

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002																																				
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604239F F-22 EMD																																								
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																																			
Total Program Element (PE) Cost	1,411,606	881,556	627,266	250,000	0	0	0	0	24,801,255																																			
4069 Advanced Tactical Fighter FSD	1,001,023	732,686	627,266	250,000	0	0	0	0	23,220,675																																			
4874 PRTVII Aircraft Acquisition	410,583	148,870	0	0	0	0	0	0	1,580,580																																			
Quantity of RDT&E Articles	3	7	2	0	0	0	0	0	0																																			
<p>(U) <u>A. Mission Description</u> The F-22 is designed to penetrate enemy airspace and achieve a first look, first kill capability against multiple targets. The F-22 is characterized by a low observable, highly maneuverable airframe, advanced integrated avionics, and aerodynamic performance that allows supersonic cruise without the use of afterburner. The F-22 is currently in the Engineering and Manufacturing Development (EMD) phase of acquisition. The Defense Acquisition Board (DAB) approved Low Rate Initial Production (LRIP) Aug 01.</p> <p>(U) <u>B. Budget Activity Justification</u> This program is in Budget Activity 5, Engineering and Manufacturing Development, because the F-22 Program is developing the next-generation air superiority fighter for the USAF to counter emerging worldwide threats.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td>1,398,835</td> <td>865,464</td> <td>320,525</td> <td>24,215,651</td> </tr> <tr> <td>(U) Appropriated Value</td> <td>1,411,786</td> <td>881,556</td> <td></td> <td>29,043</td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td>-9,882</td> <td></td> <td></td> <td>-9,882</td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td>8,949</td> <td></td> <td></td> <td>8,949</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	1,398,835	865,464	320,525	24,215,651	(U) Appropriated Value	1,411,786	881,556		29,043	(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-9,882			-9,882	b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram	8,949			8,949
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BUDGET ACTIVITY		PE NUMBER AND TITLE		
05 - Engineering and Manufacturing Development		0604239F F-22 EMD		
(U)	<u>C. Program Change Summary (\$ in Thousands) Continued</u>			
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
				<u>Total Cost</u>
	d. Below Threshold Reprogram	3,819		3,819
	e. Rescissions	-3,066		-3,066
(U)	Adjustments to Budget Years Since FY 2002 PBR			306,741
(U)	Current Budget Submit/FY 2003 PBR	1,411,606	881,556	627,266
(U)	<u>Significant Program Changes:</u>			
	FY01: \$0.18M adjustment reflects BTR for classified requirement.			
	FY02: \$16.1M adjustment reflects congressional realignment (moves funds from PE 27138F to PE 64239F)			
	FY03: \$307M adjustment reflects a 1.5% increase for test extension.			
	FY04: \$250M adjustment reflects increase for test extension.			
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604239F F-22 EMD				PROJECT 4069	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4069 Advanced Tactical Fighter FSD	1,001,023	732,686	627,266	250,000	0	0	0	0	23,220,675
Unit cost of RDT&E articles not separately priced (NSP). * Total Cost includes \$3,779,811,000 of Demonstration and Validation funding prior to FY 1992 funded in PE 0603230F. ** FY02 adjustment (\$16.1M) reflects congressional realignment (moves funds from PE 27138F to PE 64239F) *** FY03 adjustment (\$307M) and FY04 (\$250M) funding are for test program extension.									
(U) <u>A. Mission Description</u> The F-22 is designed to penetrate enemy airspace and achieve a first look, first kill capability against multiple targets. The F-22 is characterized by a low observable, highly maneuverable airframe, advanced integrated avionics, and aerodynamic performance that allows supersonic cruise without the use of afterburner. The F-22 is currently in the Engineering and Manufacturing Development (EMD) phase of acquisition. The Defense Aquisition Board (DAB) approved Low Rate Initial Production (LRIP) Aug 01. The EMD phase effort includes delivery of nine flight test vehicles and two ground test vehicles (static and fatigue); delivery of 25 flight qualified engines; integration and test of the EMD avionics suite including air-to-surface provision; development and test of the F-22 weapons system support and training system; and updating the YF-22 Avionics Flying Laboratory with EMD assets and software to become an avionics integration Flying Test Bed (FTB). The following are representative activities of efforts being accomplished in the given fiscal year.									
(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$531,347 Air Vehicle - Continued full-scale airframe static testing. (NSP) - Initiated 1st full-scale airframe lifetime fatigue testing. (NSP) - Completed assembly of EMD aircraft #4004-4006. (NSP) - Continued assembly of EMD aircraft #4007-4009. (NSP) - Completed flight test readiness review of EMD aircraft #4004. (NSP) - Completed final production readiness review. (NSP)									
Project 4069			Page 3 of 15 Pages				Exhibit R-2A (PE 0604239F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604239F F-22 EMD	4069
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2001 (\$ in Thousands) Continued</u></p> <p>(U) \$280,576 Avionics</p> <ul style="list-style-type: none"> - Continued flight test and flight test support. (NSP) - Initiated structural certification analysis activities. (NSP) - Completed Avionics Integration Lab (AIL) Block 3.0 integration. (NSP) - Completed Block 3.0 Flight Test Bed (FTB) testing. (NSP) - First flight of the first avionics test aircraft. (NSP) - Initiated avionics software Block 3.0 flight testing. (NSP) - Initiated AIL Block 3.1.0 integration. (NSP) - Initiated Block 3.1.0 FTB testing. - Continued Diminishing Manufacturing Sources (DMS) redesign, requalification and retesting activities. (NSP) - Continued incorporating avionics software/hardware into the FTB. (NSP) <p>(U) \$53,600 Engine</p> <ul style="list-style-type: none"> - Completed delivery and support of 25 flight test engines. (NSP) - Continued production engine configuration development testing. (NSP) - Continued verification of engine support system products. (NSP) - Completed building additional flight test engines. (NSP) - Continued to test flight test engines. (NSP) - Completed Initial Service Release (ISR) milestone test activities. (NSP) - Initiated Verification Requirements Complete (VRC) activities. (NSP) <p>(U) \$135,500 Other Government Cost</p> <ul style="list-style-type: none"> - Continued flight test and flight test support at Edwards AFB. - Continued aperture measurements at Rome Labs. - Continued engine testing at Arnold Engineering Development Center (AEDC). - Completed avionics ground testing at various government facilities. - Mission support of the SPO; travel, computer costs, misc contracts, etc. - Procurement of required Government Furnished Equipment (GFE). - Continued live fire testing at Air Force Research Labs. 		
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		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604239F F-22 EMD	4069
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2001 (\$ in Thousands) Continued</u></p> <p>(U) \$1,001,023 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$435,520 Air Vehicle</p> <ul style="list-style-type: none"> - Complete full-scale airframe static testing. (NSP) - Complete 1st full-scale airframe lifetime fatigue test. (NSP) - Initiate 2nd full-scale airframe lifetime fatigue test. (NSP) - Complete assembly of EMD aircraft #4007-4009. (NSP) - Continue flight test and flight test support. (NSP) - Continue structural certification analysis activities. (NSP) <p>(U) \$132,466 Avionics</p> <ul style="list-style-type: none"> - Complete avionics software Block 3.0 flight testing. (NSP) - Complete AIL Block 3.1.0 integration. (NSP) - Complete Block 3.1.0 FTB testing. (NSP) - Initiate and complete avionics software Block 3.1.0 flight testing. (NSP) - Initiate and complete AIL Block 3.1.1 integration. (NSP) - Initiate and complete Block 3.1.1 FTB testing. (NSP) - Initiate AIL Block 3.1.2 integration. (NSP) - Initiate Block 3.1.2 FTB testing. (NSP) - Initiate avionics software Block 3.1.2 flight testing. (NSP) - Complete incorporating avionics software/hardware into the FTB. (NSP) - Continue DMS redesign, requalification and retesting activities. (NSP) - Initiate revised Block 4.0 implementation. (NSP) <p>(U) \$18,300 Engine</p> <ul style="list-style-type: none"> - Continue verification of engine support system products. (NSP) - Continue to test flight test engines. (NSP) - Continue and complete Verification Requirements Complete (VRC) activities. (NSP) 		
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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604239F F-22 EMD	4069
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$146,400 - Complete production engine configuration development testing. (NSP) - Complete Initial Service Release Milestone activities. Other Government Cost</p> <p>(U) \$146,400 - Continue flight test and flight test support at Edwards AFB. - Continue aperture measurements at Rome Labs. - Continue engine testing at AEDC. - Continue live fire testing at Air Force Research Labs. - Mission support of the SPO; travel, computer costs, misc contracts, etc.</p> <p>(U) \$732,686 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$273,866 Air Vehicle - Complete 2nd full-scale airframe lifetime fatigue test. (NSP) - Continue flight test and flight test support. (NSP) - Continue structural certification analysis activities. (NSP)</p> <p>(U) \$106,300 Avionics - Complete avionics software Block 3.1.2 flight testing. (NSP) - Complete AIL Block 3.1.2 integration. (NSP) - Initiate AIL Block 3.1.3 integration. (NSP) - Initiate avionics software Block 3.1.3 flight testing. (NSP) - Continue revised Block 4.0 implementation. (NSP)</p> <p>(U) \$22,600 Engine - Continue verification of engine support system products. (NSP) - Continue to support and test flight test engines. (NSP)</p> <p>(U) \$224,500 Other Government Cost - Continue flight test and flight test support at Edwards AFB. - Continue aperture measurements at Rome Labs.</p>		
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604239F F-22 EMD				PROJECT 4069	
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2003 (\$ in Thousands) Continued</u>									
<ul style="list-style-type: none"> - Continue engine testing at AEDC. - Continue live fire testing at Air Force Research Lab. - Mission support of the SPO; travel, computer costs, misc contracts, etc. 									
(U)	\$627,266	Total							
(U) <u>B. Project Change Summary</u>									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	PRTV II (6)	410,583	148,870						1,580,580
(U)	(U) F-22 Squadrons RDT&E (PE 0207138F)		181,239	227,296	205,728	261,871	464,291		1,340,425
(U)	(U) F-22 Squadrons Procurement (PE 0207138F)		16,098	41,287	30,791	20,200	52,006		160,382
(U)	(U) Military Construction (PE 0604239F)	0	0	0	0	0	0	0	39,700
(U)	(U) Military Construction (PE 0207219F)*	25,300	61,253	42,790	21,700	49,800	47,110	41,180	160,014
(U)	(U) Aircraft Procurement (PE 0207219F) Advanced Tactical Fighter, P-1 Line Item #003**	2,536,494	3,037,312	4,633,883	4,591,650	4,718,979	4,704,479	5,735,641	11,775,692
(U)	(U) Munitions Procurement (PE 0207219F)	0	4,322	6,396	9,480	9,433	10,922	10,771	36,642
PE 0207138F includes manpower authorizations, peculiar and common support equipment, necessary facilities and the associated costs specifically identified and measurable to the following: Operation, maintenance, and logistical support of the F-22 fighter * NOTE: FY04 and outyears not listed in ABIDES. Estimate reflected in DAES/SAR. ** NOTE: Includes BP 10, 11, 16, 19 and Advance Buy.									
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<p>(U) <u>D. Acquisition Strategy</u> The EMD contract is Cost Plus Award Fee with Lockheed Martin Aeronautical Systems (LMAS) to produce the F-22 air vehicle and Pratt & Whitney (P&W) to produce the F119 engines. The engines are provided to LMAS as GFE.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="3" style="text-align: center;"><u>FY 2001</u></th> <th colspan="3" style="text-align: center;"><u>FY 2002</u></th> <th colspan="3" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) (U) Aircraft Delivered (EMD Test Article)</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) (U) Aircraft Delivered (EMD Test Article)</td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) - LRIP DAB, 4QFY01</td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) - Final PRR</td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) - First Avionics Flight</td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) - Dedicated IOT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> </tbody> </table> <p>Start of DIOT&E testing has slipped from Aug 02 to Apr 03 (obj)/Oct 03 (threshold).</p> <p>EMD = Engineering and Manufacturing Development, DAB = Defense Acquisition Board LRIP = Low Rate Initial Production, LL = Long Lead, MS = Milestone, DT&E = Developmental Test & Evaluation, IOT&E = Initial Operational Test & Evaluation</p> <p>NOTE: Schedule is according to current A/C build schedule.</p> <p>* - Completed X - Planned Event</p>									<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) (U) Aircraft Delivered (EMD Test Article)	*	*				*	X						(U) (U) Aircraft Delivered (EMD Test Article)		*				X							(U) Program Milestones													(U) - LRIP DAB, 4QFY01				*									(U) Engineering Milestones													(U) - Final PRR	*												(U) - First Avionics Flight	*												(U) T&E Milestones													(U) - Dedicated IOT&E												X
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002						
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT					
05 - Engineering and Manufacturing Development				0604239F F-22 EMD				4069					
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>													
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>					
(U)	Air Vehicle/Avionics					811,923	567,986	380,166					
(U)	Engine					53,600	18,300	22,600					
(U)	Government Cost												
(U)	- Government Test					116,500	132,200	211,200					
(U)	- Mission Support					11,500	11,500	11,500					
(U)	- GFE					7,500	2,700	1,800					
(U)	Total					1,001,023	732,686	627,266					
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>													
(U) <u>Performing Organizations:</u>													
	<u>Contractor or</u>		<u>Contract</u>										
	<u>Government</u>		<u>Method/Type</u>										
	<u>Performing</u>		<u>or Funding</u>		<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
	<u>Activity</u>		<u>Vehicle</u>		<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>			
					<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>			
									<u>FY 2003</u>	<u>Budget to</u>			
									<u>Complete</u>	<u>Total</u>			
										<u>Program</u>			
	<u>Product Development Organizations</u>												
	Lockheed (Air Veh)		C/CPAF		Aug 91	15,753,259	15,753,259	13,841,184	811,923	567,986	380,166	152,000	15,753,259
	Pratt & Whitney		C/CPFF		Aug 91	2,435,179	2,435,179	2,331,679	53,600	18,300	22,600	9,000	2,435,179
	<u>Support and Management Organizations</u>												
	Support Contracts		Various		Various	N/A	N/A	14,303	1,600	1,500	1,500	0	18,903
	In House Support		Various		Various	N/A	N/A	104,098	9,900	10,000	10,000	0	133,998
	<u>Test and Evaluation Organizations</u>												
	AEDC		PO			N/A	N/A	142,900	12,500	6,000	6,000	6,000	173,400
	AFFTC		PO			N/A	N/A	249,400	99,600	109,600	128,400	81,000	668,000
	All Other Tests		Various		Various	N/A	N/A	97,825	4,400	16,600	76,800	2,000	197,625

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604239F F-22 EMD			PROJECT 4069		
(U) Government Furnished Property:									
	<u>Contract</u>	<u>Award or</u>							
<u>Item</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
GFE	Various	Various	Various	48,500	7,500	2,700	1,800	0	60,500
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
Not Applicable									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				16,221,363	873,023	588,986	404,566	161,000	18,248,938
Subtotal Support and Management				118,401	11,500	11,500	11,500	0	152,901
Subtotal Test and Evaluation				490,125	116,500	132,200	211,200	89,000	1,039,025
Total Project				16,829,889	1,001,023	732,686	627,266	250,000	19,440,864
NOTE: Total program cost for Engineering and Manufacturing Development only. Does not include \$3,779,811,000 of Demonstration and Validation funding prior to FY92.									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604239F F-22 EMD				PROJECT 4874	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4874 PRTVII Aircraft Acquisition	410,583	148,870	0	0	0	0	0	0	1,580,580
<p>(U) <u>A. Mission Description</u> Complete test aircraft to support continued F-22 development and production. The PRTV II (6) Full Contract Award (Dec 99) criteria, approved by OUSD (A&T) on 23 Dec 98, required the program to demonstrate maturity prior to a contract award.</p> <p>Following successful completion of all CY99 DAE criteria, the Air Force awarded contracts for PRTV II (6) and Lot 1 Advanced Buy aircraft on 30 Dec 99.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$318,418 Air Vehicle (U) \$90,100 Engine (U) \$2,065 Other Government Cost (U) \$410,583 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$148,568 Air Vehicle (U) \$302 Engine (U) \$0 Other Government Cost (U) \$148,870 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>B. Project Change Summary</u> N/A</p>									
Project 4874			Page 11 of 15 Pages				Exhibit R-2A (PE 0604239F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604239F F-22 EMD				PROJECT 4874	
(U) C. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E	1,001,023	732,686	627,266	250,000					23,220,673
(U) F-22 Squadrons (PE 0207138F)			181,239	227,296	205,728	261,871	464,291		1,340,425
(U) F-22 Squadrons Procurement (PE 0207138F)			16,098	41,287	30,791	20,200	52,006		160,382
(U) Military Construction (PE 0604239F)	0	0	0	0	0	0	0	0	39,700
(U) Military Construction (PE 0207219F)*	25,300	61,253	42,790	21,700	49,800	47,110	41,180	160,014	449,147
(U) Aircraft Procurement (PE 0207219F) Advanced Tactical Fighter, P-1 Line Item #003**	2,536,494	3,037,312	4,633,883	4,591,650	4,718,979	4,704,479	5,735,641	11,775,692	42,895,959
(U) Munitions Procurement (PE 0207219F)	0	4,322	6,396	9,480	9,433	10,922	10,771	36,642	89,840
(U) Other APPN PE 0207138F includes manpower authorizations, peculiar and common support equipment, necessary facilities and the associated costs specifically identified and measurable to the following: Operation, maintenance, and logistical support of the F-22 fighter.									
*NOTE: FY04 and outyears not listed in ABIDES. Estimate reflected in DAES/SAR.									
**NOTE: Includes BP10, 11, 16, 19 and Advance Buy.									
(U) D. Acquisition Strategy The PRTV II contract is Firm Fixed Price with Lockheed Martin Aeronautical Systems (LMAS) to produce the F-22 air vehicle and Pratt & Whitney (P&W) to produce the F119 engines. The engines are provided to LMAS as GFE.									
(U) E. Schedule Profile									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>						
Project 4874									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002					
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
05 - Engineering and Manufacturing Development					0604239F F-22 EMD					4874			
(U) <u>E. Schedule Profile Continued</u>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	Aircraft Delivered (PRTV II Test Article)							X	X	X			
(U)	Aircraft Delivered (PRTV II Test Article)								X	X			
(U)	Aircraft Delivered (PRTV II Test Article)								X				
	NOTE: Schedule is according to current A/C build schedule.												
	* - Completed												
	X - Planned												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604239F F-22 EMD			PROJECT 4874			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			
(U)	Air Vehicle					318,418	148,568	0			
(U)	Engine					90,100	302	0			
(U)	Other Government Cost					2,065	0	0			
(U)	Total					410,583	148,870	0			
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Lockheed (Air Veh)	FFP	Dec 99	1,393,956	1,393,956	926,970	318,418	148,568	0	0	1,393,956
	Pratt & Whitney	FFP	Dec 99	180,402	180,402	90,000	90,100	302	0	0	180,402
<u>Support and Management Organizations</u>											
	N/A	N/A	N/A	N/A	N/A						
<u>Test and Evaluation Organizations</u>											
	N/A	N/A	N/A	N/A	N/A						
(U) <u>Government Furnished Property:</u>											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
	GFE	Various	Various	Various		4,157	2,065	0	0	0	6,222
<u>Support and Management Property</u>											
	Not Applicable	N/A	N/A	N/A							
Project 4874					Page 14 of 15 Pages			Exhibit R-3 (PE 0604239F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT
05 - Engineering and Manufacturing Development				0604239F F-22 EMD			4874
(U) <u>Government Furnished Property Continued:</u>							
<u>Test and Evaluation Property</u>							
Not Applicable	N/A	N/A	N/A				
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
				<u>Budget to</u>			<u>Total</u>
					<u>Complete</u>		<u>Program</u>
<u>Subtotals</u>							
Subtotal Product Development				1,021,127	410,583	148,870	0
Subtotal Support and Management							0
Subtotal Test and Evaluation							
Total Project				1,021,127	410,583	148,870	0
							0
							1,580,580
							1,580,580

