MILESTONES: CANDIDATE COLLECTION: AvCIP Candidate Collection 1	2	2011	3	2011
ACQUISITION MILESTONES: CANDIDATE EVALUATION: AvCIP Candidate Evaluation	2	2010	3	2010
ACQUISITION MILESTONES: CANDIDATE EVALUATION: AvCIP Candidate Evaluation 1	2	2011	3	2011
ACQUISITION MILESTONES: CANDIDATE PRIORITIZATION & SELECTION: AvCIP Candidate Prioritization & Selection	3	2010	3	2010
ACQUISITION MILESTONES: CANDIDATE PRIORITIZATION & SELECTION: AvCIP Candidate Prioritization & Selection 1	3	2011	3	2011
ACQUISITION MILESTONES: CANDIDATE ENDORSEMENT: AvCIP Candidate Endorsement	3	2010	3	2010
ACQUISITION MILESTONES: CANDIDATE ENDORSEMENT: AvCIP Candidate Endorsement 1	3	2011	3	2011
ACQUISITION MILESTONES: CONTRACT ESTABLISHMENT: AvCIP Project Contract Establishment	3	2010	4	2010
ACQUISITION MILESTONES: CONTRACT ESTABLISHMENT: AvCIP Project Contract Establishment 1	3	2011	4	2011
SELECTED AVCIP PROJECTS: 07B F/A-18 Radar Altimeter Mod: -Qualification F/A-18	1	2010	1	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 3170: <i>Avionics Component Improvement Program(AVCIP)</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SELECTED AVCIP PROJECTS: 09A E-2C APS-145 WRA-29 Radar RF Amplifier: - Design Review E-2C AP-145	1	2010	1	2010
SELECTED AVCIP PROJECTS: 09A E-2C APS-145 WRA-29 Radar RF Amplifier: - Testing Complete E-2C AP-145	3	2010	3	2010
SELECTED AVCIP PROJECTS: 09A E-2C APS-145 WRA-29 Radar RF Amplifier: - Qualification E-2C AP-145	1	2011	1	2011
SELECTED AVCIP PROJECTS: 10A EP-3 Digital Autopilot Upgrade: -Contract Award EP-3	1	2010	1	2010
SELECTED AVCIP PROJECTS: 10A EP-3 Digital Autopilot Upgrade: -Preliminary Design Review (PDR)	3	2010	3	2010
SELECTED AVCIP PROJECTS: 10A EP-3 Digital Autopilot Upgrade: -Critical Design Review (CDR)	4	2010	4	2010
SELECTED AVCIP PROJECTS: 10A EP-3 Digital Autopilot Upgrade: -Testing Complete EP-3	1	2011	1	2011
SELECTED AVCIP PROJECTS: 10A EP-3 Digital Autopilot Upgrade: -Qualification EP-3	2	2011	2	2011
SELECTED AVCIP PROJECTS: 10B P-3C MDPS UYQ-76A: -Contract Award P-3C	2	2010	2	2010
SELECTED AVCIP PROJECTS: 10B P-3C MDPS UYQ-76A: -Testing Complete P-3C	4	2010	4	2010
SELECTED AVCIP PROJECTS: 10B P-3C MDPS UYQ-76A: -Qualification P-3C	1	2011	1	2011
SELECTED AVCIP PROJECTS: 10C F/A-18E/F MAGR 2K GPS: -Contract Award F/A-18E/F	3	2010	3	2010
SELECTED AVCIP PROJECTS: 10C F/A-18E/F MAGR 2K GPS: -PDR/CDR F/A-18E/F	4	2010	4	2010
SELECTED AVCIP PROJECTS: 10C F/A-18E/F MAGR 2K GPS: -Test Complete F/A-18E/F	1	2011	1	2011
SELECTED AVCIP PROJECTS: 10C F/A-18E/F MAGR 2K GPS: -Qualification F/A-18E/F	2	2011	2	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 3170: <i>Avionics Component Improvement Program(AVCIP)</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SELECTED AVCIP PROJECTS: 10D E-2C Overhead Cockpit White Light: -Contract Award E-2C	2	2010	2	2010
SELECTED AVCIP PROJECTS: 10D E-2C Overhead Cockpit White Light: -Design Review E-2C	1	2011	1	2011
SELECTED AVCIP PROJECTS: 10D E-2C Overhead Cockpit White Light: -Testing Complete E-2C	3	2011	3	2011
SELECTED AVCIP PROJECTS: 10D E-2C Overhead Cockpit White Light: -Qualification E-2C	4	2011	4	2011
SELECTED AVCIP PROJECTS: 10E E-2C Overhead Cockpit Emergency Escape Hatch Lighting: -Contract Award E-2C Escape Hatch	2	2010	2	2010
SELECTED AVCIP PROJECTS: 10E E-2C Overhead Cockpit Emergency Escape Hatch Lighting: -Design Review E-2C Escape Hatch	4	2010	4	2010
SELECTED AVCIP PROJECTS: 10E E-2C Overhead Cockpit Emergency Escape Hatch Lighting: -Testing Complete E-2C Escape Hatch	2	2011	2	2011
SELECTED AVCIP PROJECTS: 10E E-2C Overhead Cockpit Emergency Escape Hatch Lighting: -Qualification E-2C Escape Hatch	3	2011	3	2011
SELECTED AVCIP PROJECTS: 10F AN/APN-171 SRA DMSMS: -Contract Award AN/APN-171	3	2010	3	2010
SELECTED AVCIP PROJECTS: 10F AN/APN-171 SRA DMSMS: -Delivery AN/APN-171	4	2010	4	2010
SELECTED AVCIP PROJECTS: 10F AN/APN-171 SRA DMSMS: -Certify AN/APN-171	4	2010	4	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0702239N: <i>Avionics Component Improvement Program</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	0.797	-	-	-	-	-	-	-	-	0.000	0.797
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Add. Research targeted toward extending the life of legacy avionics systems. The project will build on previous avionics life extension developments. The extension of existing avionics systems will allow the deferral of upgrades that could save the Department of Defense millions of dollars.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Avionics Life Extension	0.797	-
FY 2010 Accomplishments: Research targeted toward extending the life of legacy avionics systems. The project will build on previous avionics life extension developments. The extension of existing avionics systems will allow the deferral of upgrades that could save the Department of Defense millions of dollars.		
Congressional Adds Subtotals	0.797	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not Required for Congressional Adds

E. Performance Metrics

Not Required for Congressional Adds

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	71.277	46.173	54.031	-	54.031	51.001	51.264	53.577	59.366	Continuing	Continuing
1050: <i>Manufacturing Tech</i>	53.856	46.173	54.031	-	54.031	51.001	51.264	53.577	59.366	Continuing	Continuing
4027: <i>Naval Innovative Science and Engineering</i>	0.391	-	-	-	-	-	-	-	-	0.000	0.391
9999: <i>Congressional Adds</i>	17.030	-	-	-	-	-	-	-	-	0.000	17.030

A. Mission Description and Budget Item Justification

The Manufacturing Technology (ManTech) program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development and transition of leading edge manufacturing technologies. The ManTech program is executed through a Center of Excellence (COE) strategy. A majority of the COEs are consortium based with only a small group of technical and management personnel at the center. ManTech projects are primarily performed by industry participants that bill the COE which, in turn, bills the Navy which causes a non-traditional financial execution profile for the program. The program therefore does not meet traditional execution benchmarks. The ManTech program, by providing seed funding for the development of moderate to high risk process and equipment technology, permits contractors to upgrade their manufacturing capabilities. Ultimately, the program aims to produce high-quality weapon systems with shorter lead times and reduced acquisition costs.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>
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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	74.880	46.173	55.652	-	55.652
Current President's Budget	71.277	46.173	54.031	-	54.031
Total Adjustments	-3.603	-	-1.621	-	-1.621
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.794	-			
• SBIR/STTR Transfer	-2.046	-			
• Program Adjustments	-	-	-1.323	-	-1.323
• Section 219 Reprogramming	0.240	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.298	-	-0.298
• Congressional General Reductions Adjustments	-0.003	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