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02/13/2002 15:55 - FY 2003 PBR (HQ USAF) Draft

Exhibit P-5, Weapon System Cost Analysis	Date: February 2002
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Appropriation (Treasury) Code/CC/BA/BSA/Item Control Number Aircraft Procurement, Air Force, Budget Activity 01, Combat Aircraft, Item No.	P-1 Line Item Nomenclature F-22 RDT&E Procurement
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Manufacturer's Name/Plant City/State Location	Subline Item
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Weapon System Cost Elements	Ident Code	Total Cost In Millions of Dollars								
		FY 2001			FY 2002			FY 2003		
		Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost
Airframe Flyaway (TPC & PSAS)	A			318.418			148.568			
Installed Engines	A			90.100			0.302			
Airframe Term Liability	A									
Engine Term Liability	A									
Avionics	A									
Armament	A									
Software	A									
Other Government Furnished Equipment (GFE)	A									
Engineering Change Orders (ECO)	A									
Nonrecurring Costs	A									
Other Costs	A									
FLYAWAY COST SUBTOTAL	A			408.518			148.870			
Airframe Peculiar Ground Support Equipment (PGSE)	A									
Airframe Support	A									
Engine Support	A									
OGC	A			2.065						
Engine PGSE	A									
Peculiar Training Equipment	A									
Publications/Technical Data	A									
ECOs	A									
Other	A									
SUPPORT COST SUBTOTAL	A			2.065						
TOTAL PROGRAM				410.583			148.870			

Comments

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604240F B-2 Advanced Technology Bomber				PROJECT 3843	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3843 B-2 Advanced Technology Bomber	126,053	216,962	225,327	201,132	299,917	437,024	161,131	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>New start effort: In FY03 project 3843, B-2 Advanced Technology Bomber includes new start efforts.</p> <p>In FY03, the B-2 anticipates receiving \$50 M from the Cost of War Transfer Account. These funds are not included in the FY03 Air Force baseline. Funding will be used to move the APQ-181 radar spectrum band where it can receive a primary user designation and permanent frequency allocation authorization from the National Telecommunications Information Administration (NTIA). This funding is in addition to the \$16, 603 for Radar Frequency Management identified in the R-2.</p> <p>(U) <u>A. Mission Description</u> The B-2 SPIRIT is America's most advanced long-range strike aircraft. This all-wing two crew member aircraft has twin weapons bays of over 20,000 pounds capacity each and employs a wide array of signature reduction technologies to greatly enhance its ability to penetrate enemy defenses and survive in a highly defended target environment. The B-2 provides global force projection capability and the ability to influence an enemy regardless of the location of enemy assets or the availability of forward basing.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$6,704 Continue Developmental Test and Evaluation</p> <p>(U) \$4,556 Continue AFMSS support for baseline B-2</p> <p>(U) \$2,500 Continue AFMSS support for EGBU-28; Begin support for Mk-82 Joint Direct Attack Munition (JDAM)/Smart Bomb Rack Assembly (SBRA) Congressional Plus-Up</p> <p>(U) \$7,492 Continue support for Labs, Facilities and other government agencies for baseline B-2</p> <p>(U) \$9,705 Continue support for Labs, Facilities, and other government agencies for Link-16/CID/IFR and EGBU-28 Congressional Plus-Up; Begin support for Mk-82 JDAM/SBRA</p> <p>(U) \$25,609 Continue support for modification of EMD Aircraft; continue JASSM integration; continue contractor support of flight test base of operations; continue SATCOM integration, continue classified efforts; perform integration studies, reports, and analyses</p> <p>(U) \$69,487 Continue development of Congressional Plus-up programs (Link 16/CID/IFR, EGBU-28 Integration); Begin Mk-82 JDAM/SBRA</p>									
Project 3843	Page 1 of 7 Pages				Exhibit R-2 (PE 0604240F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604240F B-2 Advanced Technology Bomber	3843
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
	development	
(U) \$126,053	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$7,794	Continue Developmental Test and Evaluation	
(U) \$7,150	Continue AFMSS support for baseline B-2, continue support for Mk-82 JDAM/SBRA	
(U) \$3,000	Continue AFMSS support for Link-16/CID/IFR Congressional Plus-Up	
(U) \$7,548	Continue support for Labs, Facilities and other government agencies for baseline B-2, continue support for Mk-82 JDAM/SBRA, and UHF SATCOM	
(U) \$7,000	Continue support for Labs, Facilities and other government agencies for Congressional Plus-Up Programs (Link-16/CID/IFR and EGBU-28)	
(U) \$2,030	Begin support for Labs, Facilities and other government agencies for EHF SATCOM Integration	
(U) \$85,870	Continue support for modification of EMD Aircraft; continue Mk-82 JDAM/SBRA; continue UHF SATCOM integration; continue contractor support of flight test base of operations; continue classified efforts; perform planning, integration studies, proposals, reports, and analyses.	
(U) \$54,000	Continue development of Congressional Plus-up programs (Link-16/CID/IFR and EGBU-28)	
(U) \$42,570	Begin development of EHF SATCOM Integration	
(U) \$216,962	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$14,005	Continue Development Test and Evaluation for Mk-82 JDAM/SBRA, UHF SATCOM, and EGBU-28	
(U) \$3,650	Continue AFMSS support for Mk-82 JDAM/SBRA and EHF	
(U) \$11,310	Continue support for Labs, Facilities and other government agencies for baseline B-2; continue support for Link-16/CID/IFR integration; continue support for EGBU-28 integration; continue support for EHF SATCOM integration; continue support for Mk-82 JDAM/SBRA; continue support for UHF SATCOM	
(U) \$164,659	Continue contractor support of flight test base of operations; continue UHF SATCOM integration; continue Link-16/CID/IFR integration; continue EGBU-28 integration; continue EHF SATCOM integration; continue classified efforts; perform planning, integration studies, proposals, reports, and analyses	
(U) \$4,500	Begin Digital Engine Controller development	
(U) \$16,603	Begin Radar Frequency Management modification development	
Project 3843	Page 2 of 7 Pages	Exhibit R-2 (PE 0604240F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
05 - Engineering and Manufacturing Development	0604240F B-2 Advanced Technology Bomber	3843		
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2003 (\$ in Thousands) Continued</u>				
(U) \$1,000	Begin support for Labs, Facilities and other government agencies for Radar Frequency Management modification development			
(U) \$1,600	Begin Small Diameter Bomb - Smart Bomb Rack Assembly Integration			
(U) \$8,000	Begin Aft Deck repair and life extension			
(U) \$225,327	Total			
(U) <u>B. Budget Activity Justification</u>				
This program is in budget activity 5 - Engineering and Manufacturing Development - because of concurrency in developing, testing, producing, and deploying the B-2.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	129,118	155,004	116,923	TBD
(U) Appropriated Value	130,313	155,004		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-912	-2,042		
b. Small Business Innovative Research	-3,642			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	127			
e. Rescissions	-283			
(U) Adjustments to Budget Years Since FY 2002 PBR	450	64,000	108,404	
(U) Current Budget Submit/FY 2003 PBR	126,053	216,962	225,327	TBD
(U) <u>Significant Program Changes:</u>				
FY01: Congress appropriated an additional \$82M: Mk-82 JDAM/SBRA Integration (\$56M), EGBU-28 Integration (\$15M), and In-flight Replanner (\$11M); decrease of \$3.0M to adjust for actuals				
FY02: Congress appropriated an additional \$64M: LINK-16/Center Instrument Display/Inflight Replanner (\$47M), EGBU-28 Integration (\$17M); decrease of \$1.89M for Congressional Reduction; decrease of \$152K for PBD 630 General Reductions				
FY 03: FY 03 BES added \$1.202M for Interim Contractor Support Offset Zero Budget Transfer; added Digital Engine Controller (\$4.5M); added Radar Frequency				
Project 3843	Page 3 of 7 Pages	Exhibit R-2 (PE 0604240F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604240F B-2 Advanced Technology Bomber				PROJECT 3843	
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>									
(U) <u>Significant Program Changes Continued:</u> Management modification (\$23.8M); added Small Diameter Bomb (\$1.6M); added Aft Deck repair and life extension (\$8M); continued funding for Link-16/CID/IFR (\$60M); added Correction of Deficiencies (COD) (\$1M); continued funding for EGBU-28 (\$9M) . Adjustment for Advisory & Assistance Support (A&AS) reduction -\$151K; adjustment for inflation -\$547K.									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) A/C Proc, AF, Combat A/C/BA07/B-2A	0	0	0	0	0				
(U) A/C Proc, AF, Post Prod Support/BA07	17,487	12,397	3,329	7,316	7,488	7,632	7,778		
(U) A/C Proc, AF, Modifications/BA05/B-2A	23,578	22,547	72,123	128,552	69,575	120,079	570,289		
(U) A/C Prod, AF, ICS	40,389	38,612	33,484	33,362	33,780	23,105	11,837		
(U) A/C Proc, AF, Cmn Spt Eq/BA07/Items<\$2M	439	427	426	470	468	477	487		
(U) A/C Proc, AF, A/C Initial Spares/BA06/B-2A	37,060	58,713	8,533	4,830	3,977	3,959	2,683		
(U) Proc (Other), AF/BA 02,03, 04/B-2A	6,043	8,279	7,604	7,779	7,933	8,074	8,235		
(U) Military Construction/BA01	12,050	0	36,100	0	0	0	0		
(U) <u>E. Acquisition Strategy</u> Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor; use of cost plus award fee (CPAF) development contracts; and combining developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime and differences in fielded configurations									
(U) <u>F. Schedule Profile</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>						
Project 3843	Page 4 of 7 Pages	Exhibit R-2 (PE 0604240F)							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
05 - Engineering and Manufacturing Development					0604240F B-2 Advanced Technology Bomber					3843		
(U) <u>F. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) AHFM Flight Test Complete	*											
(U) JASSM Flight Test Complete					*							
(U) Link-16/CID/IFR Final Design Review						X						
(U) EHF Contract Award							X					
(U) Radar Frequency Management Mod Dev Contract Award										X		
(U) Small Diameter Bomb-SBRA Contract Award										X		
(U) Aft Deck Repair Contract Award										X		
(U) EGBU-28 Flight Test Complete												X
(U) JDAM-82/SBRA Flight Test Complete												X
(U) UHF SATCOM Flight Test Complete												X
* = Completed event												
x = Planned event												
Project 3843				Page 5 of 7 Pages				Exhibit R-2 (PE 0604240F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
05 - Engineering and Manufacturing Development				0604240F B-2 Advanced Technology Bomber			3843				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Equipment Development & Evaluation					101,155		192,595		198,512	
(U)	Government Test					6,704		7,789		14,005	
(U)	Other Government Costs (OGC)					17,197		16,578		12,810	
(U)	Other					997		0		0	
(U)	Total					126,053		216,962		225,327	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Air Vehicle - NG	Multiple	Multiple	22,822,357	22,822,357	21,438,264	94,099	183,340	194,862	911,792	22,822,357
	Aircrew Training	CPIF	Jul 1985	561,345	561,345	561,345	0			0	561,345
	Mission Planning	Multiple	Multiple	361,137	361,137	325,281	7,056	9,150	3,650	16,000	361,137
<u>Support and Management Organizations</u>											
	Other Govt Costs	N/A		1,197,869	1,197,869	1,027,766	18,194	16,578	12,810	122,521	1,197,869
<u>Test and Evaluation Organizations</u>											
	Govt Test	N/A	N/A	866,149	866,149	781,856	6,704	7,794	14,005	Continuing	TBD
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
05 - Engineering and Manufacturing Development				February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE		PROJECT			
05 - Engineering and Manufacturing Development				0604240F B-2 Advanced Technology Bomber		3843			
(U) Government Furnished Property Continued:									
<u>Item</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>									
Engines G.E.	Multiple	Multiple	N/A	566,500	0				566,500
AARL Boeing		FPIF	Jun 88	125,934	0	100		0	126,034
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>									
Subtotal Product Development				23,017,324	101,155	192,590	198,512	927,792	24,437,373
Subtotal Support and Management				1,027,766	18,194	16,578	12,810	122,521	1,197,869
Subtotal Test and Evaluation				781,856	6,704	7,794	14,005	TBD	TBD
Total Project				24,826,946	126,053	216,962	225,327	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604251F SPACE-BASED RADAR EMD				PROJECT 5009		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5009	SBR Concept and Technology Development	0	24,752	0	0	0	0	0	0	24,752
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

Note: FY02 funding was initially loaded in PE 0604251F (BA 5); however, all future funding for this program has been transferred to PE 0603858F, Space Based Radar Dem/Val (BA 4).

(U) **A. Mission Description**
 The 2001 Multi-Theater Target Tracking Capability (MT3C) Mission Needs Statement (MNS) establishes the requirement for continuous multi-theater surveillance, identification, tracking, and targeting of surface-moving targets. In November 2001 USD(AT&L) directed a focused requirements and risk reduction effort to provide a space element of a future air/space Intelligence, Surveillance, and Reconnaissance (ISR) system to satisfy the MT3C MNS.

The Space Based Radar (SBR) program is focused to mature technology and develop an ISR system capable of providing Ground Moving Target Indication (GMTI), Synthetic Aperture Radar (SAR) imaging, and Digital Terrain and Elevation Data (DTED) over a large portion of the Earth on a near-continuous basis. The system will maximize utility to the tactical warfighters through responsive tasking and timely data dissemination. The SBR system will allow military forces a 'deep-look' into denied areas of interest, on a non-intrusive basis without risk to personnel or resources. This can be done across the spectrum of conflict and simultaneously in multiple theaters -- not currently available with existing capabilities.

Technology maturation, risk reduction and concept development are essential elements of the SBR program strategy to reach initial launch capability (ILC) prior to the end of FY10. Investments in key risk areas are focused to mature technologies leading to component design and demonstration. Concept development activities will focus on reducing risk, integrating technologies, and evaluating system level concepts within the broad range of the C2ISR architecture. Demonstrations as well as modeling and simulation will maximize the operational capabilities of the SBR system.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$0 No Activity
 (U) \$0 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
05 - Engineering and Manufacturing Development	0604251F SPACE-BASED RADAR EMD	5009			
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2002 (\$ in Thousands)</u>					
(U) \$14,552	Begin Technology Risk Reduction (continuation of classified FY01 Electronically Scanned Array (ESA) effort; start on-board processing efforts; begin BMC3 effort; provide Demonstration support)				
(U) \$7,900	Begin Requirements Development (SBR system and operational requirements definition)				
(U) \$2,300	Provide Program Support (Concept Evaluation, Schedule Management, Independent Cost Analysis, Technical Evaluation, Source Selection)				
(U) \$24,752	Total				
Funding Tail FY03-07 has been programmed into the budget in PE 0603858F, SBR Dem/Val, to develop a viable and executable program.					
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U) \$0	No Activity - Program funded in PE 0603858F, Space-Based Radar Dem/Val effective in FY03				
(U) \$0	Total				
(U) <u>B. Budget Activity Justification</u>					
This activity is a BA 4 because all efforts are included in the demonstration and validation phase and are necessary to evaluate integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget			50,000		TBD
(U) Appropriated Value			25,000		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions			-248		
b. Small Business Innovative Research					
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram					
e. Rescissions					
(U) Adjustments to Budget Years Since FY 2002 PBR					
(U) Current Budget Submit/FY 2003 PBR			24,752		TBD
Note: Only the initial \$24.8 million is loaded in this PE (see Significant Program Changes below)					
Project 5009	Page 2 of 5 Pages	Exhibit R-2 (PE 0604251F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002																																																																																																																																																																			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604251F SPACE-BASED RADAR EMD				PROJECT 5009																																																																																																																																																																		
<p>(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u></p> <p>(U) <u>Significant Program Changes:</u> Revised funding tail FY03 - 07 has been programmed into the budget in PE 0603858F, SBR Dem/Val, to develop a viable and executable program.</p> <p>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) RDT&E-AF, PE 0603858F, Space Based Radar (SBR) Dem/Val</td> <td></td> <td></td> <td style="text-align: right;">47,859</td> <td style="text-align: right;">81,995</td> <td style="text-align: right;">81,385</td> <td style="text-align: right;">105,881</td> <td style="text-align: right;">235,887</td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Cost of War Transfer Account</td> <td></td> <td></td> <td style="text-align: right;">43,000</td> <td style="text-align: right;">203,000</td> <td style="text-align: right;">283,000</td> <td style="text-align: right;">373,000</td> <td style="text-align: right;">281,000</td> <td style="text-align: right;">0</td> <td style="text-align: right;">1,183,000</td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) None</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) <u>E. Acquisition Strategy</u> (U) The Air Force will lead the SBR Joint Program Office with the National Reconnaissance Office (NRO) as the principal partner. The acquisition strategy will consist of a mixture of sole source and competitive award approaches.</p> <p>(U) <u>F. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) Key Decision Point A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Begin Requirements Development</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Analysis of Alternatives (AoA) supporting contracts in place</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Begin AoA</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Begin Technology Risk Reduction</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Legend: * = Completed Events; X = Planned Events</p>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) RDT&E-AF, PE 0603858F, Space Based Radar (SBR) Dem/Val			47,859	81,995	81,385	105,881	235,887		TBD	(U) Cost of War Transfer Account			43,000	203,000	283,000	373,000	281,000	0	1,183,000	(U) Other APPN										(U) None											<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Key Decision Point A													(U) Begin Requirements Development													(U) Analysis of Alternatives (AoA) supporting contracts in place													(U) Begin AoA													(U) Begin Technology Risk Reduction												
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Project 5009				Page 3 of 5 Pages				Exhibit R-2 (PE 0604251F)																																																																																																																																																																		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604251F SPACE-BASED RADAR EMD			PROJECT 5009				
(U) A. Project Cost Breakdown (\$ in Thousands)											
					<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Technology Risk Reduction effort							14,552			
(U)	Requirements Development							7,900			
(U)	Program Support							2,300			
(U)	Total							24,752			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or</u>	<u>Contract</u>										
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>							
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
AFSPC Requirements	FFRDC/SETA	Various	Continuing	Continuing			7,900		0	7,900	
Development	and GSA										
	contracts										
Technology Risk Reduction	Add to	Various					14,552		0	14,552	
(including ESA development)	Existing										
Effort	Contract and										
	other contracts										
	as appropriate										
Note: All FYDP funding FY03 and beyond is included in PE 0603858F, Space-Based Radar Dem/Val.											
<u>Support and Management Organizations</u>											
SMC & AFSPC	TBD	Feb 02						2,300	0	2,300	
Note: All FYDP funding FY03 and beyond is included in PE 0603858F, Space-Based Radar Dem/Val.											
<u>Test and Evaluation Organizations</u>											
N/A											
Project 5009				Page 4 of 5 Pages				Exhibit R-3 (PE 0604251F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002					
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT				
05 - Engineering and Manufacturing Development		0604251F SPACE-BASED RADAR EMD			5009				
(U) Government Furnished Property:									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						22,452		0	22,452
Subtotal Support and Management						2,300		0	2,300
Subtotal Test and Evaluation									
Total Project						24,752		0	24,752
Note: All FYDP funding FY03 and beyond is included in PE 0603858F, Space-Based Radar Dem/Val.									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	52,206	42,546	65,082	57,856	43,209	36,786	37,469	Continuing	TBD
1011 Joint Service Electronic Combat Systems Tester	2,899	2,521	1,696	0	0	0	0	0	47,334
2462 Compass Call (CC)	762	0	0	0	0	0	0	0	66,037
3891 Advanced IR Counter Measures (AIRCМ)	5,066	991	4,422	4,591	2,181	2,237	2,266	Continuing	TBD
3945 RF Towed Decoy Systems	25,968	33,628	43,090	53,265	41,028	34,549	35,203	Continuing	TBD
4832 Precision Location and Identification (PLAID)	12,376	5,406	10,574	0	0	0	0	0	39,358
8462 MALD	5,135	0	5,300	0	0	0	0	0	10,435
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

AIRCМ includes three subprojects: Loitering EW Killer (LEWK) ACTD, Advanced Strategic and Tactical Infrared Expendables (ASTE), and software upgrades to the passive UV missile warner, the AAR-47.