- Congressional Add: *Laser Optimization Remote Lighting System*
- Congressional Add: *Weps Sys Life Ext Program*
- Congressional Add: *Low Acoustic and Thermal Signature Battlefield Power Source*
- Congressional Add: *Manufacturing S&T for Next-Generation Energetics*
- Congressional Add: *Next Generation Scalable Lean Manufacturing Initia*
- Congressional Add: *Out of Autociave Composite Processing*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	1.992	-
	2.490	-
	3.187	-
	4.979	-
	2.390	-
	1.992	-
Congressional Add Subtotals for Project: 9999	17.030	-
Congressional Add Totals for all Projects	17.030	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1050: <i>Manufacturing Tech</i>	53.856	46.173	54.031	-	54.031	51.001	51.264	53.577	59.366	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The ManTech Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development of manufacturing technologies. Major areas of endeavor both underway and planned include: advanced manufacturing technology for metalworking, joining, electronics and electro-optics, composites, shipbuilding, and above-the-factory-floor business operations technology. The ManTech Program is aimed at assisting acquisition programs in meeting performance and affordability goals by inserting manufacturing process solutions early into the design phase.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: COMPOSITES PROCESSING AND FABRICATION	6.000	6.000	6.000
Articles:	0	0	0
<p>Description: The primary technical goal of the Composites Processing and Fabrication activity is improving weapon systems affordability, enhancing weapon system effectiveness and improving reliability / war-fighter readiness through the increased utilization of composite materials and structures. This is being achieved through the development and maturation of affordable, robust manufacturing and assembly processes that fully exploit the benefits of composite materials. Concentration is on composites processing for the following four platforms: DDG-1000, CVN-21, VCS, and LCS although ManTech will continue to develop composites manufacturing technology for high priority air platforms.</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> - Continued Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop/optimize composite materials fabrication technology for reduced cost VCS construction. - Continued Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. - Continued Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. - Continued Composite Materials and Process Improvement Thrust for Air Platforms. Included continuation of efforts to develop/optimize composite materials fabrication technology for reduced cost Air Platform construction. - Completed DDG-1000 Radomes Affordability. - Completed other composites thrusts (formerly projects) to address improvements/affordability of DDG-1000, CVN-21, VCS, and other acquisition program offices. <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> - Continue Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop / optimize composite materials fabrication technology for reduced cost VCS construction. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<ul style="list-style-type: none"> - Continue Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for Air Platforms. Includes continuation of efforts to develop/optimize composite materials fabrication technology for reduced cost Air Platform construction. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop/optimize composite materials fabrication technology for reduced cost VCS construction. - Continue Composite Materials and Process Improvement Thrust for DDG Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for CVN-21 (CVN-78) Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for Air Platforms. Includes continuation of efforts to develop/optimize composite materials fabrication technology for reduced cost Air Platform construction. - Initiate Composite Materials and Process Improvement Thrust for LCS Shipbuilding Affordability Initiative. 				
<p>Title: CORPORATE INVESTMENTS</p> <p>Articles:</p> <p>Description: The Corporate Investments activity is focused on accelerating defense industrial enterprise progress toward implementation of world-class industrial practices as well as advanced design and information systems that support weapon system development, production, and sustainment. Key emphasis areas include: 1) Benchmarking and accelerating the implementation of world-class industrial practices throughout the contractor base; 2) Demonstrating and validating advanced business practices and information technologies capable of streamlining management functions in all industrial base tiers; and 3) Leveraging information technologies in pursuit of tighter coupling of all defense industrial enterprise elements. Corporate Investment efforts create improvements to cost and cycle time for weapon system development, production, and repair. Additionally, Corporate Investments include the funding of recently identified near-term high priority shipbuilding affordability efforts for the four major platforms - DDG-1000, CVN-21, VCS, and LCS. The funding decrease from FY 2010 to FY 2011 will result in the elimination of several high payoff ship reduction efforts supporting LCS and VIRGINIA Class submarines. Moreover, planned work such as developing pervasive technology for improved supply chain management and model based ship production will be reduced.</p> <p>The reduction of funding from FY10 to FY11 reflects programmatic realignments to other Navy priorities. The increase from FY11 to FY12 reflects funding alignment back to manufacturing priorities.</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> - Continued Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21. 		10.646 0	5.663 0	10.297 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<ul style="list-style-type: none"> - Continued Near-Term High Priority Shipbuilding Affordability Thrust for LCS. - Continued efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/technology improvements for Navy weapon system acquisition programs such as the DDG-1000, CVN 21, LCS, VCS, and others. - Continued Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-1000. - Continued Near-Term High Priority Shipbuilding Affordability Thrust for VCS. - Continued Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability/performance of Navy and defense platforms and weapon systems. - Completed Light Activated Semiconductor Switches. - Completed System-on-Chip Low Cost / Weight Phased Array Antennas. <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> - Continue Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21. - Continue Near-Term High Priority Shipbuilding Affordability Thrust for LCS. - Continue efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/technology improvements for Navy weapon system acquisition programs such as the DDG-1000, CVN 21, LCS, VCS, and others. - Continue Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-1000. - Continue Near-Term High Priority Shipbuilding Affordability Thrust for VCS. - Continue Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability/performance of Navy and defense platforms and weapons systems. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21 (CVN-78). - Continue Near-Term High Priority Shipbuilding Affordability Thrust for LCS. - Continue efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/technology improvements for Navy weapon system acquisition programs such as the DDG, CVN 21 (CVN-78), LCS, VCS, and others. - Continue Near-Term, High Priority Shipbuilding Affordability Thrust for DDG. - Continue Near-Term High Priority Shipbuilding Affordability Thrust for VCS. 			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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- Continue Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability/performance of Navy and defense platforms and weapons systems.			
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Title: ELECTRONICS PROCESSING AND FABRICATION	9.000	6.300	9.734
Articles:	0	0	0

Description: Electronics Processing and Fabrication efforts develop and deploy affordable, robust manufacturing processes and capabilities for electronics critical to defense applications over their full life cycle. Efforts create new and improved manufacturing processes on the shop floor, as well as repair and maintain facilities such as depots and logistics centers, with a strong emphasis on process maturation. Emphasis is on shipbuilding affordability for four major platforms: DDG-1000, CVN-21, VCS, and LCS, with some funding geared towards toward electronics / electro-optics improvements for high priority air platforms. The reduction in FY 2011 reflects an overall budget decrease and relative priority of manufacturing needs due to fewer shipbuilding affordability requirements in electrooptics than in other technical areas for the four shipbuilding platforms ManTech supports.

The reduction of funding from FY10 to FY11 reflects programmatic realignments to other Navy priorities. The increase from FY11 to FY12 reflects funding alignment back to manufacturing priorities.

FY 2010 Accomplishments:

- Continued Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Included continuation of improved affordable electronics/electro-optics efforts.
- Continued Electronics/Electro-Optics-Optics Thrust for LCS Shipbuilding Affordability Initiative.
- Continued Electronics/Electro-Optics-Optics Thrust for Air Platforms.
- and continuation of electronics/electro-optics efforts to improve affordability for Air Platforms.
- Continued Electronics/Electro-Optics-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Included radar/communications efforts to impact DDG 1000 affordability.
- Continued Electronics/Electro-Optics-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Included initiation of electronics/electro-optics efforts to improve affordability for CVN-21.
- Completed advanced electronics and electro-optics efforts/thrusts to address improvements/affordability for DDG-1000, CVN-21, VCS, LCS, F/A-18, EA-18G, and others.
- Completed Multispectral Mid-IR Lasers for Directional Infrared Counter Measures (DIRCM).
- Completed SiGE-Based System-on-Chip for Low-Cost Weight Phased Array Antennas.