(U) **A. Mission Description**
 This program element (PE) consolidates engineering development efforts related to Air Force Electronic Warfare (EW) requirements. It centralizes USAF funding and management of common EW systems development. These funds transition EW technologies to an installed operational capability. This PE executes projects to provide capabilities to avoid or degrade enemy acquisition, tracking and attack of DoD operational platforms. These projects include electro-optical (EO), infrared (IR), radio frequency (RF) and laser situational awareness and self protection systems, command and control warfare (C2W) electronic attack systems, and the test equipment needed to support them.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
05 - Engineering and Manufacturing Development		0604270F EW Development			
(U) B. Budget Activity Justification					
A key criterion for the included projects in this program element is the need for engineering and manufacturing developmental activities, therefore these programs are in Budget Activity 5 - Engineering and Manufacturing Development (EMD).					
(U) C. Program Change Summary (\$ in Thousands)					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	58,198	53,655	45,842	TBD
(U)	Appropriated Value	53,098	41,267		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-372	-421		
	b. Small Business Innovative Research	-1,674			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	1,269			
	e. Rescissions	-115			
(U)	Adjustments to Budget Years Since FY 2002 PBR		1,700	19,240	
(U)	Current Budget Submit/FY 2003 PBR	52,206	42,546	65,082	TBD
(U) Significant Program Changes:					
\$6.7M added by Congress in FY02 for PLAID risk reduction efforts.					
\$5.0M removed by Congress in FY 02 from overall PE for poor execution.					
\$.421M removed for Congressional efficiency rescissions.					
\$1.7M added in FY03 to JSECST to add flight line testing of F-15 ALQ-135 Band 1.5 capability.					
\$2.0M added in FY03 for Loitering EW Killer ACTD.					
\$5.3M added in FY03 for MALD SDD.					
\$10.570M added in FY03 for PLAID SDD due to contract cost growth.					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 1011			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
1011	Joint Service Electronic Combat Systems Tester	2,899	2,521	1,696	0	0	0	0	0	47,334	
<p>(U) <u>A. Mission Description</u> The Joint Service Electronic Combat Systems Tester (JSECST) fills a combined Air Force and Navy operational requirement for a small, adaptable, and highly mobile tester capable of verifying system level performance of installed electronic countermeasures systems. JSECST provides an organizational-level flight line capability for verifying operational status of aircraft-installed electronic combat (EC) systems including Group A antennas and transmission lines. JSECST will fill a void in current Air Force end-to-end test capability. The JSECST system consists of core test sets (CTS), nomenclature AN/USM-670, test program sets (TPS), and software development stations (SDS). The CTS provides the stimulus, measurement, operator-interface, analysis and control functions common across all applications. The TPSs provide aircraft specific hardware interfaces and software packages to employ the CTS. The SDS provides computer resources for developing and maintaining CTS and TPS software. Initial TPS will support the F-15C. The Follow-on Test Program Set (FOTPS) program will design, develop, assemble, integrate, test, and deliver TPSs for use with the AN/USM-670 for additional aircraft. The follow-on Air Force platforms include the F-15E, F-16 (Blocks 25/30/32/40/42/50/52), and OA/A-10. Navy platforms include the AV-8B, F/A-18 A/B and the F-14 B/D. (Navy platforms will be funded by the Navy.) JSECST is intended to meet the organizational level support equipment requirements of electronic combat systems for service through a 20-year life cycle.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$2,280 Continue FOTPS EMD Contract (U) \$364 Continue SPO Support (U) \$185 Continue Government Test (U) \$70 Continue TPS Lab Support (U) \$2,899 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$2,071 Continue FOTPS EMD Contract (U) \$290 Continue SPO Support (U) \$160 Continue Government Test (U) \$0 Continue TPS Lab Support (U) \$2,521 Total</p>											
Project 1011				Page 3 of 29 Pages				Exhibit R-2A (PE 0604270F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development			PROJECT 1011		
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2003 (\$ in Thousands)</u>									
(U) \$1,041 Complete FOTPS EMD Contract									
(U) \$390 Continue SPO Support									
(U) \$195 Complete Government Test									
(U) \$70 Complete TPS Lab Support									
(U) \$1,696 Total									
(U) <u>B. Project Change Summary</u>									
\$1.7M of FY03 RDT&E money was added to fund the FOTPS for F-15E Band 1.5									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) Aircraft Procurement, AF PE	17,127	24,269	5,449	0	0	0	0	0	46,845
27442F (Common ECM Equipment), In Service Direct Ground Support Equipment									
(U) Initial Spares	717	151	823	0	0	0	0	0	1,691
(U) Total Aircraft Procurement, AF	17,844	24,420	6,272	0	0	0	0	0	48,536
(U) <u>D. Acquisition Strategy</u>									
The acquisition strategy is competitive, cost-plus contracts for CTS development. FOTPS acquisition strategy is a sole source, cost-plus contract. Production and support contract is sole source.									
(U) <u>E. Schedule Profile</u>									
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
05 - Engineering and Manufacturing Development					0604270F EW Development					1011				
(U) <u>E. Schedule Profile Continued</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Operational User Flight Line Assessment	*													
(U) CTS Milestone III (Apr 01)			*											
(U) CTS Production Lot 1 award (Aug 01)				*										
(U) CTS Production Lot 2 award (Jun 02)							X							
(U) CTS Production Lot 3 award (Jun 03)												X		
(U) Complete FOTPS Development												X		
* - Denotes a completed event														
X - Denotes a planned event														
Project 1011				Page 5 of 29 Pages				Exhibit R-2A (PE 0604270F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development			PROJECT 1011			
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	EMD Contracts					2,280		2,071		1,045
(U)	SPO Support					364		290		386
(U)	Government Test					185		160		195
(U)	FOTPS Lab Support					70				70
(U)	Total					2,899		2,521		1,696
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
AAI	CPAF	Mar 96	28,340	28,340	26,765				0	26,765
FO TPS AAI	CPIF	Jun 00	6,325	6,325	1,253	2,280	2,071	1,045	0	6,649
<u>Support and Management Organizations</u>										
ASC/SMNT, NAVAIR,		Various			10,946	364	290	386	0	11,986
Wright Labs										
<u>Test and Evaluation Organizations</u>										
53 EWG, 46 TW, Eglin AFB					1,254	255	160	265	0	1,934
FL										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					28,018	2,280	2,071	1,045	0	33,414
Subtotal Support and Management					10,946	364	290	386	0	11,986
Subtotal Test and Evaluation					1,254	255	160	265	0	1,934
Total Project					40,218	2,899	2,521	1,696	0	47,334

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 2462	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2462 Compass Call (CC)	762	0	0	0	0	0	0	0	66,037
<p>(U) <u>A. Mission Description</u> COMPASS CALL is the USAF's only non-lethal Suppression of Enemy Air Defense (SEAD) platform and airborne wide area coverage offensive counter information system. It denies, disrupts, degrades and deceives adversary voice and data communications, disrupting the ability to effectively command and control forces in the field. Although a fielded, operational capability, COMPASS CALL continues to evolve and adapt to counter the changing adversary tactical communications systems. The Tactical Radio Acquisition and Countermeasures Subsystem (TRACS) replaces the aging compressive receiver suite responsible for acquiring target systems with a digital, reprogrammable receiver system. TRACS will enable COMPASS CALL to remain viable in countering the next generation of deployed threats. Additionally, new target (class 6) countermeasures capability is under development. This effort funds the non-recurring efforts associated with TRACS development for COMPASS CALL.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$262 Continue New target class countermeasures development (U) \$250 Continue New target class countermeasures operational flight test (U) \$125 Continue Block 30 threat signal update (U) \$125 Continue Block 30 waveform update (U) \$762 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (RDT&E funding has been transferred to Compass Call PE27253F) (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>B. Project Change Summary</u> All program funding in this project for FY02 and later has been transferred to Compass Call PE 27253F.</p>									
Project 2462			Page 7 of 29 Pages				Exhibit R-2A (PE 0604270F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 2462			
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E											
(U) Other APPN											
(U) Compass Call (RDT&E), AF PE27253F	21,681	3,885	3,878	3,870	0	5,000	6,456	Continuing	Continuing		
(U) D. Acquisition Strategy											
Cost Plus Incentive Fee/Award Fee contracting will be employed for all activities.											
(U) E. Schedule Profile											
				<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) New Countermeasures#				*	*	*	*				
(U) New CM Flt Test				*	*	*	*				
(U) Block 30 Signals Update#				*	*	*	*				
(U) Block 30 Waveform Update#				*	*	*	*				
# - New countermeasures development and Block 30 signals/waveform updates are a continuing effort to improve the existing system's ability to effectively counter emerging threats. Due to the dynamic nature of this platform's mission, this effort is a continuous activity.											
* - Denotes a completed event											
X - Denotes a planned event											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 2462			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	TRACS-Basic					0		0		0	
(U)	New Threat (class 6) CM Development					512		0		0	
(U)	Block 30 Signals Update Development					125		0		0	
(U)	Block 30 Waveform Update Development					125		0		0	
(U)	Total					762		0		0	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Sanders	SS/CPIF	1QFY99		TBD	27,099	512	0	0	0	27,611
	Raytheon Ft Wayne	SS/CPIF	N/A		23,543	23,535	0	0	0	0	23,535
	GTE	SS/CPIF	N/A		8,875	8,875	0	0	0	0	8,875
<u>Support and Management Organizations</u>											
	Misc (SPO, Labs)	Various	N/A			3,172	25	0	0	0	3,197
<u>Test and Evaluation Organizations</u>											
	EPG, Ft. Huachuca NM	MIPR	2QFY99			500	125	0	0	0	625
	WTR	616	2QFY99			500	100	0	0	0	600
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
		<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development			PROJECT 2462		
(U) Government Furnished Property Continued:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
Misc				1,594	0	0	0	0	1,594
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				61,103	512	0	0	0	61,615
Subtotal Support and Management				3,172	25	0	0	0	3,197
Subtotal Test and Evaluation				1,000	225	0	0	0	1,225
Total Project				65,275	762	0	0	0	66,037

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 3891	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3891 Advanced IR Counter Measures (AIRCM)	5,066	991	4,422	4,591	2,181	2,237	2,266	Continuing	TBD
<p>*Advanced Infrared Countermeasures (AIRCM) now includes two subprojects: Advanced Strategic and Tactical IR Expendables (ASTE), and software upgrade to AAR-47. The Air Force terminated its participation in Common Missile Warning System (CMWS) in the FY02 budget cycle. The Large Aircraft IRCM/Laser Infrared Flyout Experiment (LAIRCM/LIFE) transferred to PE 0603270F in FY99, FY00 and FY01.</p> <p>(U) <u>A. Mission Description</u> The Advanced IR Countermeasure (AIRCM) project contains related aircraft self-protection efforts aimed at increasing aircraft survivability against the increasing threat of sophisticated surface-to-air and air-to-air missiles, which may employ such features as next-generation electro-optics or dual IR and radio frequency seekers. AIRCM currently consists of two efforts, the USAF/USN Advanced Strategic and Tactical IR Expendables (ASTE) program, and USAF/USN AAR-47 software upgrade. The LAIRCM/LIFE effort and funding was transferred to PE 63270F for FY99, FY00, and FY01 to support ongoing Advanced Technology Demonstration study at Wright Lab. Air Force participation in the CMWS program was terminated in the FY02 budget process. ASTE will provide advanced IR expendable countermeasures. ASTE flares will be functionally compatible with existing ALE-40, 45, and 47 dispenser systems and will be employed across multiple USAF and USN weapon systems. The AAR-47 software upgrade supports two configurations of software intended to decrease the AAR-47 false alarm rate and improve threat detection for all large body aircraft.</p> <p>The BPAC also funds the Loitering Electronic Warfare Killer (LEWK) ACTD to develop and demonstrate a long-endurance UAV for jamming and payload delivery. This ACTD was approved in FY01 and the USAF has been designated the lead service.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$3,417 ASTE Flare Development (U) \$700 Comet Force Development Evaluation Phase I (U) \$949 AAR-47 Software Upgrade (U) \$5,066 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$991 AAR-47 Software Upgrade (U) \$991 Total</p>									
Project 3891			Page 11 of 29 Pages				Exhibit R-2A (PE 0604270F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development				0604270F EW Development				3891	
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2003 (\$ in Thousands)</u>									
(U)	\$1,995	LEWK ACTD support							
(U)	\$2,377	ASTE Flare Development							
(U)	\$50	AAR-47 Software Upgrades							
(U)	\$4,422	Total							
(U) <u>B. Project Change Summary</u>									
LEWK was added as an FY01 approved ACTD. USAF will contribute \$2M in FY03 and \$2.5M in FY04.									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E								
(U)	Other APPN								
(U)	4,779	4,815	17,536	16,847	16,853	13,099	11,005	Continuing	Continuing
(U)	Procurement of Ammunition, AF, PE 28030F, ASTE flares								
(U)	1,000	5,000	1,000	1,000	500	0	0	Continuing	
(U)	LEWK ACTD (OSD PE63750D)								
(U)	0	0	1,000	1,000	0	0	0	Continuing	
(U)	LEWK ACTD (USN PE0603502N)								
(U)	0	0	1,000	1,000	0	0	0	Continuing	
(U)	LEWK ACTD (US Army PE0603003)								
(U)	0	0	0	500	0	0	0	Continuing	
(U)	LEWK ACTD (USMC PE63640M)								
(U)	9,357	12,349	9,253	12,692	12,723	12,560	12,806	Continuing	Continuing
(U)	RDT&E, AF, PE 63270F, EO/IR Warning & Countermeasures, BA-3, BPAC 691X, Funds multiple EO/IR Science and								
Project 3891			Page 12 of 29 Pages				Exhibit R-2A (PE 0604270F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2002				
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development						PE NUMBER AND TITLE 0604270F EW Development					PROJECT 3891				
(U) C. Other Program Funding Summary (\$ in Thousands)															
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>						
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>							
Technology projects															
(U) D. Acquisition Strategy															
The planned acquisition strategy is competitive cost-plus award fee.															
LEWK is an ACTD under OSD. Transition to USAF will be determined upon Military Utility Assessment in FY04.															
(U) E. Schedule Profile															
				<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
				1	2	3	4	1	2	3	4	1	2	3	4
(U)	ASTE DT&E - Fighter														
(U)	ASTE OT&E - Fighter														
(U)	ASTE MS III - Fighter														
(U)	ASTE PDR - Transport (Completed Apr 99)														
(U)	ASTE CDR - Transport														
(U)	ASTE DT&E-Transport														
(U)	ASTE OT&E -Transport														
(U)	AAR-47 Analyze Data (V21.2)														
(U)	AAR-47 SW Upgrade Contract (V22)														
(U)	AAR-47 Collect/Validate Data (V22)														
(U)	AAR-47 Collect/Validate Data (V22.x)														
(U)	AAR-47 Modeling/Simulation														
(U)	AAR-47 Algorithm Development														
(U)	LEWK ACTD Inflatable Wing development														
(U)	LEWK ACTD Vehicle jammer downselect														
	* - Denotes a completed event X - Denotes a planned event														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development					0604270F EW Development			3891		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	ASTE Prime Contract Costs				2,480		0			1,408
(U)	ASTE Test & Evaluation				264		0			314
(U)	ASTE Verification & Validation				150		0			100
(U)	ASTE Modeling and Simulation				155		0			155
(U)	ASTE Mission Support				368		0			400
(U)	Comet Pod Force Development Evaluation Phase I				700		0			0
(U)	AAR-47 Modeling & Analysis				332		250			50
(U)	AAR-47 Algorithm Development / live fire testing / data collection				617		455			
(U)	AAR-47 Correction of Deficiencies				0		286			
(U)	LEWK ACTD support				0		0			1,995
(U)	Total				5,066		991			4,422
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
ASTE - BAE	CPAF	Nov 95	8,324	8,324	16,640	2,480	0	1,408	Continuing	TBD
AAR-47 - GTRI (V22)	T&M	Various	0	0	0	949	991	50	Continuing	TBD
Comet Pod FDE Phase I	Fixed Price	Mar 01	700		0	700				700
<u>Support and Management Organizations</u>										
ASTE M&A - SAIC	PR	Various		2,554	1,454	155	0	155	Continuing	TBD
ASTE V&V - Mac B	PR	Various		789	359	150	0	100	Continuing	TBD
ASTE - Misc	Various	Various		Continuing	36,304	368	0	400	Continuing	TBD
LEWK ACTD -	ACTD	Various		Continuing	0	0	0	1,995	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002	
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development				0604270F EW Development				3891	
(U) <u>Performing Organizations Continued:</u>									
<u>Support and Management Organizations</u>									
MARSYSCOM									
<u>Test and Evaluation Organizations</u>									
ASTE - 46TW	Various	Various	2,897	897	264	0	314	Continuing	TBD
ASTE - Misc	Various	Various	Continuing	282	0	0	0	Continuing	TBD
46TW/AFFTC/ BAE Support	Various	Various	30,114	17,092	0	0	0	Continuing	TBD
AAR-47 Live Fire Test / Data Collection					0	0	0	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development					16,640	4,129	991	1,458	TBD
Subtotal Support and Management					38,117	673	0	2,650	TBD
Subtotal Test and Evaluation					18,271	264	0	314	TBD
Total Project					73,028	5,066	991	4,422	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270F EW Development	PROJECT 3945
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3945 RF Towed Decoy Systems	25,968	33,628	43,090	53,265	41,028	34,549	35,203	Continuing	TBD

* RDT&E funds are used for development, risk reduction, integration, flight test, and procurement of lab and test assets. Hardware is purchased by Group A aircraft upgrade kits with decoys purchased separately.