FY 2011 Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<ul style="list-style-type: none"> - Continue Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of improved affordable electronics/electro-optics efforts. - Continue Electronics/Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. - Continue Electronics/Electro-Optics Thrust for Air Platforms. Includes continuation of electronics/electro-optics efforts to improve affordability for Air Platforms. - Continue Electronics/Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes radar/communications efforts to impact DDG 1000 affordability. - Continue Electronics/Electro-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes continuation of electronics/electro-optics efforts to improve affordability for CVN-21. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of improved affordable electronics/electro-optics efforts. - Continue Electronics/Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. - Continue Electronics/Electro-Optics Thrust for Air Platforms. Includes continuation of electronics/electro-optics efforts to improve affordability for Air Platforms. - Continue Electronics/Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes radar/communications efforts to impact DDG-1000 affordability. - Continue Electronics/Electro-Optic Thrust for CVN-21 (CVN-78) Shipbuilding Affordability Initiative. Includes continuation of electronics/electro-optics efforts to improve affordability for CVN-21 (CVN-78). 				
<p>Title: METALS PROCESSING AND FABRICATION</p> <p align="right">Articles:</p> <p>Description: The objective of the Metals Processing and Fabrication activity is to develop affordable, robust manufacturing processes and capabilities for metals and special materials critical to defense weapon system applications. Major areas that support this objective include: processing methods, special materials, joining, and inspection and compliance. These efforts directly impact the cost and performance of future aircraft, rotorcraft, land combat vehicles, surface and subsurface naval platforms, space systems, artillery and ammunition, and defense industry manufacturing equipment. Emphasis on shipbuilding affordability for four major platforms: DDG-1000, CVN-21, VCS, and LCS, with some funding geared toward metals processing and fabrication improvements for high priority air platforms.</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> - Continued Schedule Compression/Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continued Outfitting Thrust for VCS Shipbuilding Affordability Initiative. 		18.000 0	18.000 0	18.000 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
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<ul style="list-style-type: none"> - Continued rapid response. - Continued Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Metallic materials and process efforts for DDG-1000 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG 1000 components. - Continued Metals Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. Metallic materials and process efforts for CVN 21 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN 21 components. - Continued Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative. - Continued Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating/cladding, etc.) resulting in reduced cost of fabrication for VCS components. - Continued Metal Materials and Process Improvements Thrust for Other Ship/NAVSEA Platforms. - Continued Metals Materials and Process Improvement Thrust for Air Platforms. - Continued Metal Materials and Process Improvements Thrust for Marine Corps Systems. - Completed teaching factory activities. - Completed Laser Welded Lightweight Panel Structure Fabrication - NMC. - Completed Alloy 625 Formability for Future Carriers. <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> - Continue Schedule Compression/Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative. - Continue rapid response efforts. - Continue Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Metallic materials and process efforts for DDG-1000 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG 1000 components. - Continue Metals Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. Metallic materials and process efforts for CVN 21 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN 21 components. - Continue Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative. - Continue Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating/cladding, etc.) resulting in reduced cost of fabrication for VCS components. - Continue Metal Materials and Process Improvements Thrust for Other Ship/NAVSEA Platforms. 			
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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011
<ul style="list-style-type: none"> - Continue Metals Materials and Process Improvement Thrust for Air Platforms. - Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue Schedule Compression/Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative. - Continue rapid response efforts. - Continue Metals Materials and Process Improvement Thrust for DDG Shipbuilding Affordability Initiative. Metallic materials and process efforts for DDG include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG components. - Continue Metals Materials and Process Improvement Thrust for CVN-21 (CVN-78) Shipbuilding Affordability Initiative. Metallic materials and process efforts for CVN-21 (CVN-78) include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN-21 (CVN-78) components. - Continue Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative. - Continue Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating/cladding, etc.) resulting in reduced cost of fabrication for VCS components. - Continue Metal Materials and Process Improvements Thrust for Other Ship / NAVSEA Platforms. - Continue Metals Materials and Process Improvement Thrust for Air Platforms. - Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems. 			
<p>Title: OTHER (SHIPBUILDING, REPAIR TECH, ENERGETICS, AND TECHNICAL ENGINEERING SUPPORT)</p> <p align="right">Articles:</p> <p>Description: The "Other" activity includes shipbuilding technology, repair technology, energetics, and technical engineering support. Shipbuilding technology primarily addresses the development of manufacturing process improvements for shipyards and is geared towards affordability efforts for four ship platforms: DDG-1000, CVN-21, VIRGINIA Class Submarine (VCS), and Littoral Combat Ship (LCS). Repair technology addresses repair, overhaul, and sustainment functions that emphasize remanufacturing processes and advancing technology. Energetics efforts concentrate on developing energetics solutions to ensure the availability of safe, affordable, and quality energetics products largely in support of Program Executive Office (PEO) Integrated Warfare Systems (IWS).</p> <p>FY 2010 Accomplishments:</p> <ul style="list-style-type: none"> - Continued Shipbuilding Affordability Thrust for VCS. 		10.210 0	10.210 0
		10.000 0	