(U) A. Mission Description

This project develops, integrates and tests radio frequency (RF) towed decoy systems. RF towed decoys are low cost RF countermeasures that provide increased survivability against monopulse, semi-active, and active RF missile threats during the terminal portion of an engagement. This project developed, integrated and tested the Joint Air Force/Navy ALE-50 Advanced Airborne Expendable Decoy program and its follow-on variants. The Air Force is currently participating in the Navy-led Integrated Defensive Electronic Countermeasures (IDECM) program to jointly develop a common techniques generator (TG) ALQ-214 for the B-1B and F/A-18E/F, and a Fiber Optic Towed Decoy (FOTD) for the F-15C/E, B-1B and F/A-18E/F. Air Force funding pays for unique Air Force IDECM development costs, integration and test of an FOTD subsystem on the F-15 (this includes an upgrade to the ALQ-135 techniques generator), IDECM RF Countermeasures (RFCM) field and test support for host platform integration activities, and alternative FOTD activities for risk reduction and competition. The Defensive Systems Upgrade Program (DSUP) program funds integration and test of IDECM hardware on the B-1B.

(U) FY 2001 (\$ in Thousands)

- (U) \$8,538 IDECM Common**
- (U) \$14,150 IDECM F-15**
- (U) \$3,280 Mission and Test Support**
- (U) \$25,968 Total**

(U) FY 2002 (\$ in Thousands)

- (U) \$3,505 IDECM Common**
- (U) \$24,876 IDECM F-15**
- (U) \$5,247 Mission and Test Support**
- (U) \$33,628 Total**

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development			PROJECT 3945		
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2003 (\$ in Thousands)</u>									
(U) \$12,866 IDECM Common									
(U) \$25,386 IDECM F-15									
(U) \$4,838 Mission and Test Support									
(U) \$43,090 Total									
(U) <u>B. Project Change Summary</u>									
The US Navy restructured a third time in Oct 01 due to internal budget actions, cost overruns and hardware maturity. This delays ALE-55 decoy testing resulting in production decision/contract award in FY05. Furthermore, this places B-1B as the lead platform for test and integration of the ALE-55 and may drive cost increases due to delay in EMD schedule. The B-1B DSUP program procurement money was zeroed out during the FY02 POM. B-1B DSUP procurement funding is being restored in the FY03 ABES/APOM due to consolidation efforts. Funding changed in FY03 due to ALE-50 transferring to PE27040F.									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) Aircraft Procurement, AF PE	46,832	22,851	0	0	0	30,035	30,421	Continuing	Continuing
27442F, War Consumable (RF towed decoys)									
(U) Aircraft Procurement, AF PE	0	0	0	30,428	22,604	22,181	22,817	Continuing	Continuing
27442F, Mods (B-1B)									
(U) Aircraft Procurement, AF PE	0	0	0	0	0	22,350	22,776	Continuing	Continuing
27442F, Mods (F-15)									
(U) <u>D. Acquisition Strategy</u>									
The acquisition strategy for IDECM RDT&E was competitive, cost-plus incentive fee /award fee. The production contract will be sole source for first two lots with full and open competition in lots three and beyond.									
Project 3945			Page 17 of 29 Pages			Exhibit R-2A (PE 0604270F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604270F EW Development					PROJECT 3945		
(U) E. Schedule Profile												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	B-1B Defensive Systems Upgrade Program (DSUP) Flight Test Ready Review			*								
(U)	B-1B DSUP Developmental T&E				*							
(U)	B-1B DSUP Operational T&E										X	
(U)	F-15 ALQ-135 Techniques Generator Critical Design Review (CDR)				*							
(U)	F-15 FOTD PDR (Software)			*								
(U)	F-15 FOTD CDR (Software)					X						
(U)	F-15 Risk Reduction flight test, Phase I, II, & III			*					X			X
(U)	F-15/FOTD DT/OT&E										X	
(U)	1x4 DCL SCA functional configuration audit					X						
	Note: See Change Summary											
	* - Denotes a completed event											
	X - Denotes a planned event											
Project 3945				Page 18 of 29 Pages				Exhibit R-2A (PE 0604270F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 3945		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Integrated Defensive Electronic Countermeasures (IDECM) Common					8,599		3,505		12,866
(U)	IDECM F-15					14,150		24,876		25,386
(U)	Mission and Test Support					3,219		5,247		4,838
(U)	Total					25,968		33,628		43,090
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
USAF IDECM: Development	CPAF	Nov 95	47,733	47,733	39,355	5,612	1,500	9,200	Continuing	TBD
BAE										
Development E-Systems, Goleta (now Raytheon)	CPIF	Jan 96	19,674	19,674	12,901	1,497	566	650	Continuing	TBD
F-15 IDECM Integration- Boeing/LMT/Northrop	CPFF	Aug 97	177,516	177,516	22,736	14,150	24,876	25,386	Continuing	TBD
IDECM Misc Development	Misc		6,509	6,509	3,191	1,429	1,939	3,016	Continuing	TBD
<u>Contracts</u>										
<u>Support and Management Organizations</u>										
ASC/AA - IDECM	Misc	As required	N/A		3,102	2,004	2,797	2,938	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFOTEC			N/A		1,600	0	0	0	Continuing	TBD
Flight Test Support			N/A		156	846	1,700	1,000	Continuing	TBD
Eglin			N/A		845	0	250	900	Continuing	TBD
NRL			N/A		0	430	0	0	Continuing	TBD
Project 3945			Page 19 of 29 Pages				Exhibit R-3 (PE 0604270F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002			
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development		0604270F EW Development			3945		
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
						<u>Total</u>	
	<u>Subtotals</u>					<u>Program</u>	
	Subtotal Product Development	78,183	22,688	28,881	38,252	TBD	TBD
	Subtotal Support and Management	3,102	2,004	2,797	2,938	TBD	TBD
	Subtotal Test and Evaluation	2,601	1,276	1,950	1,900	TBD	TBD
	Total Project	83,886	25,968	33,628	43,090	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 4832	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4832 Precision Location and Identification (PLAID)	12,376	5,406	10,574	0	0	0	0	0	39,358
<p>(U) <u>A. Mission Description</u> Precision Location and Identification (PLAID) will improve aircrew situational awareness by providing accurate ground emitter location and unambiguous identification. Threat systems can disrupt or negate operational missions, even without firing, by requiring aircrew reactions that affect mission objectives. Improved threat information from a modernized Radar Warning Receiver (RWR) will assist the aircrews in determining precise threat range/directions and provide option responses short of mission abort or violent aircraft maneuvering. Knowing threat location will help an aircrew respond 'real-time' to threats by providing accurate information to allow the aircrews to reroute around hostile areas. PLAID will utilize existing aircraft RWR antennas and wiring (Group A hardware). PLAID development is currently focused on the ALR-69 RWR but PLAID technology can also be applied to other RWRs. This project also contains funding for aircraft survivability enhancements not related to the PLAID program.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$9,491 Engineering and Manufacturing Development (EMD), Hardware/Software design/development/test (U) \$385 Program Office Support (U) \$0 System Engineering Support (U) \$2,500 ALR-56C RWR processor upgrade (U) \$12,376 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$1,128 Program Office Support (U) \$204 System Engineering Support (U) \$366 SOF C-130 SPD Support (U) \$3,708 Initiation of Options 2& 4 (U) \$5,406 Total</p>									
Project 4832			Page 21 of 29 Pages				Exhibit R-2A (PE 0604270F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002																																																		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270F EW Development																																																			
		PROJECT 4832																																																		
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$7,220 EMD, hardware/software design/development/test (including \$1,166.5K Award Fee)</p> <p>(U) \$1,775 Program Office Support</p> <p>(U) \$580 SOF C-130 SPD Support</p> <p>(U) \$235 System Engineering Support</p> <p>(U) \$764 SOF C-130 DT&E/OT&E</p> <p>(U) \$10,574 Total</p> <p>(U) <u>B. Project Change Summary</u></p> <p>Congress added \$10.0M in FY01 for PLAID EMD and \$3.5M in FY01 for other survivability enhancements (ALR-56C processor upgrade, Comet Pod, and contractor support). To make the PLAID program executable, the Air Force transferred \$10.057M of FY03 PLAID production funds from PE 27442F, Common Electronic Countermeasures Equipment, to PE 44011, Special Operations Forces, RDT&E AF, SOF Support, and \$568K in FY03 from PE 44011F aircraft procurement to PE 44011F RDT&E, AF, for a total of \$10.625M PLAID EMD funding in FY03. PBD 161 transferred these funds to PE 64270F for better program alignment. Congress added \$6.7M to exercise PLAID EMD options and to accelerate PLAID EMD. Congress also assessed a \$5M penalty against the EW Development PE for poor execution. The AF spread that assessment against JSECST (-\$1M), IDECM (-1.3M) and PLAID (-\$2.7M) so that PLAID ended up with a net plus-up of \$4.0M, which will be applied towards the risk reduction of the azimuth ranging option.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>Cost to</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">0</td> </tr> <tr> <td>(U) PE44011F Special Operations Forces</td> <td style="text-align: center;">1,109</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1,109</td> </tr> <tr> <td>(U) PE27442F Common ECM Equipment</td> <td></td> <td></td> <td style="text-align: center;">91</td> <td style="text-align: center;">10,254</td> <td style="text-align: center;">10,867</td> <td style="text-align: center;">11,441</td> <td style="text-align: center;">11,772</td> <td style="text-align: center;">Continuing</td> <td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u></p> <p>Acquisition was accomplished through full and open competition. The EMD contract was awarded to Raytheon Corporation in August 2001.</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E	0	0	0	0	0	0	0		0	(U) PE44011F Special Operations Forces	1,109	0	0	0	0	0	0	0	1,109	(U) PE27442F Common ECM Equipment			91	10,254	10,867	11,441	11,772	Continuing	
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																											
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																												
(U) AF RDT&E	0	0	0	0	0	0	0		0																																											
(U) PE44011F Special Operations Forces	1,109	0	0	0	0	0	0	0	1,109																																											
(U) PE27442F Common ECM Equipment			91	10,254	10,867	11,441	11,772	Continuing																																												
Project 4832	Page 22 of 29 Pages	Exhibit R-2A (PE 0604270F)																																																		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
05 - Engineering and Manufacturing Development				0604270F EW Development				4832				
(U) <u>E. Schedule Profile</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Program Management Directive Approval			*									
(U) Milestone II Decision												
(U) Acquisition Strategy Approved												
(U) Request for Proposal Release	*											
(U) Source Selection Process Complete				*								
(U) Contract Award				*								
(U) Design Review						X						
(U) Integrated Defensive Avionics Lab												X
(U) Test Readiness Review												X
(U) C-130 Combined Development/Operational Test and Evaluation Start												X
* - Denotes a completed event												
X - Denotes a planned event												
Project 4832				Page 23 of 29 Pages				Exhibit R-2A (PE 0604270F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604270F EW Development			PROJECT 4832		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Program Office Support					250		1,128		1,775
(U)	SOF C-130 Testing					0		0		764
(U)	SOF C-130 SPD Support					0		366		580
(U)	System Engineering Support					200		204		235
(U)	'Core' Engineering and Manufacturing Development, Hardware/Software design/development/test					9,426		0		7,220
(U)	EMD 'Options', hardware/software design/development/test							3,708		
(U)	Other Survivability Enhancements (ALR-56C processor upgrade, Comet Pod, and contractor support)					2,500				0
(U)	Total					12,376		5,406		10,574
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
WR-ALC/LNRC/Raytheon	Full and open competition/CPAF	August 01	TBD	TBD	10,087	8,824	0	6,054	0	24,965
WR-ALC/LN/Raytheon	Award Fee			TBD	307	667		1,166		2,140
WR-ALC/LN/Raytheon	EMD Options			TBD			3,708			3,708
Survivability Enhancement Organizations	WR-ALC/LN for ALR-56C processor upgrade;	May 01	TBD	TBD	0	2,500	0	0	0	2,500
Project 4832					Page 24 of 29 Pages			Exhibit R-3 (PE 0604270F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										PROJECT
05 - Engineering and Manufacturing Development										4832
PE NUMBER AND TITLE										
0604270F EW Development										
<p>(U) Performing Organizations Continued:</p> <p><u>Product Development Organizations</u></p> <p>ASC/AAN for Comet Pod</p> <p><u>Support and Management Organizations</u></p> <p>Engineering/McCauley 616 Mar 01 TBD TBD 225 0 225 510 0 960 Brown</p> <p>Program Office Support/LN-1 TBD Sep 01 TBD TBD 313 385 750 1,265 0 2,713</p> <p>SOF C-130 SPD 616 Feb 02 TBD TBD 0 0 363 580 0 943</p> <p><u>Test and Evaluation Organizations</u></p> <p>Western Test Range TBD TBD TBD TBD 0 0 125 235 0 360</p> <p>Eglin Test Range PO 01 MAY 02 TBD TBD 70 0 235 764 0 1,069</p>										
<p>(U) Government Furnished Property:</p> <p><u>Contract</u></p> <p><u>Method/Type</u> <u>Award or</u></p> <p><u>Item</u> <u>or Funding</u> <u>Obligation</u> <u>Delivery</u> <u>Total Prior</u> <u>Budget</u> <u>Budget</u> <u>Budget</u> <u>Budget to</u> <u>Total</u></p> <p><u>Description</u> <u>Vehicle</u> <u>Date</u> <u>Date</u> <u>to FY 2001</u> <u>FY 2001</u> <u>FY 2002</u> <u>FY 2003</u> <u>Complete</u> <u>Program</u></p> <p><u>Product Development Property</u></p> <p><u>Support and Management Property</u></p> <p><u>Test and Evaluation Property</u></p>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					10,394	11,991	3,708	7,220	0	33,313
Subtotal Support and Management					538	385	1,338	2,355	0	4,616
Subtotal Test and Evaluation					70	0	360	999	0	1,429
Total Project					11,002	12,376	5,406	10,574	0	39,358

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 8462	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
8462 MALD	5,135	0	5,300	0	0	0	0	0	10,435
<p>(U) <u>A. Mission Description</u> The Miniature Air Launched Decoy (MALD) is a low-cost decoy to stimulate enemy integrated air defenses (IADS) for detection, location, and both lethal and non-lethal suppression activities. MALD transitioned from a DARPA ACTD to USAF program management in December 2000. The program element funds final corrective actions to the ACTD configuration to support ACC's 'Silver Bullet' production.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$5,135 ACTD variant test and analysis (U) \$5,135 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$5,300 Continue MALD SDD efforts to further mature the system. (U) \$5,300 Total</p> <p>(U) <u>B. Project Change Summary</u> MALD transitioned from an ACTD to AF program management in Dec 00. Transition activities included improving engine R&M, quality assurance, and EMI. Following recent flight test failures, MALD experienced significant cost growth and technical difficulties, warranting a full System Design Development (SDD) to meet the need for a low-cost decoy to stimulate and deceive enemy IADS. MALD and a jammer variant played a significant role in the Airborne Electronic Attack AOA and has been identified by the Air Combat Command (ACC) as a critical Global Strike Task Force enabler. Congress designated MALD a special interest item.</p>									
Project 8462			Page 26 of 29 Pages				Exhibit R-2A (PE 0604270F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 8462	
(U) C. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN (PE 27442F)		5,000		10,000					
(U) USAF S&T (PE 63270F)									
(U) OSD (PE 63750D) RDT&E	3,000								
(U) DARPA (PE 62702E) RDT&E									
(U) Congressional Add (PE 27442F)		4,000							
Congress designated MALD FY02 President's budget request and its plus-up as a special interest item									
(U) D. Acquisition Strategy									
Due to technical difficulties and cost growth, the AF restructured the program for full SDD in FY03. MALD will also include the MALD-Jammer variant as a spiral development program. Output from the AEA AOA highlighted MALD and a MALD-Jammer as a significant capability against a modern IADS system. ACC has designated MALD as a critical Global Strike Task Force enabler. Beginning an SDD will incorporate lessons learned from the ACTD/transition period, and will allow spiral development to meet stand-in jamming needs for the combat air forces.									
(U) E. Schedule Profile									
			<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>
			1 2 3 4			1 2 3 4			1 2 3 4
(U) SDD contract award									X
Risk reduction activities from the ACTD will continue through FY02									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270F EW Development				PROJECT 8462			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	ACTD variant test and analysis					5,135		0		0	
(U)	MALD SDD Award									5,300	
(U)	Total					5,135		0		5,300	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	Northrop Grumman - Ryan Aeronautical Center	CPFF	1 Nov 96	TBD	TBD	0	2,890	0	0	0	2,890
	SDD contract award (TBD)	TBD	2Q03	TBD	TBD	0	0	0	5,000		5,000
<u>Support and Management Organizations</u>											
	AAC/WMG					0	669	0	300	0	969
<u>Test and Evaluation Organizations</u>											
	Eglin AFB					0	1,576	0	0	0	1,576
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
<u>Support and Management Property</u>											
<u>Test and Evaluation Property</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
05 - Engineering and Manufacturing Development		0604270F EW Development			8462	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		to FY 2001	FY 2001	FY 2002	FY 2003	Complete
		<u>Total</u>				<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		0	2,890	0	5,000	0
Subtotal Support and Management		0	669	0	300	0
Subtotal Test and Evaluation		0	1,576	0	0	0
Total Project		0	5,135	0	5,300	0
						10,435

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS) 5068
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5068 Joint Tactical Radio System (JTRS)	0	0	17,358	10,984	36,247	8,165	63,839	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 Joint Tactical Radio System (JTRS) is the Department of Defense family of common software-defined programmable radios, that will form the foundation of information radio frequency transmission for Joint Vision 2020. JTRS will eventually replace all existing tactical radios through the Services' migration plans and introduce new capabilities to the warfighter. A common radio architecture and programmable software waveforms will provide joint interoperability for the Services. The JTRS program is built around an open system Software Communications Architecture (SCA), which allows common software waveform applications to be implemented across the family of radios. The Air Force (AF) is establishing an acquisition program office and pursuing as the Service lead for the JTRS Airborne Cluster. The Airborne Cluster will address all Services' requirements for JTRS radios in Airborne Platforms to include the AF. Additional AF JTRS requirements such as; handheld and fixed station will be met by collaboration with other services' JTRS clusters.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$0 No Activity
 (U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**
 (U) \$0 No Activity
 (U) \$0 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$11,977 Initial JTRS airborne and unique Air Force development requirements
 (U) \$5,207 Planning of AF JTRS Developmental and Integrated Test
 (U) \$174 Software development and system integration requirement to port JTRS SCA waveforms
 (U) \$17,358 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS)			PROJECT 5068			
(U) <u>B. Budget Activity Justification</u>										
This program is in budget activity 5 (Engineering Manufacturing and Development) because it supports development and integration of solutions.										
(U) <u>C. Program Change Summary (\$ in Thousands)</u>										
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>		
(U)	Previous President's Budget						0			
(U)	Appropriated Value									
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions									
	b. Small Business Innovative Research									
	c. Omnibus or Other Above Threshold Reprogram									
	d. Below Threshold Reprogram									
	e. Rescissions									
(U)	Adjustments to Budget Years Since FY 2002 PBR						17,358			
(U)	Current Budget Submit/FY 2003 PBR						17,358	TBD		
(U) <u>Significant Program Changes:</u>										
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	AF RDT&E	0	0						Continuing	
(U)	Other APPN	0	0	0	0	0	14,852	121,464	Continuing	Continuing
(U)	PE 27423F Advanced Communications Systems - Operations and Maintenance							13,131	Continuing	Continuing
(U)	PE 27423F Advanced Communications Systems - Aircraft Procurement	0	0	0	1,865	17,652	211,797	381,312	Continuing	Continuing
(U) <u>E. Acquisition Strategy</u>										
All major contracts within this Program Element and BPACs will be awarded after full and open competition.										
Project 5068			Page 2 of 4 Pages			Exhibit R-2 (PE 0604280F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002					
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS)				PROJECT 5068				
(U) <u>F. Schedule Profile</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Airborne Cluster RFP Release										X	
(U)	Airborne Cluster Contract Award										X	
(U)	Start System Deveopment and Demonstration Phase										X	
Project 5068				Page 3 of 4 Pages				Exhibit R-2 (PE 0604280F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE
BUDGET ACTIVITY						PROJECT
05 - Engineering and Manufacturing Development						0604280F JOINT TACTICAL RADIO SYSTEMS (JTRS) 5068
(U) A. Project Cost Breakdown (\$ in Thousands)						
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	AF JTRS development and cluster contribution for AF unique requirement	0	0	11,977		
(U)	Integration test planning	0	0	5,207		
(U)	Software development and system integration to port JTRS SCA waveforms	0	0	174		
(U)	Total	0	0	17,358		
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Total</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Program</u>
	<u>Subtotals</u>					
	Subtotal Product Development					
	Subtotal Support and Management					
	Subtotal Test and Evaluation					
	Total Project					TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604329F Small Diameter Bomb				PROJECT 5006			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
5006	Small Diameter Bomb	25,000	34,653	54,368	79,519	69,401	101,934	202,432	54,309	621,616	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>(U) <u>A. Mission Description</u> Small Diameter Bomb (SDB) is a pre-MDAP Air Force ACAT 1C program providing increased kills per sortie on current and future aircraft platforms. SDB addresses the following warfighter requirements: multiple kills per pass; multiple ordnance carriage; adverse weather operations, precision munitions capability; capability against hardened targets; reduced munitions footprint; increased weapons effectiveness against area targets; real-time target location and/or kill capability versus small/mobile targets; reduced susceptibility to camouflage, concealment and deception (CCD); minimized potential for collateral damage; and reduced susceptibility of munitions to countermeasures. Threshold aircraft is the F-15-E for Phase I and F-16 and B-1 for Phase II. Objective aircraft include the B-2, Joint Strike Fight (JSF), F-22, F-117, B-52, and the Unmanned Combat Aerial Vehicle (UCAV). SDB is currently in Component Advanced Development (CAD) phase with Milestone B planned for the fourth quarter of 2003.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$23,226 Start Component Advanced Development (CAD) phase. CAD is defined as the development of subsystems/components that must be demonstrated before integration into a system. (U) \$1,510 Establish test support. (U) \$50 Establish aircraft integration. (U) \$214 Establish program office and mission support. (U) \$25,000 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$24,874 Continue Component Advanced Development (CAD) phase. CAD is defined as the development of subsystems/components that must be demonstrated before integration into a system. (U) \$150 Continue test support. (U) \$4,065 Continue aircraft integration. (U) \$5,564 Continue program office and mission support.</p>											
Project 5006				Page 1 of 6 Pages				Exhibit R-2 (PE 0604329F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
05 - Engineering and Manufacturing Development	0604329F Small Diameter Bomb	5006			
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2002 (\$ in Thousands) Continued</u>					
(U) \$34,653	Total				
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U) \$39,884	Continue Component Advanced Development (CAD) phase. CAD is defined as the development of subsystems/components that must be demonstrated before integration into a system.				
(U) \$240	Continue test support.				
(U) \$8,873	Continue aircraft integration.				
(U) \$5,371	Continue program office and mission support.				
(U) \$54,368	Total				
(U) <u>B. Budget Activity Justification</u>					
This program is budget activity 5 - Engineering and Manufacturing Development, providing funding for the development of the Small Diameter Bomb.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		11,889	40,000	0	51,889
(U) Appropriated Value		11,889	40,000		51,889
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions			-5,347		
b. Small Business Innovative Research					
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram					
e. Rescissions					
(U) Adjustments to Budget Years Since FY 2002 PBR		13,111		54,368	569,727
(U) Current Budget Submit/FY 2003 PBR		25,000	34,653	54,368	621,616
Project 5006		Page 2 of 6 Pages		Exhibit R-2 (PE 0604329F)	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604329F Small Diameter Bomb			PROJECT 5006		
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>									
(U) <u>Significant Program Changes:</u>									
FY01: SDB received a Congressional add of \$13M.									
FY02: The Defense Appropriations Conference reduced the FY02 appropriation by \$5M.									
FY03: SDB fully funded.									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E (Lab 63601F)	0	2,960	10,615	6,410	1,705				21,690
(U) Missile Procurement, AF, 27327F	0	0	0	0	19,751	56,018	115,660	2,513,570	2,704,999
(U) <u>E. Acquisition Strategy</u>									
All major contracts within this Program Element have been awarded through full and open competition. Two contractors have been selected for the 24 month CAD phase using Firm Fixed Price contracts. Downselect to one contractor will occur prior to System Development and Demonstration (SDD). There will be two SDDs; a fixed target variant and a mobile target variant. SDD will be a Cost Plus Award Fee contract. This approach allows higher risk, less mature technologies to be fielded in an evolutionary fashion. Leverage of Air Force Research Laboratory (AFRL) funding and resources will support the CAD phase.									
The government is buying the SDB based on a contractor-developed, government-approved System Performance Specification (SPS) which will become contractually binding at downselect. The contractor will assume Total System Performance Responsibility (TSPR) as defined in the SPS and warrants system performance for 20 years. Accordingly, the contractor is responsible not only for the design of the missile system, but also for planning and executing the Development Test and Evaluation (DT&E) program to verify the system performance. In its role as facilitator and advisor to the contractor, the government formally arranges and funds the use of government flight test support for DT&E. Although funded by the government, flight test support funds are part of the negotiated commitment between the contractor and the government ensuring the contractor is able to execute the DT&E program according to the scope of the SDD contract.									
(U) <u>F. Schedule Profile</u>									
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE February 2002						
BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT		
05 - Engineering and Manufacturing Development				0604329F Small Diameter Bomb						5006		
(U) <u>F. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Milestone A				*								
(U) CAD Contract Award				*								
(U) Milestone B												X
(U) SDD Contract Award												X
X - Planned Event												
* - Completed Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604329F Small Diameter Bomb				5006		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Major Contracts					23,226		24,874		39,884
(U)	Assoc Contracts					50		4,065		8,873
(U)	Support Contracts					214		4,964		4,671
(U)	In-House					0		600		700
(U)	Test Support					1,510		150		240
(U)	Total					25,000		34,653		54,368
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
CAD Ktr 1 Contract *	FFP	Sep-01	43,992	0	0	11,613	12,437	19,942	0	43,992
CAD Ktr 2 Contract *	FFP	Sep-01	43,992	0	0	11,613	12,437	19,942	0	43,992
SDD 1 Contract	CPAF	1 Qtr 03	114,569	0	0	0	0	0	114,569	114,569
SDD 2 Contract	CPAF	1 Qtr 05	223,348	0	0	0	0	0	223,348	223,348
<u>Support and Management Organizations</u>										
F-22 SPO	PO	Oct-01	N/A	N/A	0	0	3,000	0	0	3,000
F-15 SPO	PO	Oct-01	N/A	N/A	0	0	100	7,300	7,900	15,300
F-16 SPO	PO	Oct-01	N/A	N/A	0	50	520	500	25,000	26,070
B-1 SPO	PO	Oct-01	N/A	N/A	0	0	350	458	81,150	81,958
B-2 SPO	PO	Oct-01	N/A	N/A	0	0	0	0	0	0
Other A/C SPOs	PO	Various	N/A	N/A	0	0	95	615	7,775	8,485
Sverdrup Inc.	C/CPAF	Jan-96, Jun-01	N/A	N/A	0	0	2,602	2,500	12,500	17,602
Project 5006										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										PROJECT
05 - Engineering and Manufacturing Development										5006
PE NUMBER AND TITLE										
0604329F Small Diameter Bomb										
(U) Performing Organizations Continued:										
<u>Support and Management Organizations</u>										
Other	Misc	Various	N/A	N/A	0	214	2,962	2,871	17,628	23,675
<u>Test and Evaluation Organizations</u>										
46 TW	PO	TBD	N/A	N/A	0	1,510	150	240	17,725	19,625
(U) Government Furnished Property:										
<u>Contract</u>										
<u>Method/Type</u>										
<u>Award or</u>										
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
Not Applicable										
<u>Support and Management Property</u>										
Not Applicable										
<u>Test and Evaluation Property</u>										
Not Applicable										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	23,226	24,874	39,884	337,917	425,901
Subtotal Support and Management					0	264	9,629	14,244	151,953	176,090
Subtotal Test and Evaluation					0	1,510	150	240	17,725	19,625
Total Project					0	25,000	34,653	54,368	507,595	621,616

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604421F Counterspace Systems					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	40,053	87,863	74,761	25,981	14,966	Continuing	TBD
A001 Counter Satellite Communications System	0	0	9,187	7,387	3,882	3,973	4,084	Continuing	TBD
A002 Counter Surveillance Reconnaissance System	0	0	23,883	73,717	54,184	5,109	1,963	Continuing	TBD
A003 Rapid Identification Detection and Reporting System (RAIDRS)	0	0	6,983	6,759	16,695	16,899	8,919	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY2003, all the efforts of this new PE were transferred from PE 0603438F, Space Control Technology, in order to begin Budget Activity 5, System Engineering and Manufacturing Development work for project 65A001, Counter Satellite Communications System and 65A002, Counter Surveillance Reconnaissance System, which were FY2002 PB new starts.

In FY2003, Project 65A003, Rapid Attack Identification and Reporting System, includes a new start effort.