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
<ul style="list-style-type: none"> - Continued Shipbuilding Affordability Thrust for LCS. - Continued Shipbuilding Affordability Thrust for DDG-1000. - Continued Shipbuilding Thrust for Other Ship/NAVSEA Platforms. - Continued Repair Technology Thrust for repair and sustainment of Navy weapons systems. Included continuation of Repair Technology projects based on high priority depot needs. - Continued Energetics Thrust for PEO IWS and Other Acquisition Programs. Included continuation of energetics efforts to support PEO IWS and other acquisition programs. - Continued to provide technical engineering support for the ManTech Program. <p>FY 2011 Plans:</p> <ul style="list-style-type: none"> - Continue Shipbuilding Affordability Thrust for CVN-21. - Continue Shipbuilding Affordability Thrust for VCS. - Continue Shipbuilding Affordability Thrust for LCS. - Continue Shipbuilding Affordability Thrust for DDG-1000. - Continue Shipbuilding Thrust for Other Ship/NAVSEA Platforms. - Continue Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs. - Continue Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of energetics efforts to support PEO IWS and other acquisition programs. - Continue to provide technical engineering support for the ManTech Program. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Continue Shipbuilding Affordability Thrust for VCS. - Continue Shipbuilding Affordability Thrust for LCS. - Continue Shipbuilding Affordability Thrust for DDG-1000. - Continue Shipbuilding Thrust for Other Ship/NAVSEA Platforms. - Continue Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs. - Continue Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of energetics efforts to support PEO IWS and other acquisition programs. - Continue to provide technical engineering support for the ManTech Program. 			
Accomplishments/Planned Programs Subtotals	53.856	46.173	54.031

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Efforts are focused on shipbuilding affordability reduction for the following the Integrated Systems Investment Strategy platforms: DDG 1000, CVN 21, Littoral Combat Ship (LCS), and the VIRGINIA Class Submarine (VCS) as well as more limited efforts for aircraft / other programs.

E. Performance Metrics

The ManTech program's overall goal is to transition production technology to reduce the cost of Navy weapons systems. Metrics are currently collected on the cost savings per hull and for the class for each of the 4 primary shipbuilding platforms, DDG-1000, CVN-21, LCS and VCS.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mfg Development (B2P)	C/CPFF	American Competitiveness Institute (ACI):Philadelphia, PA (B2P)	4.300	2.000	Oct 2010	2.000	Oct 2011	-		2.000	0.000	8.300	
Mfg Development (CMTC)	C/CPAF	SCRA:Anderson, SC	15.804	5.600	Oct 2010	7.300	Oct 2011	-		7.300	Continuing	Continuing	Continuing
Award Fee (CMTC)	C/CPAF	SCRA:Anderson, SC	0.500	0.400	Oct 2010	0.300	Oct 2011	-		0.300	0.000	1.200	
Mfg Development (CNST)1	C/CPFF	Advanced Technology Institute (ATI):Charleston, SC	4.697	-		-		-		-	0.000	4.697	
Mfg Development (CNST)2	C/CPAF	Advanced Technology Institute (ATI):Charleston, SC	6.003	3.312	Oct 2010	4.497	Oct 2011	-		4.497	0.000	13.812	
Award Fee (CNST)	C/CPAF	Advanced Technology Institute (ATI):Charleston, SC	0.400	0.280	Oct 2010	0.300	Oct 2011	-		0.300	0.000	0.980	
Mfg Development (EMPF)	C/CPAF	American Competitiveness Institute (ACI):Philadelphia, PA	13.639	5.060	Oct 2010	6.727	Oct 2011	-		6.727	0.000	25.426	
Award Fee (EMPF)	C/CPAF	American Competitiveness Institute (ACI):Philadelphia, PA	0.925	0.440	Oct 2010	0.373	Oct 2011	-		0.373	0.000	1.738	
Mfg Development (EMTC)	WR	Naval Surface Warfare Center - Indian Head:Indian Head, MD	4.000	2.000	Nov 2010	2.000	Nov 2011	-		2.000	0.000	8.000	
Mfg Development (EOC)	C/CPAF	Penn State University:State College, PA (EOC)	8.651	0.850	Oct 2010	4.225	Oct 2011	-		4.225	0.000	13.726	
Award Fee (EOC)	C/CPAF	Penn State University:State College, PA (EOC)	0.349	-		0.275	Oct 2011	-		0.275	0.000	0.624	
Mfg Development (iMAST)	C/CPFF		7.699	3.500	Dec 2010	3.575	Dec 2011	-		3.575	0.000	14.774	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Penn State University:State College, PA (iMAST)											
Mfg Development (NJC)	C/CPAF	Edison Welding Institute:Columbus, OH	6.375	2.800	Oct 2010	2.782	Oct 2011	-		2.782	0.000	11.957	
Award Fee (NJC)	C/CPAF	Edison Welding Institute:Columbus, OH	0.375	0.200	Oct 2010	0.218	Oct 2011	-		0.218	0.000	0.793	
Mfg Development (NMC)	C/CPAF	Concurrent Technologies Corp.:Johnstown, PA	22.900	11.400	Oct 2010	11.500	Oct 2011	-		11.500	0.000	45.800	
Award Fee (NMC)	C/CPAF	Concurrent Technologies Corp.:Johnstown, PA	1.100	0.600	Oct 2010	0.600	Oct 2011	-		0.600	0.000	2.300	
Mfg Development	WR	Naval Air Systems Command (NAVAIR):Patuxent River, MD	0.803	0.350	Nov 2010	0.400	Nov 2011	-		0.400	0.000	1.553	
Mfg Development	WR	Naval Research Laboratory (NRL):Washington, DC	0.280	0.120	Nov 2010	0.170	Nov 2011	-		0.170	0.000	0.570	
Mfg Development	WR	Naval Surface Warfare Center - Carderock Division:Carderock, MD	2.791	1.400	Nov 2010	1.488	Nov 2011	-		1.488	0.000	5.679	
Mfg Development	WR	Naval Undersea Warfare Center - Newport:Newport, RI	0.380	-		-		-		-	0.000	0.380	
Mfg Development	WR	SPAWAR:San Diego, CA	0.010	-		-		-		-	0.000	0.010	
Subtotal			101.981	40.312		48.730		-		48.730			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
 BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0708011N: *Industrial Preparedness*