(U) **A. Mission Description**
 This program supports the conduct of critical planning, technology development, and system acquisition in support of Air Force space control system development to meet current and future military space control needs. Engineering and manufacturing development (EMD) of counterspace systems will be conducted, capitalizing on the technology development and risk reduction efforts of PE 0603438F, Space Control Technology. This funding supports engineering and manufacturing development of negation systems which include the means to disrupt, deny, degrade, or destroy an adversary's space systems, or the information they provide, which may be used for purposes hostile to U.S. national security interests.
 Also included in these efforts is system development of both active and passive measures to protect U.S. and friendly space systems (satellites, communications links, and supporting ground systems) from natural threats and from enemy attempts to negate or interfere with space operations. This includes development efforts to prevent adversarial ability to use U.S. space systems and services for purposes hostile to U.S. national security interests.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																								
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604421F Counterspace Systems																																																									
<p>(U) <u>B. Budget Activity Justification</u> This program is in Budget Activity 5, Engineering and Manufacturing Development, because it supports the engineering and manufacturing development of counterspace and space control systems.</p>																																																										
<p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:55%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">40,053</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">40,053</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	0	0	TBD	(U) Appropriated Value	0	0			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	0	0			b. Small Business Innovative Research	0	0			c. Omnibus or Other Above Threshold Reprogram	0	0			d. Below Threshold Reprogram	0	0			e. Rescissions	0	0			(U) Adjustments to Budget Years Since FY 2002 PBR	0	0	40,053		(U) Current Budget Submit/FY 2003 PBR	0	0	40,053	TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																						
(U) Previous President's Budget	0	0	0	TBD																																																						
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e. Rescissions	0	0																																																								
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(U) Current Budget Submit/FY 2003 PBR	0	0	40,053	TBD																																																						
<p>(U) <u>Significant Program Changes:</u> FY 2003. Content transferred from PE 0603438F in order to transition into Engineering and Manufacturing Development.</p>																																																										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604421F Counterspace Systems				PROJECT A001	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
A001 Counter Satellite Communications System	0	0	9,187	7,387	3,882	3,973	4,084	Continuing	TBD
Content transferred from PE 0603438F, Space Control Technology in FY03									
(U) A. Mission Description									
This effort supports concept exploration and follow-on system development of a mobile/transportable counter satellite communications system derived from technologies examined in the Space Control Technology program (0603438F) in the area of Offensive Counter Space counter communications. It includes system hardware design and development, software design and integration, testing and procurement of a capability to provide jamming of satellite communications signals in response to USSPACECOM requirements.									
(U) FY 2001 (\$ in Thousands)									
(U) \$0	No Activity								
(U) \$0	Total								
(U) FY 2002 (\$ in Thousands)									
(U) \$0	No Activity								
(U) \$0	Total								
(U) FY 2003 (\$ in Thousands)									
(U) \$8,008	Continue to develop, integrate, test, and field a lightweight, transportable SATCOM Jammer								
(U) \$700	Program Office technical support								
(U) \$479	DT/OT Testing support								
(U) \$9,187	Total								
(U) B. Project Change Summary									
FY 2003. Content transferred from PE 0603438F, Space Control Technology									
Project A001			Page 3 of 11 Pages				Exhibit R-2A (PE 0604421F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604421F Counterspace Systems				PROJECT A001		
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E										
(U) Other APPN										
(U) D. Acquisition Strategy										
All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.										
(U) E. Schedule Profile										
		<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>				
		1	2	3	4	1	2	3	4	1
(U) Counter Communications Technology Demo		*								
(U) Contract award for Lightweight SATCOM Jammer system development							X			
(U) Lightweight SATCOM Jammer system development							X			
(U) Deliver 1st Basic System									X	
(U) Operational Assessment - 1st system									X	
(U) Training and Tech Order Development									X	
* = Completed X= Scheduled										
Note: FY 2001 and FY 2002 content executed in PE0603438F, Space Control Technology.										
Project A001			Page 4 of 11 Pages				Exhibit R-2A (PE 0604421F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604421F Counterspace Systems				PROJECT A001	
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Develop, integrate, test, and field SATCOM Jammer capability					0		0		8,008
(U)	Program Office technical support (FFRDC)					0		0		700
(U)	DT/OT testing support					0		0		479
(U)	Total					0		0		9,187
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
FFRDC, Various SETA, SPO	TBD	TBD	TBD	TBD	0	0	0	8,008	Continuing	TBD
<u>Support and Management Organizations</u>										
SMC	TBD	TBD	TBD	TBD	0	0	0	700	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
AFOTEC	TBD	TBD	TBD	TBD	0	0	0	479	Continuing	TBD
					<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	0	0	8,008	TBD	TBD
Subtotal Support and Management					0	0	0	700	TBD	TBD
Subtotal Test and Evaluation					0	0	0	479	TBD	TBD
Total Project					0	0	0	9,187	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604421F Counterspace Systems				PROJECT A002	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
A002 Counter Surveillance Reconnaissance System	0	0	23,883	73,717	54,184	5,109	1,963	Continuing	TBD
Content transferred from PE 0603438F, Space Control Technology, in order to begin system Engineering and Manufacturing Development begun as a new start in FY02.									
(U) A. Mission Description									
This effort supports concept exploration and follow-on system development of a mobile/transportable counter space based surveillance reconnaissance capability derived from technologies examined in the Space Control Technology program (0603438F). It includes system hardware design and development, software design and integration, and testing and procurement to provide a capability to counter space based systems in response to USSPACECOM requirements.									
(U) FY 2001 (\$ in Thousands)									
(U) \$0	No Activity								
(U) \$0	Total								
(U) FY 2002 (\$ in Thousands)									
(U) \$0	No Activity								
(U) \$0	Total								
(U) FY 2003 (\$ in Thousands)									
(U) \$19,083	Continue engineering and manufacturing development of a Counter Surveillance Reconnaissance system. Includes acquisition of an EMD unit. Begins source selection and award of contract. Will incorporate System Requirements Review (SRR) and potentially a Preliminary Design Review in late FY03.								
(U) \$3,500	Continue specific technology development for the Counter Surveillance Reconnaissance System.								
(U) \$500	Provide support for component field testing.								
(U) \$800	Continue development and implementation of modeling and simulation codes specific to Counter Surveillance Reconnaissance threats. Includes vulnerability analysis of these threats.								
(U) \$23,883	Total								
(U) B. Project Change Summary									
FY 2003. Content transferred from PE 0603438F, Space Control Technology									
Project A002			Page 6 of 11 Pages				Exhibit R-2A (PE 0604421F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604421F Counterspace Systems				PROJECT A002		
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E								Continuing		
(U) Other APPN								Continuing		
(U) D. Acquisition Strategy										
All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.										
(U) E. Schedule Profile										
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4	
(U) Complete Counter Surveillance Reconnaissance Military Utility Analysis						*				
(U) Pre-Milestone B System Development New Start							X			
(U) Milestone B for Counter Surveillance Reconnaissance									X	
(U) Operational Requirements Document Completion									X	
(U) Counter Surveillance Reconnaissance System Source Selection										X
(U) Counter SR system contract award										X
* = Completed Event X = Scheduled Event										
Note: Content in FY 2002 executed in PE 0603438F, Space Control Technology										
Project A002			Page 7 of 11 Pages				Exhibit R-2A (PE 0604421F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604421F Counterspace Systems				A002		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Acquisition of Counter SR EMD unit					0		0		19,083
(U)	Technology Development					0		0		3,500
(U)	Support for component field testing					0		0		500
(U)	Develop and implement modeling and simulation codes					0		0		800
(U)	Total					0		0		23,883
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
	FFRDC, Various SETA, SPO	TBD	TBD	TBD	0	0	0	22,583	Continuing	TBD
<u>Support and Management Organizations</u>										
	SMC	TBD	TBD	TBD	0	0	0	800	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
	AFOTEC	TBD	TBD	TBD	0	0	0	500	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development				0	0	0	22,583	TBD	TBD
	Subtotal Support and Management				0	0	0	800	TBD	TBD
	Subtotal Test and Evaluation				0	0	0	500	TBD	TBD
	Total Project				0	0	0	23,883	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604421F Counterspace Systems				PROJECT A003		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
A003	Rapid Identification Detection and Reporting System (RAIDRS)	0	0	6,983	6,759	16,695	16,899	8,919	Continuing	TBD
<p>FY2003: Content transferred from PE 0603438F, Space Control Technology, in order to begin system Engineering and Manufacturing Development.</p> <p>FY2003: A new task is being initiated with this President's Budget: - Rapid Attack Identification and Threat Reporting System (RAIDRS) system development.</p> <p>(U) <u>A. Mission Description</u> This effort supports concept exploration, architecture development and engineering and manufacturing development to provide attack warning, threat identification and characterization, and rapid mission impact assessments of U.S. space systems. The concepts explored will investigate the technical architecture, operational concept, support concept development, training, verification (test), and deployment of a Rapid Attack Identification Detection and Reporting System (RAIDRS).</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$4,483 Initiate multiple contract awards for continued concept definition of a Rapid Attack Identification Detection and Reporting System. Development of an Attack Warning system architecture. (U) \$1,500 Begin pre-Milestone B activities. Development of documentation to prepare for Milestone B decision in 4th quarter. (U) \$1,000 Continue system specific risk reduction efforts of advanced technologies. (U) \$6,983 Total</p> <p>(U) <u>B. Project Change Summary</u> FY 2003. Content transferred from PE 0603438F, Space Control Technology</p>										
Project A003			Page 9 of 11 Pages				Exhibit R-2A (PE 0604421F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604421F Counterspace Systems				PROJECT A003		
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) AF RDT&E										
(U) Other APPN										TBD
(U) D. Acquisition Strategy										
All contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.										
(U) E. Schedule Profile										
			<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
			1	2	3	4	1	2	3	4
(U) Potential attack reporting solutions and architecture studies complete								X		
(U) Attack Warning concept definition									X	
(U) RAIDRS Milestone Decision										X
(U) Begin development of Attack Warning architecture								X		
(U) Attack Warning architecture defined										X
X = Scheduled Event										
Note: FY2002 content executed in PE0603438F, Space Control Technology										
Project A003			Page 10 of 11 Pages				Exhibit R-2A (PE 0604421F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604421F Counterspace Systems				A003		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Concept definition of a Rapid Attack Identification Decton and Reporting System					0		0		4,483
(U)	Pre-Milestone B activities					0		0		1,500
(U)	System risk reduction activities of advanced technologies					0		0		1,000
(U)	Total					0		0		6,983
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
	FFRDC, Various SETA, SPO	TBD	TBD	TBD	0	0	0	5,483	Continuing	TBD
<u>Support and Management Organizations</u>										
	SMC	TBD	TBD	TBD	0	0	0	1,500	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
<u>Subtotals</u>					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	Subtotal Product Development				0	0	0	5,483	TBD	TBD
	Subtotal Support and Management				0	0	0	1,500	TBD	TBD
	Subtotal Test and Evaluation									
	Total Project				0	0	0	6,983	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604441F Space Based Infrared Systems (SBIRS) High EMD				PROJECT 3616		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3616	SBIRS High Element EMD	550,144	438,720	814,927	620,348	445,606	302,997	308,136	578,800	5,769,700
Quantity of RDT&E Articles		0	0	1	1	0	1	1	0	4
<p>(U) A. Mission Description</p> <p>(U) The Space-Based Infrared System's (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces or its allies. SBIRS will incorporate new technologies to enhance detection; improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches; and provide critical mid-course tracking and discrimination data for national and theater missile defense. SBIRS also supports Battlespace Characterization and Technical Intelligence. The SBIRS System provides increased detection and tracking performance in order to meet requirements in US Space Command's Capstone Requirements Document and Air Force Space Command's Operational Requirements Document. SBIRS will consist of satellites in Geosynchronous Orbits (GEO), Highly Elliptical Orbits (HEO) and Low Earth Orbits (LEO) and an integrated centralized ground station serving all SBIRS space elements and Defense Support Program (DSP) satellites. This Program Element funds the GEO & HEO portions of SBIRS with their associated ground elements.</p> <p>(U) FY 2001 (\$ in Thousands)</p> <p>(U) \$530,069 Continued EMD contracts for Space and Ground segment development (includes GFE, GEO Development, GEO 1&2 build, GEO 1&2 integration and test, HEO development/production, Ground System development, System Engineering and Program Management, and Host SPO support).</p> <p>(U) \$3,794 Continued System Program Office Support.</p> <p>(U) \$16,281 Continued Technical analysis and independent verification and validation of contractor by FFRDC.</p> <p>(U) \$550,144 Total</p>										
Project 3616			Page 1 of 6 Pages				Exhibit R-2 (PE 0604441F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																								
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based Infrared Systems (SBIRS) High EMD	PROJECT 3616																																								
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$414,451 Continued EMD contracts for Space and Ground segment development (includes GFE, continued GEO Development, GEO 1&2 integration, assembly and test, HEO development/production, HEO 1 integration, assembly, and test, Ground System development, System Engineering and Program Management, Increment 1 Pre-operations support and Host SPO support).</p> <p>(U) \$6,156 Continued System Program Office Support.</p> <p>(U) \$18,113 Continued technical analysis and independent verification and validation of contractor by FFRDC.</p> <p>(U) \$438,720 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$789,188 Continue EMD contracts for Space and Ground segment development (includes GFE, continued GEO Development, GEO 1&2 integration, assembly and test, HEO development/production, HEO 2 integration, assembly, and test, Ground System development, System Engineering and Program Management, Increment 1 Pre-operations support and Host SPO support).</p> <p>(U) \$6,170 Continue System Program Office Support.</p> <p>(U) \$19,569 Continue technical analysis and independent verification and validation of contractor by FFRDC.</p> <p>(U) \$814,927 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>(U) This program is assigned to Budget Activity 5, Engineering and Manufacturing Development because it funds the EMD activities for the SBIRS High program.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">563,967</td> <td style="text-align: right;">405,229</td> <td style="text-align: right;">334,753</td> <td style="text-align: right;">5,197,385</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">569,188</td> <td style="text-align: right;">445,229</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-3,984</td> <td style="text-align: right;">-6,509</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-13,148</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">-676</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	563,967	405,229	334,753	5,197,385	(U) Appropriated Value	569,188	445,229			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-3,984	-6,509			b. Small Business Innovative Research	-13,148				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-676			
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Project 3616	Page 2 of 6 Pages	Exhibit R-2 (PE 0604441F)																																								

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002			
BUDGET ACTIVITY			PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development			060441F Space Based Infrared Systems (SBIRS) High EMD				3616			
(U) C. Program Change Summary (\$ in Thousands) Continued										
			<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>				
	e. Rescissions		-1,236							
(U)	Adjustments to Budget Years Since FY 2002 PBR			0	480,174					
(U)	Current Budget Submit/FY 2003 PBR		550,144	438,720	814,927			5,769,700		
(U)	<u>Significant Program Changes:</u> (FY2001-2002/2003) \$2.36M increase in 'System Program Office Support' reflect fact-of-life adjustments for overall SPO support. (FY 2003) Funds transferred from SBIRS High procurement funds in order to mitigate cost and schedule risk to the program.									
(U) D. Other Program Funding Summary (\$ in Thousands)										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Missile Procurement (PE 0305915F, BA-05, P-30)	0	0	0	97,500	500,754	0	7,254	32,844	638,352
(U)	Other Procurement (PE 0305915F, BA-03, P-55)	0	0	0	0	0	693	1,185	0	1,878
(U)	Related RDT&E:									
(U)	PE 0305911F - DSP (BA 07, R-187)	12,779	6,142	2,090	0	0	0	0	0	1,922,136
(U) E. Acquisition Strategy										
The pre-EMD SBIRS contracts were competed in full and open competition. Two contracts were awarded to Lockheed/Loral/Aerojet and Hughes/TRW in 1995 for the pre-EMD phase. A single contract was awarded to Lockheed Martin in 1996 for the EMD phase.										
(U) F. Schedule Profile										
			<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based Infrared Systems (SBIRS) High EMD	PROJECT 3616
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(U) **F. Schedule Profile Continued**

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Payload Critical Design Reviews (2)			*	*								
(U) Ground Inc-1- Consolidated DSP Stations					*							
(U) Ground Inc-2 Critical Design Review				*								
(U) GEO Critical Design Review				*								
(U) HEO Payload #1 Delivery									X			
(U) HEO Payload #2 Delivery (FY04)												
(U) GEO Satellite #1 Delivery (FY06)												
(U) GEO Satellite #2 Delivery (FY07)												
*-Completed Event X-Planned Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development				0604441F Space Based Infrared Systems (SBIRS) High EMD			3616			
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	EMD Contract					530,069		414,451		789,188
(U)	System Program Office Support					3,794		6,156		6,170
(U)	Aerospace Corp					16,281		18,113		19,569
(U)	Total					550,144		438,720		814,927
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
	LMMS & Hughes (Pre-EMD)	C/CPFF	Aug 95	207,880	207,880	207,880			0	207,880
	LMMS/Other (EMD)	C/CPAF	Nov 96	4,652,110	4,652,110	1,363,472	530,069	414,451	789,188	2,133,754
	SBIRS Pre-EMD Contract			4,780	4,780	4,780			0	4,780
	Adjustment									
	Technology	Various	Sep 95	11,600	11,600	11,600			0	11,600
	Phenomenology	Various	Sep 95	17,350	17,350	17,350			0	17,350
	Sandia Natl Lab (Cobra Brass)	Various	Sep 95	10,000	10,000	10,000			0	10,000
<u>Support and Management Organizations</u>										
	Aerospace Corp	MORD	Sep 95	237,395	237,395	62,062	16,281	18,113	19,569	94,283
	Prgm Mgmt Supt	Various	Sep 95	76,848	76,848	32,854	3,794	6,156	6,170	27,874
<u>Test and Evaluation Organizations</u>										
Not Applicable										
Project 3616				Page 5 of 6 Pages				Exhibit R-3 (PE 0604441F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604441F Space Based Infrared Systems (SBIRS) High EMD	PROJECT 3616
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(U) **Government Furnished Property:**

<u>Item</u> <u>Description</u>	<u>Contract</u> <u>Method/Type</u> <u>or Funding</u> <u>Vehicle</u>	<u>Award or</u> <u>Obligation</u> <u>Date</u>	<u>Delivery</u> <u>Date</u>	<u>Total Prior</u> <u>to FY 2001</u>	<u>Budget</u> <u>FY 2001</u>	<u>Budget</u> <u>FY 2002</u>	<u>Budget</u> <u>FY 2003</u>	<u>Budget to</u> <u>Complete</u>	<u>Total</u> <u>Program</u>
<u>Product Development Property</u>									
Not Applicable									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				1,615,082	530,069	414,451	789,188	2,133,754	5,482,544
Subtotal Support and Management				94,916	20,075	24,269	25,739	122,157	287,156
Subtotal Test and Evaluation									
Total Project				1,709,998	550,144	438,720	814,927	2,255,911	5,769,700

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604442F Space Based Infrared Systems (SBIRS)				PROJECT 4598		
				Low						
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4598	SBIRS Low Element EMD	233,546	0	0	0	0	0	0	0	488,235
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
<p>Note: In FY2002, SBIRS Low efforts were transferred from PE 0604442F, Project 4598, Space Based Infrared Systems (SBIRS) Low to the Ballistic Missile Defense Organization (BMDO) (now the Missile Defense Agency), PE0603884C.</p> <p>(U) <u>A. Mission Description</u> (U) The Space-Based Infrared System's (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces or its allies. SBIRS will incorporate new technologies to enhance detection; improve reporting of ICBM, SLBM and tactical ballistic missiles; and provide critical mid-course tracking and discrimination data for national and theater missile defense. This system will provide increased performance in order to meet requirements in US Space Command's Capstone Requirements Document and Air Force Space Command's Operational Requirements Document. SBIRS will consist of satellites in Geosynchronous Earth Orbits (GEO), Highly Elliptical Orbits (HEO) and Low Earth Orbits (LEO) and an integrated centralized ground station serving all SBIRS space elements and Defense Support Program (DSP) satellites. This PE funds the SBIRS Low Concept and Technology Development (C&TD) activities and leads to System Development and Demonstration (SD&D). SBIRS Low is the LEO component of SBIRS.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$172,000 C&TD Contracts (38 month FFP competitive contracts between two contractors to design a system capable of meeting the SBIRS Low requirements described in the SBIRS Operational Requirements Document). (U) \$23,751 Provided C&TD Support (Includes studies, integration into SBIRS Increment System-of-Systems and modeling and simulation) (U) \$13,240 Accomplished other risk reduction activities (Includes cryocoolers, batteries, algorithms, rad hard parts, phenomenology, optical filters, MSX data reduction, contamination control, focal plane arrays (visible and long-wave), and survivability) (U) \$24,555 Support Program Office activities (U) \$233,546 Total</p>										
Project 4598				Page 1 of 5 Pages				Exhibit R-2 (PE 0604442F)		

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604442F Space Based Infrared Systems (SBIRS) Low		PROJECT 4598		
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2002 (\$ in Thousands)</u>					
(U) \$0	No Activity - The Program has been transferred to BMDO, now Missile Defense Agency (MDA), in FY02.				
(U) \$0	Total				
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U) \$0	No Activity - The Program has been transferred to BMDO (now MDA) in FY02.				
(U) \$0	Total				
(U) <u>B. Budget Activity Justification</u>					
(U) This Program Element is in Budget Activity 5, EMD because it funds Concept and Technology Development efforts for the Low Earth Orbit (LEO) portion of the SBIRS program.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	
(U) Previous President's Budget	238,810	0	0	493,499	
(U) Appropriated Value	241,021	0			
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions	-1,687				
b. Small Business Innovative Research	-5,265				
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram					
e. Rescissions	-523				
(U) Adjustments to Budget Years Since FY 2002 PBR					
(U) Current Budget Submit/FY 2003 PBR	233,546	0	0	488,235	
(U) <u>Significant Program Changes:</u>					
(U) (FY02) SBIRS Low RDT&E funds transfered to BMDO (now Missile Defense Agency). SBIRS Low program is re-addressing its acquisition strategy as directed by the FY02 National Defense Appropriations Conference Report.					
Project 4598		Page 2 of 5 Pages		Exhibit R-2 (PE 0604442F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development				0604442F Space Based Infrared Systems (SBIRS)				4598			
				Low							
(U) D. Other Program Funding Summary (\$ in Thousands)											
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U)	PE 0604441F SBIRS High EMD (RDT&E, BA 05, R - 67)	550,144	445,229	814,927	620,348	445,606	302,997	308,136	578,800	5,769,700	
(U)	PE 0305915F - SBIRS High Procurement (MPAF, BA-5, P-30)	0	0	0	97,500	500,754	0	7,254	0	605,508	
(U)	PE 0305911F - DSP (RDT&E, BA-07, R-187)	12,779	6,142	2,090	0	0			0	1,922,717	
(U) E. Acquisition Strategy											
The SBIRS program is managed through a single consolidated System Program Office (SPO) at the Space and Missile Systems Center, Los Angeles Air Force Base, CA. SBIRS Low began C&TD activities in August 1999 with the award of two firm fixed price contracts. FY02 budget transferred to BMDO (now MDA).											
(U) F. Schedule Profile											
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U)	System Design Reviews				*						
(U)	FY02 budget transferred to BMDO (now MDA)							*			
	* - Completed Event X - Planned Event										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development				0604442F Space Based Infrared Systems (SBIRS)			4598			
				Low						
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	CD&D Contracts (Includes Study CLINs)					172,000		0		0
(U)	Provided CD&D Support (Includes studies, integration into SBIRS Increment System-of-Systems and modeling and simulation)					29,016		0		
(U)	Accomplished other risk reduction activities (Includes cryocoolers, batteries, algorithms, rad hard parts, phenomenology, optical filters, MSX data reduction, contamination control, focal plane arrays (visible and long-wave), and survivability)					7,975		0		
(U)	Supported Program Office activities					24,555		0		
(U)	Total					233,546		0		0
FY02 budget transferred to BMDO (now MDA).										
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
TRW	C/FFP	Aug 99			97,000	86,000				183,000
Spectrum Astro	C/FFP	Aug 99			97,000	86,000				183,000
C&TD Support	Various	Various			17,645	29,016				46,661
Other Risk Reduction Act	Various	Various			22,126	7,975				30,101
FY02 budget transferred to BMDO (now MDA).										
<u>Support and Management Organizations</u>										
Program Support	Various	Various	N/A	N/A	20,918	24,555				45,473
<u>Test and Evaluation Organizations</u>										
Not Applicable										
Project 4598				Page 4 of 5 Pages				Exhibit R-3 (PE 0604442F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development				0604442F Space Based Infrared Systems (SBIRS)				4598	
				Low					
(U) Government Furnished Property:									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
Not Applicable									
<u>Support and Management Property</u>									
Not Applicable									
<u>Test and Evaluation Property</u>									
Not Applicable									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				233,771	208,991				442,762
Subtotal Support and Management				20,918	24,555				45,473
Subtotal Test and Evaluation									
Total Project				254,689	233,546				488,235
FY02 budget transferred to BMDO (now MDA).									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604479F MILSTAR LDR/MDR Sat Comm				PROJECT 5010			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
5010	Milstar Sat Comm Sys	224,592	228,722	148,936	1,415	1,409	0	0	0	9,706,890	
	Quantity of RDT&E Articles	2	1	0	0	0	0	0	0	6	
<p>(U) <u>A. Mission Description</u> Milstar is a joint service program to develop and acquire extremely high frequency (EHF) satellites; a satellite mission control segment; and new or modified Army, Navy, and Air Force communication terminals for survivable, jam-resistant, worldwide, secure communications to strategic and tactical war fighters. Milstar I Satellites 1 and 2 have a low data rate (LDR) payload that supports strategic and tactical forces with emphasis on highly survivable, minimum essential communications. Milstar II Satellites 3 through 6 have both LDR and medium data rate (MDR) payloads with increased tactical capabilities, including higher data rates to mobile forces and nulling that will neutralize close-in enemy jammers. Satellite 3 did not reach its proper orbit and the satellite was placed in its final non-interference orbit and shutdown. Milstar satellite 4 was launched successfully on 27 February 2001 and satellite 5 was launched successfully on 15 January 2002. Milstar satellites 6 will launch in FY03. Milstar Terminals are funded under Program Element 0303601F.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$158,838 Milstar II</p> <p>(U) \$0 Delivered, launched and performed on-orbit checkout and testing for Satellite 4</p> <p>(U) \$0 Satellite 5 integration, test and delivery</p> <p>(U) \$0 Satellite 6 integration and test</p> <p>(U) \$0 Implemented ECPs as needed based on operational requirements</p> <p>(U) \$32,103 Milstar I/II Satellite Engineering</p> <p>(U) \$0 Satellites 4 and 5 technical launch and pre-launch support</p> <p>(U) \$0 Continued Satellites 1, 2 and 4 on-orbit operations support</p> <p>(U) \$0 Continued LDR and MDR technical support</p> <p>(U) \$20,423 Communications Planning Element</p> <p>(U) \$0 Continued ACMS software Build 2 incremental development</p> <p>(U) \$0 Continued maintenance of fielded communications planning software</p> <p>(U) \$0 Developed proposed web-based new technology system</p>											
Project 5010				Page 1 of 7 Pages				Exhibit R-2 (PE 0604479F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604479F MILSTAR LDR/MDR Sat Comm	5010
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
(U) \$13,228	Basic Program Office support	
(U) \$224,592	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$156,068	Milstar II contract effort includes Satellites 5 launch and on-orbit checkout and testing. Complete Satellite 6 factory test and integration. Also continue component integration support (including Mission Control System service life extension) and implementation of ECPs as operationally required.	
(U) \$38,830	Milstar I/II Satellite Engineering contract effort includes launch and pre-launch technical support for Satellites 5 and continued on-orbit operations support for Satellites 1, 2 and 4, as well as continued LDR and MDR technical support.	
(U) \$18,107	Communications Planning Element includes software development and maintenance.	
(U) \$0	ACMS development, testing, training and certification	
(U) \$0	MCPTi maintenance	
(U) \$4,600	Joint Integrated SATCOM Technology (JIST) development	
(U) \$11,117	Basic Program Office support	
(U) \$228,722	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$83,941	Milstar II contract effort includes Satellite 6 launch and on-orbit checkout and testing. Also continue component integration support (including Mission Control System service life extension) and implementation of ECPs as operationally required.	
(U) \$48,728	Milstar I/II Satellite Engineering contract effort includes launch and pre-launch technical support for Satellite 6 and continued on-orbit operations support for Satellites 1, 2, 4, and 5 as well as continued LDR and MDR technical support	
(U) \$8,216	Communications Planning Element	
(U) \$8,051	Program office Support	
(U) \$148,936	Total	
(U) <u>B. Budget Activity Justification</u>		
This program is in Budget Activity 5, Engineering and Manufacturing Development since it funds Milstar II development.		
Project 5010	Page 2 of 7 Pages	Exhibit R-2 (PE 0604479F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE		
							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development				0604479F MILSTAR LDR/MDR Sat Comm			5010		
(U) C. Program Change Summary (\$ in Thousands)									
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>	
(U)	Previous President's Budget			235,164	232,084	110,363			
(U)	Appropriated Value			237,341	232,184				
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions			-1,661	-3,462				
	b. Small Business Innovative Research			-13,573					
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram			3,000					
	e. Rescissions			-515					
(U)	Adjustments to Budget Years Since FY 2002 PBR					38,573			
(U)	Current Budget Submit/FY 2003 PBR			224,592	228,722	148,936		9,706,890	
(U) Significant Program Changes:									
The FY03 adjustment funds increased contract costs due to cumulative slips from FY98 through FY01 in the Titan IV B launch schedule. Flight 3 failure caused an Acquisition Program Baseline schedule breach for MDR IOT&E and IOC II, and a performance breach of FOC. Program Deviation Report was sent to the Defense Acquisition Executive and final Acquisition Program Baseline update is being coordinated.									
(U) D. Other Program Funding Summary (\$ in Thousands)									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
(U)	Other APPN								
(U)	OPAF, PE 0303600F	0	0	5,597	8,357	2,204		0	16,158
	Wideband Gapfiller System, Project #836780, CCS-C								
(U)	Related RDT&E:								
(U)	RDT&E - AF, PE 0603854F,	9,547	17,060	18,013	41,208	20,621	14,845	0	121,294
	Wideband Gapfiller System, Project # 644870, CCS-C, BA-4, R-49								
Project 5010									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604479F MILSTAR LDR/MDR Sat Comm				PROJECT 5010			
(U) D. Other Program Funding Summary (\$ in Thousands)											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) RDT&E - AF, PE 0303601F, MILSATCOM Terminals, BA-7, R-164	16,016	40,431	72,712	125,932	159,464	171,562	152,527				
(U) RDT&E - AF, PE 0603430F, Advanced EHF MILSATCOM, BA-4, R-39	229,763	479,659	825,783	617,688	538,196	216,779	160,318	504,629	3,837,743		
(U) RDT&E - AF, PE 0603432F, Polar Satellite Communications Program (Polar Adjunct), BA-4, R-40	29,229	18,539	9,577	5,717	981			0	285,116		
(U) E. Acquisition Strategy											
Lockheed Martin was awarded a sole source contract to develop 6 Milstar protected communication satellites. The first two LDR satellites were launched in FY94 and FY95. Satellite 3 launch in FY99 was to provide the first LDR/MDR on-orbit capability, but the satellite did not reach its proper orbit due to a Centaur upper stage failure. Satellite 4 was launched successfully on 27 February 2001 and satellite 5 was launched successfully on 15 January 2002. The last LDR/MDR satellite 6 will be launched in FY03.											
(U) F. Schedule Profile											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) Deliver ACMS Build 2, Inc 1					*						
(U) Deliver ACMS Build 2, Inc 2								X			
(U) Satellite 4 Launch					*						
(U) MDR IOT&E (TBD)											
(U) IOC II (TBD)											
(U) Satellite 5 Launch							*				
(U) Satellite 6 Launch									X		
Project 5010	Page 4 of 7 Pages							Exhibit R-2 (PE 0604479F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002					
BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT					
05 - Engineering and Manufacturing Development	0604479F MILSTAR LDR/MDR Sat Comm						5010					
(U) <u>F. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) FOC (TBD)												
*=completed event x=planned event												
Note: MDR IOT&E, IOC II, and FOC milestones are under review as a result of failure of satellite #3 to achieve operational orbit.												
Project 5010			Page 5 of 7 Pages				Exhibit R-2 (PE 0604479F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604479F MILSTAR LDR/MDR Sat Comm				5010		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Milstar II					158,838		156,068		83,941
(U)	Milstar I/II Satellite Engineering					32,103		38,830		48,728
(U)	Communications Planning Element					20,423		22,707		8,216
(U)	Basic Program Office Support					13,228		11,117		8,051
(U)	Total					224,592		228,722		148,936
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
LMSC (Milstar I) Sats 1,2,3L]	C/CPAF	Jun 83	4,727,752	4,727,752	4,727,752	0			0	4,727,752
LMSC (Milstar II) [Sats 3M,	SS/CPAF	Oct 92/Nov	3,901,743	3,901,743	3,537,433	143,489	142,307	77,339	1,175	3,901,743
4, 5, 6]		94								
LMSC (Satellite Engineering)	SS/CPAF	Sep 97	201,921	201,921	82,260	32,103	38,830	48,728	0	201,921
SPAWAR(ACMS)	SS/MIPR	Various	N/A	173,803	126,657	16,223	22,707	8,216	0	173,803
LINCOM	SS/CPAF	Various	N/A	38,481	30,022	3,227	3,466	1,766	0	38,481
Lincoln Lab	SS/MIPR	Various	N/A	34,952	29,719	1,516	2,000	1,667	0	34,902
Miscellaneous	Various	Various	N/A	260,648	234,339	14,806	8,295	3,169	39	260,648
<u>Support and Management Organizations</u>										
Aerospace	SS/CPFF/AF	Various	204,846	204,846	175,726	11,417	9,347	7,094	1,262	204,846
Miscellaneous	Various	Various	162,794	162,794	157,908	1,811	1,770	957	348	162,794
<u>Test and Evaluation Organizations</u>										
None.										
Project 5010				Page 6 of 7 Pages				Exhibit R-3 (PE 0604479F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE			
							February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development				0604479F MILSTAR LDR/MDR Sat Comm			5010			
(U) Government Furnished Property:										
	<u>Contract</u>	<u>Award or</u>								
<u>Item</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
None.										
<u>Support and Management Property</u>										
None.										
<u>Test and Evaluation Property</u>										
None.										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					8,768,182	211,364	217,605	140,885	1,214	9,339,250
Subtotal Support and Management					333,634	13,228	11,117	8,051	1,610	367,640
Subtotal Test and Evaluation										
Total Project					9,101,816	224,592	228,722	148,936	2,824	9,706,890

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	9,422	3,800	9,160	19,306	3,703	7,150	6,732	Continuing	TBD
3133 Bombs & Fuzes	8,109	2,450	7,766	17,889	2,261	5,681	5,234	Continuing	TBD
4696 Armament Standardization Program	1,183	1,217	1,258	1,277	1,298	1,320	1,343	Continuing	TBD
5613 Containers	130	133	136	140	144	149	155	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	Continuing	TBD

In FY02, Hard Target Smart Fuze (HTSF) received \$3.0M as part of the Defense Emergency Relief Fund (DERF). Funding was used to support the engineering and manufacturing development effort of the HTSF program in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.

(U) **A. Mission Description**
 The Armament Ordnance Development program provides for initial and continuing development of munition equipment for support and operational use.

Bombs and Fuzes: This project develops and improves conventional bombs and fuzes. It currently includes the development of the Hard Target Smart Fuze (HTSF). Miniaturized Munitions Capability (MMC) continues the Concept Exploration phase in this project. Initial MMC funding was used to explore concepts to meet CAF MNS 304-97, Miniaturized Munitions Capability'. The Insensitive Munitions (IM) new start effort will initiate the development of an explosive fill to make conventional weapons insensitive to unplanned stimuli for MK-80 series bombs.

Armament Standardization/Control/Munitions Material Handling Equipment (MMHE): This continuing project develops and improves the standardization and commonality of munitions handling and armament equipment to preclude duplication. This project's efforts are limited to the study, design, and development, of MMHE and armament control systems. Procurement will be performed and funded by the applicable weapons system project.

Containers: This project funds the operation of the tri-service Container Design Retrieval System (CDRS). This maintains a container database to preclude

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																								
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development		PE NUMBER AND TITLE 0604602F Armament/Ordnance Development																																																								
<p>(U) <u>A. Mission Description Continued</u> proliferation and duplication of munitions containers. It also supports organic container design, acquisition transportation, prototyping, testing capabilities, as well as the Joint Ordnance Commander's Working Group (JOCG) for Packaging, Handling, and Loading.</p> <p>(U) <u>B. Budget Activity Justification</u> This program is in budget activity 5 - Engineering and Manufacturing Development because the projects support the EMD phase of several munitions related items and functions.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">9,786</td> <td style="text-align: right;">3,838</td> <td style="text-align: right;">6,952</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">21,876</td> <td style="text-align: right;">3,838</td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-153</td> <td style="text-align: right;">-38</td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-348</td> <td></td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: right;">-11,889</td> <td></td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">-16</td> <td></td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-48</td> <td></td> <td></td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: right;">2,208</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">9,422</td> <td style="text-align: right;">3,800</td> <td style="text-align: right;">9,160</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> FY03: \$2.2M funding was increased to continue development of the Hard Target Smart Fuze and Insensitive Munitions.</p>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	9,786	3,838	6,952	TBD	(U) Appropriated Value	21,876	3,838		TBD	(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-153	-38		TBD	b. Small Business Innovative Research	-348			TBD	c. Omnibus or Other Above Threshold Reprogram	-11,889			TBD	d. Below Threshold Reprogram	-16			TBD	e. Rescissions	-48			TBD	(U) Adjustments to Budget Years Since FY 2002 PBR			2,208		(U) Current Budget Submit/FY 2003 PBR	9,422	3,800	9,160	TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																						
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c. Omnibus or Other Above Threshold Reprogram	-11,889			TBD																																																						
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(U) Current Budget Submit/FY 2003 PBR	9,422	3,800	9,160	TBD																																																						
Page 2 of 14 Pages		Exhibit R-2 (PE 0604602F)																																																								

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT 3133			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
3133	Bombs & Fuzes	8,109	2,450	7,766	17,889	2,261	5,681	5,234	Continuing	TBD	
<p>In FY02, Hard Target Smart Fuze (HTSF) received \$3.0M as part of the Defense Emergency Relief Fund (DERF). Funding was used to support the engineering and manufacturing development effort of the HTSF program in support of OPERATION ENDURING FREEDOM. This funding is not reflected in the FY02 program total.</p> <p>(U) <u>A. Mission Description</u> Bombs and Fuzes: This project develops and improves conventional bombs and fuzes including the development of the Hard Target Smart Fuze (HTSF). The HTSF is a layer counting and void sensing fuze that will be used with air-to-ground penetrator weapons. Miniaturized Munitions Capability (MMC) continues the Concept Exploration phase in this project. Insensitive Munitions development is a new start effort to initiate development of an insensitive munitions explosive fill to make conventional weapons insensitive to unplanned stimuli as set forth in DoD Regulation 5000.2-R.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$7,118 Complete Hard Target Smart Fuze (HTSF) detailed design and continue HTSF contractor test and evaluation (CT&E) (U) \$991 Develop a cast ductile bomb (congressional add) (U) \$8,109 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$2,450 Begin Insensitive Munitions (IM) development effort. Activities to include, but not limited to, reformulation development of insensitive explosive fill, small-scale Sensitivity and Qualification Testing and Booster Study Test and small-scale performance testing. (U) \$2,450 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$5,536 Continue Insensitive Munitions (IM) development effort. Activities to include, but not limited to, lab level performance tests, IM transition to EMD, IM and environmental full-scale tests, final qualification tests and prototype booster reliability tests. (U) \$1,930 Complete HTSF developmental test and evaluation (DT&E) (U) \$300 Support HTSF Operational Utility Evaluation (OUE) (U) \$7,766 Total</p> <p>(U) <u>B. Project Change Summary</u> FY03: \$2.2M funding was increased to continue development of the Hard Target Smart Fuze and Insensitive Munitions.</p>											
Project 3133				Page 3 of 14 Pages				Exhibit R-2A (PE 0604602F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE				
							February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
05 - Engineering and Manufacturing Development				0604602F Armament/Ordnance Development			3133				
(U) C. Other Program Funding Summary (\$ in Thousands)											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) Hard Target Smart Fuze (HTSF) procurement funded by Defense Threat Reduction Agency (DTRA)	6,000	3,570	12,000								
(U) D. Acquisition Strategy											
The Hard Target Smart Fuze (HTSF) Acquisition Strategy was full and open competition for the EMD program with production options to meet performance specification requirements for current and future Hard Target munitions. The HTSF will be compatible with GBU-24, GBU-27, GBU-28, GBU-15, AGM-130, AGM-142, JDAM, and future hard target munitions while providing increased reliability and emphasis on life cycle management. The HTSF program was augmented with Defense Threat Reduction Agency (DTRA) funding and requirements for additional HTSF applications and follow-on fuze procurement. Acquisition strategy for MMC activities can be found in the Small Diameter Bomb PE 64329F. Acquisition strategy for Insensitive Munitions activities are TBD.											
(U) E. Schedule Profile											
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>			
				1	2	3	4	1	2	3	4
(U) Start HTSF CT&E						*					
(U) Complete HTSF Detailed Design								*			
(U) Complete CT&E								*			
(U) Start DT&E								*			
(U) Complete FCA									X		
(U) Complete DT&E											X
(U) Start IM Lethality Feasibility Study				*							
(U) Start IM Fill Development								*			
(U) Start Small-scale Sensitivity/Qual Testing									X		
(U) Start Small-scale Performance Testing										X	
* = Event occurred											
X = Event planned											
Project 3133			Page 4 of 14 Pages				Exhibit R-2A (PE 0604602F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
05 - Engineering and Manufacturing Development				0604602F Armament/Ordnance Development			3133				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Contractor Total					4,100		0		2,230	
(U)	Government					991		335		770	
(U)	Testing					2,063		1,580		3,681	
(U)	Contractor support					525		260		785	
(U)	Management support					430		275		300	
(U)	Total					8,109		2,450		7,766	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Motorola (JPF)	CPAF	Jul 93	21,357	21,357	21,357					21,357
	Alliant (HTSF)	C/CPIF	Aug 98	16,010	16,010	10,674	4,100		1,000	Continuing	TBD
	Boeing (MMC)	FFP	Jan 99	250	250	1,563				Continuing	TBD
	Lockheed (MMC)	FFP	Jan 99	250	250	1,563				Continuing	TBD
	Raytheon (MMC)	FFP	Jan 99	250	250	1,570				Continuing	TBD
	Northrup (MMC)	FFP	Jan 99	250	250	1,524				Continuing	TBD
	Air Force Research Lab/MN (IM)	In-house	N/A	2,475	2,475	0		335	200		535
	AAC/WMG	In-house	N/A	300	300	0			300		300
	IM Contractor TBD	TBD	TBD	1,230	1,230	0			1,230		1,230