PROJECT

1050: *Manufacturing Tech*

EXHIBIT R4, Schedule Profile																								DATE: May 10								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-7				PROGRAM ELEMENT NUMBER AND NAME PE 0708011N INDUSTRIAL PREPAREDNESS												PROJECT NUMBER AND NAME 1050 MANUFACTURING TECHNOLOGY																
Fiscal Year	2009				2010				2011				2012				2013				2014				2015				2016			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Composites Processing and Fabrication																																
<ul style="list-style-type: none"> - Annual Investment Guidance - Project Identification - Project Evaluation - Prog. Office Commitment - FY Plan Determined - Project Award - Ongoing Projects 																																
Corporate Investments																																
<ul style="list-style-type: none"> - Annual Investment Guidance - Project Identification - Project Evaluation - Prog. Office Commitment - FY Plan Determined - Project Award - Ongoing Projects 																																
Electronics Processing and Fabrication																																
<ul style="list-style-type: none"> - Annual Investment Guidance - Project Identification - Project Evaluation - Prog. Office Commitment - FY Plan Determined - Project Award - Ongoing Projects 																																
Metals Processing and Fabrication																																
<ul style="list-style-type: none"> - Annual Investment Guidance - Project Identification - Project Evaluation - Prog. Office Commitment - FY Plan Determined - Project Award - Ongoing Projects 																																
Other																																
<ul style="list-style-type: none"> - Annual Investment Guidance - Project Identification - Project Evaluation - Prog. Office Commitment - FY Plan Determined - Project Award - Ongoing Projects 																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1050				
Composites Processing and Fabrication	1	2010	4	2016
-- Annual Investment Guidance (CP&F)	4	2010	4	2015
-- Project Identification (CP&F)	4	2010	1	2016
-- Project Evaluation (CP&F)	1	2010	2	2016
-- Prog Office Commitment (CP&F)	1	2010	2	2016
-- FY Plan Determined (CP&F)	2	2010	3	2016
-- Project Award (CP&F)	1	2010	2	2016
-- Ongoing Projects (CP&F)	1	2010	4	2016
Corporate Investments	1	2010	4	2016
-- Annual Investment Guidance (CI)	4	2010	4	2015
-- Project Identification (CI)	4	2010	1	2016
-- Project Evaluation (CI)	1	2010	2	2016
-- Prog Office Commitment (CI)	1	2010	2	2016
-- FY Plan Determined (CI)	2	2010	3	2016
-- Project Award (CI)	1	2010	2	2016
-- Ongoing Projects (CI)	1	2010	4	2016
Electronics Processing and Fabrication	1	2010	4	2016
-- Annual Investment Guidance (EP&F)	4	2010	4	2015
-- Project Identification (EP&F)	4	2010	1	2016
-- Project Evaluation (EP&F)	1	2010	2	2016
-- Prog Office Commitment (EP&F)	1	2010	2	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 1050: <i>Manufacturing Tech</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
-- FY Plan Determined (EP&F)	2	2010	3	2016
-- Project Award (EP&F)	1	2010	2	2016
-- Ongoing Projects (EP&F)	1	2010	4	2016
Metals Processing and Fabrication	1	2010	4	2016
-- Annual Investment Guidance (MP&F)	4	2010	4	2015
-- Project Identification (MP&F)	4	2010	1	2016
-- Project Evaluation (MP&F)	1	2010	2	2016
-- Prog Office Commitment (MP&F)	1	2010	2	2016
-- FY Plan Determined (MP&F)	2	2010	3	2016
-- Project Award (MP&F)	1	2010	2	2016
-- Ongoing Projects (MP&F)	1	2010	4	2016
Other	1	2010	4	2016
-- Annual Investment Guidance (Other)	4	2010	4	2015
-- Project Identification (Other)	4	2010	1	2016
-- Project Evaluation (Other)	1	2010	2	2016
-- Prog Office Commitment (Other)	1	2010	2	2016
-- FY Plan Determined (Other)	2	2010	3	2016
-- Project Award (Other)	1	2010	2	2016
-- Ongoing Projects (Other)	1	2010	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 4027: <i>Naval Innovative Science and Engineering</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4027: <i>Naval Innovative Science and Engineering</i>	0.391	-	-	-	-	-	-	-	-	0.000	0.391
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funding supports research and development efforts as directed under Section 219 of the fiscal year 2009 Duncan Hunter National Defense Authorization Act.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Naval Innovative Science and Engineering	0.391	-	-
Articles:	0		
Description: Funding supports research and development efforts as directed under Section 219 of the fiscal year 2009 Duncan Hunter National Defense Authorization Act.			
FY 2010 Accomplishments: Section 219 (Naval Innovative Science and Engineering) included in the FY 2009 Duncan Hunter National Defense Authorization Act, established mechanisms whereby the director of a naval laboratory may utilize up to three percent of all funds available to the laboratory to sponsor individual projects for:			
<ol style="list-style-type: none"> 1. Innovative basic and applied research that is conducted at the laboratory and supports military missions; 2. Development programs that support the transition of technologies developed by the defense laboratory into operational use; 3. Development activities that improve the capacity of the defense laboratory to recruit and retain personnel with needed scientific and engineering expertise; and 4. The revitalization and recapitalization of the laboratories. 			
Accomplishments/Planned Programs Subtotals	0.391	-	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 4027: <i>Naval Innovative Science and Engineering</i>

E. Performance Metrics

The overall metrics of Section 219 is to increase retention and recruitment; number of advanced degrees, patent awards, and technical papers; successful technology transition to the warfighter; and laboratory ability to conduct innovative research.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	17.030	-	-	-	-	-	-	-	-	0.000	17.030
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional interest items not included in other projects.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
<p>Congressional Add: Laser Optimization Remote Lighting System</p> <p>FY 2010 Accomplishments: This effort investigated laser light sources for remote source lighting currently used aboard the LPD 17 and the DDG1000 classes. The research concentrated on optimizing three areas: (1) the light source; (2) the fiber cable; and (3) the luminaire to meet the broadest range of high interest applications.</p>	1.992	-
<p>Congressional Add: Weps Sys Life Ext Program</p> <p>FY 2010 Accomplishments: This effort determined the requirements and feasibility of using emerging materials processing technologies to repair Navy system components and structures to reduce life-cycle maintenance costs and extend the structural life of legacy and future weapons systems. Friction stir welding processes were identified to reduce life cycle costs and the linkage with the NAVICP was established to pilot the implementation for high priority parts.</p>	2.490	-
<p>Congressional Add: Low Acoustic and Thermal Signature Battlefield Power Source</p> <p>FY 2010 Accomplishments: This effort researched, developed, and constructed a durable, low acoustic and low thermal signature battlefield power source utilizing advanced fuel cell technologies which support U.S. Navy operational requirements. Best practices that enable the manufacturing and development of durable fuel cells with low acoustic and thermal signatures were identified and documented, additionally, roadmaps were developed related to the manufacturing and fabrication of fuel cells to ensure that future research will meet high priority Navy needs as it relates to battlefield power sources.</p>	3.187	-
<p>Congressional Add: Manufacturing S&T for Next-Generation Energetics</p> <p>FY 2010 Accomplishments: This effort designed and developed safe and cost-effective manufacturing processes for next generation energetics and their associated systems. Investment in the development of new manufacturing processes is required for the military to safely produce the new, superior explosives and propellants that it will use in future conflicts.</p>	4.979	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708011N: <i>Industrial Preparedness</i>	PROJECT 9999: <i>Congressional Adds</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2010	FY 2011
<ul style="list-style-type: none"> - Developed improved manufacturing techniques to more affordably and repeatably produce the energetic system of the Microelectronic-Mechanical system (MEMS) fuze. - Developed continuous low-cost production process for Butyl-NENA, Methyl-NENA, and Ethyl-NENA to support propellant production programs. - Developed a manufacturing capability using Twin Screw Mixing/Extruder technology to produce PBXN-18 explosive for loading into the M72A9 & M72E19 warheads for Marine ground forces in shoulder launch applications. 		
<p>Congressional Add: Next Generation Scalable Lean Manufacturing Initia</p> <p>FY 2010 Accomplishments: This effort addressed the manufacturing issues associated with large scale automated production of Navy products under 60 meters long, focusing on modular molding, rapid reconfigurable tooling, and time reduction/process improvement through automation. The project also developed seal technologies that will allow for modular molding, a necessary step to process large structures in an automated cell, and rapid prototyping techniques were utilized to reconfigure a tool while maintaining geometric tolerances through a heating cycle.</p>	2.390	-
<p>Congressional Add: Out of Autoclave Composite Processing</p> <p>FY 2010 Accomplishments: This effort focused on developing processes using fiber placement and other automated techniques on next-generation out-of-autoclave composite material prepreg systems for current and future aircraft platforms. The result will be lower cost aircraft components. Completed the final interactions of the 8-D Taguchi design of experiments matrix to identify the interaction of process variables on fiber placed Out-of-Autoclave (OOA) laminates and initiated fabrication and testing of OOA panels.</p>	1.992	-
Congressional Adds Subtotals	17.030	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional add

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708730N: <i>Maritime Tech (MARITECH)</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	4.083	-	5.000	-	5.000	5.000	5.000	5.000	5.000	Continuing	Continuing
2466: <i>NSRP ASE</i>	-	-	5.000	-	5.000	5.000	5.000	5.000	5.000	Continuing	Continuing
9999: <i>Congressional Adds</i>	4.083	-	-	-	-	-	-	-	-	0.000	4.083

A. Mission Description and Budget Item Justification

The National Shipbuilding Research Program (NSRP) is an industry and enterprise wide research collaboration that seeks to reduce the Navy's shipbuilding and repair cost. The resulting technologies implemented in NSRP-ASE member shipyards, benefit both the shipyard and the US Navy.

Project 9999 - Congressional Adds: National Shipbuilding Research Program Advanced Shipbuilding Enterprise and Passive RFID Development.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	4.083	-	-	-	-
Current President's Budget	4.083	-	5.000	-	5.000
Total Adjustments	-	-	5.000	-	5.000
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	5.000	-	5.000

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *National Shipbuilding Research Program Advanced Shipbuilding Enterprise*

Congressional Add: *Passive RFID Development*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	3.187	-
	0.896	-
	4.083	-
	4.083	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0708730N: *Maritime Tech (MARITECH)*

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708730N: <i>Maritime Tech (MARITECH)</i>	PROJECT 2466: <i>NSRP ASE</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2466: <i>NSRP ASE</i>	-	-	5.000	-	5.000	5.000	5.000	5.000	5.000	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

New project in FY 2012

A. Mission Description and Budget Item Justification

NSRP ASE is a collaboration of U.S. shipyards working with the Navy customer to reduce the cost of building and repairing naval ships and improving shipbuilding industry productivity through advanced technology and processes. NSRP ASE is an innovative and proven approach to public/private cooperation to manage cost-shared R&D based on a national consensus Strategic Investment Plan. The Plan targets potential industry-wide technology and process solutions which are vetted by industry experts and builds upon the progress made over the previous years. The collaboration's organizational structure promotes teaming of industry, government and academia to achieve the continuous product and process improvements necessary for improved Navy ship affordability. Solutions include both leverage of best commercial practices and creation of industry-wide initiatives with aggressive technology transfer to, and buy-in by, multiple U.S. shipyards. Navy PEOs (Ships, Subs and Carriers) and NAVSEA are directly involved in NSRP. The Plan calls for matching government and industry investments over several years

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012
Title: Technology Development Projects	-	-	5.000
Articles:			0
FY 2012 Plans:			
(1) Complete technology development projects in the four major initiative areas (Ship Design Technologies, Ship Production Technologies, Business Process and Information Technologies, and Regulatory Compliance and Technology Transfer/Workforce Development) that will be competitively selected by industry subject matter experts and Navy stakeholders during GFY11, targeting the following priorities in Naval shipbuilding and repair: (1) Improving Quality; (2) Reduction of Total Ownership Costs; and, (3) Increasing Energy Efficiency. It is anticipated that projects selected will be in the following areas:			
- Promotion of Modular Construction			
- Reduction of Re-work			
- Improving Production Engineering			
- Improving Specifications and Standards			
- Improving Manufacturing Processes			
- Improving Production Planning			
- Data Exchange			
- Improving Safety & Health / Reducing Environmental Impacts			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708730N: <i>Maritime Tech (MARITECH)</i>	PROJECT 2466: <i>NSRP ASE</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<ul style="list-style-type: none"> - Education and Training - Total Ownership Cost (2) Continued technology transfer among the Navy, shipbuilding industry, academia, equipment and material suppliers and the R&D community				
Accomplishments/Planned Programs Subtotals		-	-	5.000
C. Other Program Funding Summary (\$ in Millions)				
N/A				
D. Acquisition Strategy				
R&D projects have been solicited and awarded by an industry collaboration represented by the Executive Control Board (ECB) of the National Shipbuilding Research Program (NSRP). The Navy has entered into an agreement with the industry collaboration using "other transaction" authority pursuant to 10 U.S.C. 2371.				
E. Performance Metrics				
Quarterly reports and reviews				

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708730N: <i>Maritime Tech (MARITECH)</i>	PROJECT 2466: <i>NSRP ASE</i>
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FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Proj 2466	
Ship Collaborative Framework Technologies	

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708730N: <i>Maritime Tech (MARITECH)</i>	PROJECT 2466: <i>NSRP ASE</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 2466</i>				
Ship Collaborative Framework Technologies	1	2012	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708730N: <i>Maritime Tech (MARITECH)</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	4.083	-	-	-	-	-	-	-	-	0.000	4.083
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The National Shipbuilding Research Program (NSRP) is an industry and enterprise wide research collaboration that seeks to reduce the cost of NAVSEA and affiliated PEO shipbuilding and repair. The resulting technologies implemented in NSRP-ASE member shipyards, benefiting both the shipyard and the US Navy.

Project 9999 - Congressional Adds: National Shipbuilding Research Program Advanced Shipbuilding Enterprise and Passive RFID Development.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: National Shipbuilding Research Program Advanced Shipbuilding Enterprise	3.187	-
FY 2010 Accomplishments: To manage and focus national shipbuilding and repair research and development funding on technologies that will reduce the cost of ships to the US Navy by leveraging best commercial practices and improving the efficiency of the industry. VT Halter Marine in Pascagoula, MS is one of the industry performers.		
Congressional Add: Passive RFID Development	0.896	-
FY 2010 Accomplishments: The Department of Defense and the U.S. Navy will develop a system to track their vast inventories of parts and supplies. This implementation of passive RFID technology will greatly improve visibility of parts as they flow through the DoD supply distribution system to our forward deployed forces afloat. The U.S. Navy believes this effort, which will bring numerous high tech jobs to Northeast Ohio, will reduce logistics, operating and inventory costs, reduce manning needs on Navy ships, and increase military readiness. Industry performer is Main Sail, LLC in Cleveland, OH.		
Congressional Adds Subtotals	4.083	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708730N: <i>Maritime Tech (MARITECH)</i>	PROJECT 9999: <i>Congressional Adds</i>

E. Performance Metrics

Quarterly Program Reviews

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