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT 3133		
(U) Performing Organizations Continued:										
<u>Support and Management Organizations</u>										
HTSF TEAS/ TEAMS	Various	Various	N/A	N/A	2,150	525	200	Continuing	TBD	
MMC TEAS/ TEAMS	Various	Various	N/A	N/A	1,253	0		Continuing	TBD	
JPF TEAS/TEAMS	Various	Various	N/A	N/A	512	0		0	512	
AAC/WG (HTSF)	Various	Various	N/A	N/A	2,554	430	100	Continuing	TBD	
AAC/WMX (MMC)	Various	Various	N/A	N/A	2,678	0		Continuing	TBD	
Other MMC	Various	Various	N/A	N/A	1,050	0		0	1,050	
WL/MN (cast ductile bomb)	Various	Various	N/A	N/A	0	671		Continuing	TBD	
AFRL/MN (IM)	In-house	N/A	N/A	N/A	0	320	535	400	Continuing	TBD
AFRL/MN (TEAS/TAMS)	Various	Various	N/A	N/A	0	0		60	Continuing	TBD
AFRL/WMG (TEAS/TAMS)	Various	Various	N/A	N/A	0	0		595	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test HTSF	Various	Mar 94	N/A	N/A	1,575	2,063	930	Continuing	TBD	
46th test JPF	Various	Mar 94	N/A	N/A	3,315	0		0	3,315	
MMC Test					1,251	0		0	1,251	
MK-84 IM Tech/AFRL	In-house	N/A	N/A	N/A	0	0	1,580		1,580	
46th Test MK-84	Various	N/A	2,700	2,700	0		2,751		2,751	
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					38,251	4,100	335	2,730	TBD	TBD
Subtotal Support and Management					10,197	1,946	535	1,355	TBD	TBD
Subtotal Test and Evaluation					6,141	2,063	1,580	3,681	TBD	TBD
Total Project					54,589	8,109	2,450	7,766	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT 4696	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4696 Armament Standardization Program	1,183	1,217	1,258	1,277	1,298	1,320	1,343	Continuing	TBD
<p>(U) <u>A. Mission Description</u> Armament Standardization/Control/Munitions Material Handling Equipment (MMHE): This continuing project develops and improves the standardization and commonality of improved munitions handling and armament equipment to preclude duplication and proliferation. This project's efforts are limited to the study, design, and development of MMHE and armament control systems. Procurement will be performed and funded by the applicable weapons system project.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$1,183 Design, prototype, and test various MMHE projects, i.e., MJ-1 Table Modification, Triple Ejector Rack (TER) Storage Rack, Ammo Loader Replenisher Upgrade, AME Mobility Rack, Chaff/Flare Transport Module, Missile-Munitions Loading Adapter (MMLA) Upgrade, FMU-139 Cable Seating Tool, JASSM Download Adapter, MHU-110 Trailer Upgrade, Storage and Practice Bomb Transport Module. Complete development of Aluminum Rail Set, T-2 Pallet Locking Device, JASSM Loading/Handling Adapters, AGM-84 Fork Adapter, B-52 Loading Adapter, MAC Dolly-Stop Redesign, F-16 Pylon/Launcher Storage Stand, FMU-139 Closure Ring Tool, FMU-139 Cable Seating Tool, MMLA Actuator Redesign, Live Drop BDU-50 Stand, Strake/Lug Alignment Tool, B-1B Swing Arm Tool. Continue development of B-1B Launcher-Module Storage Stand, Next Generation Munitions Handler and Practice Bomb Transport Module. Initiate MAC Upgrade, MAC Torque Retainer, MMLA Upgrade, AIM-9 Assembly Stand Redesign, B-52 Launcher Hydraulic Power Unit, B-52 Mine Loading Adapter, Ammo Loader Replenisher Upgrade and other projects as determined by HQ ACC/LGW and/or Weapon System Program Offices.</p> <p>(U) \$1,183 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$1,217 Design, prototype and test various MMHE projects, i.e., Alternate Mission Equipment (AME) Mobility Rack, LAU-106 Maintenance Stand, Gun Maintenance Stand, T-2 Pallet Locking Device, Aluminum Rail Set. Continue development of B-1B Launcher-Module Storage Stand, AIM-9 Assembly Stand Redesign, Practice Bomb Transport Module and MAC Torque Retainer. Continue development of MAC Dolly-Stop Redesign, MMLA Upgrade, B-52 Launcher Hydraulic Power Unit, B-52 Mine Loading Adapter, F-16 Pylon/Launcher Storage Stand, MMLA Actuator Redesign, Ram Adapter Plate and Next Generation Munitions Handler. Perform MHU-110 Trailer Upgrade, AIM-120 Radome Cover, Ammo Loader Test Fixture, Ammo Loader Replenisher Upgrade, JASSM Download Adapter, Alternate Mission Equipment (AME) Mobility Rack, LAU-106 Maintenance Stand, Triple Ejector Rack (TER) Storage Rack, B-52 Yoke Stand/Lift Beam, Gun Maintenance Stand,</p>									
Project 4696	Page 7 of 14 Pages				Exhibit R-2A (PE 0604602F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development			PROJECT 4696		
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2002 (\$ in Thousands) Continued</u>									
International Service Organization (ISO) Container Stand, ISO Container Forklift Adapter/Ramp, 5000lb Rubber Roller, B-2 Preload Adapter Analysis, and other projects as determined by HQ/ACC/LGW and/or Weapon System Program Offices.									
(U) \$1,217 Total									
(U) <u>FY 2003 (\$ in Thousands)</u>									
(U) \$1,258 Design, prototype and test various MMHE projects, i.e., complete Ammo Loader Test Fixture, AIM-120 Radome Cover, Alternate Mission Equipment (AME) Mobility Rack, LAU-106 Maintenance Stand, Gun Maintenance Stand. Complete development of B-1B Launcher-Module Storage Stand, AIM-9 Assembly Stand Redesign, Practice Bomb Transport Module and MAC Torque Retainer. Continue development of MAC Upgrade, MMLA Upgrade, B-52 Launcher Hydraulic Power Unit, B-52 Mine Loading Adapter, Next Generation Munitions Handler and Ammo Loader Replenisher Upgrade. Perform MHU-110 Trailer Upgrade, Ammo Loader Test Fixture, JASSM Download Adapter, Alternate Mission Equipment (AME) Mobility Rack, LAU-106 Maintenance Stand, Triple Ejector Rack (TER) Storage Rack, B-52 Yoke Stand/Lift Beam, Gun Maintenance Stand, International Service Organization (ISO) Container Stand, ISO Container Forklift Adapter/Ramp, B-2 Preload Adapter Analysis, BRU-57 Stand, 5000lb Rubber Roller, Bomb Roller Redesign and other projects as determined by HQ/ACC/LGW and/or Weapon System Program Offices.									
(U) \$1,258 Total									
(U) <u>B. Project Change Summary</u>									
N/A									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) N/A									
(U) <u>D. Acquisition Strategy</u>									
MMHE is a continuing effort program with activities performed organically and/or contracted through Military Interdepartmental Purchase Requests (MIPR). Procurement will be performed and funded by the applicable equipment project.									
(U) <u>E. Schedule Profile</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>						
Project 4696	Page 8 of 14 Pages			Exhibit R-2A (PE 0604602F)					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002					
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT 4696				
(U) <u>E. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) N/A Not Applicable. MMHE does not execute in accordance with standard acquisition milestones. Project activities are performed on a continuing basis												
Project 4696			Page 9 of 14 Pages				Exhibit R-2A (PE 0604602F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development					0604602F Armament/Ordnance Development			4696		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Various MMHE Projects					1,183		1,217		1,258
(U)	Aluminum Rail Set, T-2 Pallet Locking Device, evaluation of Next Generation Munitions Handler									
(U)	Next Generation Munition Handling Trailer									
(U)	B-1B Rotary Launcher Adapter									
(U)	ALE-50 Transport Module									
(U)	JASSM Handling Adapters									
(U)	Total					1,183		1,217		1,258
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Dept. of Energy/NASA	MIPR			740	964	219			Continuing	TBD
<u>Support and Management Organizations</u>										
TEAS/TAMS	MIPR	Oct 99	N/A	N/A	2,159	626	700	720	Continuing	TBD
AFDTC/FM	MIPR	Oct 99	N/A	N/A	488	123	242	252	Continuing	TBD
64SSUPS/LGS	MIPR	Cont.	N/A	N/A	186	40	10	10	Continuing	TBD
WL/MN	MIPR	Cont.	N/A	N/A	130	25	0	0	Continuing	TBD
EDSC	MIPR	Cont.	N/A	N/A	0	0	25	26	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test Wing	MIPR	Cont.	N/A	N/A	550	150	240	250	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
05 - Engineering and Manufacturing Development				0604602F Armament/Ordnance Development					
				4696					
(U) Government Furnished Property:									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Delivery</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				964	219			TBD	TBD
Subtotal Support and Management				2,963	814	977	1,008	TBD	TBD
Subtotal Test and Evaluation				550	150	240	250	TBD	TBD
Total Project				4,477	1,183	1,217	1,258	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT 5613			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
5613	Containers	130	133	136	140	144	149	155	Continuing	TBD	
<p>(U) <u>A. Mission Description</u> Containers: This project funds the operation of the tri-service Container Design Retrieval System (CDRS). The CDRS maintains a container database to preclude proliferation and duplication of munitions containers. It also supports the Joint Ordnance Commander's Working Group (JOCG) for packaging, handling and loading. In addition, CDRS supports organic container design, acquisition transportation, prototyping and testing capabilities.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$5 Initiate/continue/complete design/development of various CDRS projects, including a modular mobility container system, and special projects. (U) \$5 Provide container design expertise, management, and technical support to programs such as CALCM, JASSM, JSOW, AMRAAM, AGM-142, MALD, AGM-130, Fuzes, Chem-Bio, Munitions Material Handling Equipment (MMHE), JDAM and Small Diameter Bomb (SDB). (U) \$120 Manage and operate the CDRS data base and support service. (U) \$130 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$6 Initiate/continue/complete design/development of various CDRS projects, including a modular mobility container system, and special projects. (U) \$5 Provide container design expertise, management, and technical support to programs such as CALCM, JASSM, AMRAAM, AGM-142, MALD, AGM-130, and WCMD. (U) \$122 Manage and operate the CDRS data base and support service. (U) \$133 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$6 Initiate/continue/complete design/development of various CDRS projects. (U) \$6 Provide container design expertise and technical support to programs such as JSOW, JDAM, JASSM, MMHE, Small Diameter Bomb (SDB) and AGM-142. (U) \$124 Manage and operate the CDRS database and support service. (U) \$136 Total</p>											
Project 5613				Page 12 of 14 Pages				Exhibit R-2A (PE 0604602F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002																																																																						
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT 5613																																																																					
<p>(U) <u>B. Project Change Summary</u> No significant program changes.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 10%;"><u>FY 2001</u></th> <th style="width: 10%;"><u>FY 2002</u></th> <th style="width: 10%;"><u>FY 2003</u></th> <th style="width: 10%;"><u>FY 2004</u></th> <th style="width: 10%;"><u>FY 2005</u></th> <th style="width: 10%;"><u>FY 2006</u></th> <th style="width: 10%;"><u>FY 2007</u></th> <th style="width: 10%;"><u>Cost to</u></th> <th style="width: 10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Not Applicable</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> Not Applicable</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="3" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) Not Applicable. Not Applicable. The Containers project does not execute in accordance with standard acquisition milestones. Design and support efforts are performed on a continuing basis.</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) Not Applicable											<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Not Applicable. Not Applicable. The Containers project does not execute in accordance with standard acquisition milestones. Design and support efforts are performed on a continuing basis.												
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																																				
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																																																					
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	1	2	3	4	1	2	3	4	1	2	3	4																																																																	
(U) Not Applicable. Not Applicable. The Containers project does not execute in accordance with standard acquisition milestones. Design and support efforts are performed on a continuing basis.																																																																													
Project 5613			Page 13 of 14 Pages				Exhibit R-2A (PE 0604602F)																																																																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604602F Armament/Ordnance Development				PROJECT 5613	
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Travel/Transportation				70		72			72
(U)	Supplies/Equipment				50		50			52
(U)	Mission Support				10		11			12
(U)	Total				130		133			136
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Not Applicable										
<u>Support and Management Organizations</u>										
Sverdrup (TEAS)	Various	Oct 93	N/A	N/A	1,455	0	0		Continuing	TBD
ASC/YHS	Various	Various	N/A	N/A	598	10	11	12	Continuing	TBD
Other	Various	Various	N/A	N/A	811	120	122	124	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
46th Test Wing	Various	Various	N/A	N/A	190	0	0		Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development										
Subtotal Support and Management					2,864	130	133	136	TBD	TBD
Subtotal Test and Evaluation					190	0	0		TBD	TBD
Total Project					3,054	130	133	136	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604604F Submunitions	PROJECT 3166
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3166 Joint Smart Munitions Test and Evaluation	4,441	4,761	4,739	4,822	4,911	5,595	5,789	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 This PE provides support for smart munitions and related technologies test and evaluation (T&E) activities, including T&E support for programs in engineering and manufacturing development. Project 3166 is a joint US Air Force/US Army project which provides RDT&E support for developmental smart munitions acquisition programs. Project 3166 (project Chicken Little) evaluates developmental smart munitions and related emerging technology with applications against vehicle targets and Theater Air Defense units by determining performance against actual foreign targets in realistic environments and in the presence of countermeasures. Data gathered is used to meet developmental decision points requiring highly reliable, realistic performance data. The project is a major focal point for joint Air Force and Army target signature collection and dissemination for development and exploitation purposes. The program proves best value test and evaluation support for submunition development and weaponization studies and modeling and simulation capabilities to augment a limited number of measurement and open air tests of smart weapons and related technologies.

(U) **FY 2001 (\$ in Thousands)**

(U) \$984	Continue weapon effectiveness evaluation and weaponization studies
(U) \$686	Develop, validate, and accredit improved models and simulation for assessment of alternatives and force on force studies
(U) \$243	Increase utility of lethality/vulnerability and signature database through addition of modern threat systems and secure datalink
(U) \$1,111	Plan and conduct captive carry flight tests and signature collection for seeker/sensor evaluations and algorithm development
(U) \$681	Characterize performance of advanced and programmable warheads to access potential for increasing lethality of weapons
(U) \$736	Perform vulnerability analysis of upgraded/advanced Suppression of Enemy Air Defense (SEAD) and Advanced Hardened Targets (AHD)
(U) \$4,441	Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
05 - Engineering and Manufacturing Development	0604604F Submunitions	3166		
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2002 (\$ in Thousands)</u>				
(U) \$1,100	Continue weapon effectiveness evaluation and weaponization studies			
(U) \$743	Develop, validate, and accredit improved models and simulation for assessment of alternatives and force on force studies			
(U) \$253	Increase utility of lethality/vulnerability and signature database through addition of modern threat systems and secure datalink			
(U) \$1,180	Plan and conduct captive carry flight tests and signature collection for seeker/sensor evaluations and algorithm development			
(U) \$704	Characterize performance of advanced and programmable warheads to access potential for increasing lethality of weapons			
(U) \$781	Perform vulnerability analysis of upgraded/advanced Suppression of Enemy Air Defense (SEAD) and Advanced Hardened Targets (AHT)			
(U) \$4,761	Total			
(U) <u>FY 2003 (\$ in Thousands)</u>				
(U) \$1,070	Continue weapon effectiveness evaluation and weaponization studies			
(U) \$739	Develop, validate, and accredit improved models and simulation for assessment of alternatives and force on force studies			
(U) \$255	Increase utility of lethality/vulnerability and signature database through addition of modern threat systems and secure datalink			
(U) \$1,184	Plan and conduct captive carry flight tests and signature collection for seeker/sensor evaluations and algorithm development			
(U) \$698	Characterize performance of advanced and programmable warheads to access potential for increasing lethality of weapons			
(U) \$793	Perform vulnerability analysis of upgraded/advanced Suppression of Enemy Air Defense (SEAD) and Advanced Hardened Targets (AHT)			
(U) \$4,739	Total			
(U) <u>B. Budget Activity Justification</u>				
This program is funded in BA 5 - Engineering and Manufacturing Development because this program supports development programs prior to production decision.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	4,732	4,809	4,751	TBD
(U) Appropriated Value	4,775	4,809		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-33	-48		
b. Small Business Innovative Research	-165			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-126			
Project 3166	Page 2 of 5 Pages			Exhibit R-2 (PE 0604604F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002						
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604604F Submunitions					PROJECT 3166						
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>																
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>Total Cost</u>					
e. Rescissions					-10											
(U) Adjustments to Budget Years Since FY 2002 PBR								-12								
(U) Current Budget Submit/FY 2003 PBR					4,441		4,761		4,739		TBD					
(U) <u>Significant Program Changes:</u> No significant change.																
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>																
					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>			
					<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>				
(U) Not Applicable.																
(U) <u>E. Acquisition Strategy</u>																
Funds are executed organically in support of test and evaluation activities including studies, analyses, flight tests, model building and simulation. There are several small contracts supporting the program office.																
(U) <u>F. Schedule Profile</u>																
					<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
					1	2	3	4	1	2	3	4	1	2	3	4
(U) Ongoing Activity					*	*	*	*	*	X	X	X	X	X	X	X
Project 3166, Joint Smart Munition Test and Evaluation Program (Project Chicken Little) does not execute in accordance with established acquisition milestones. Chicken Little is a continuing test effort (target/warhead evaluation/analysis, signature tests, captive carry flight tests, are ongoing throughout the year and continue through the FYDP). This project is also funded by the Army and other Services on a case by case basis. The type of activities is given in Section A but the timing, duration and level of effort is decided at the semi-annual Steering Committee meetings.																

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development				0604604F Subunits				3166			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Program Support					500		500		525	
(U)	Target Support					625		717		683	
(U)	Warhead Range Operations					329		340		334	
(U)	Captive Flight Tests					986		1,055		1,058	
(U)	Database Support (MILES)					213		223		224	
(U)	Vulnerability/Effectiveness Analysis					651		701		704	
(U)	Warhead Evaluation					277		289		285	
(U)	Target Signature Tests					249		268		266	
(U)	Models and Simulation Tools					611		668		660	
(U)	Total					4,441		4,761		4,739	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or</u>	<u>Contract</u>										
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>							
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
None											
<u>Support and Management Organizations</u>											
Sverdrup	C/CPIF	Jun 96	N/A	N/A	10,408	1,534	1,524	1,524	Continuing	TBD	
Macaulay Brown/ANSTEC	C/FFP	Apr 96	N/A	N/A	1,428	270	282	300	Continuing	TBD	
46 OG/OGML	N/A	Annual	N/A	N/A	6,138	230	218	225	Continuing	TBD	
<u>Test and Evaluation Organizations</u>											
46 OG/OGML		Annual	N/A	N/A	69,510	2,407	2,737	2,690	Continuing	TBD	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002					
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604604F Subunits				PROJECT 3166	
(U) Government Furnished Property:									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Obligation</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0	0	0	0
<u>Support and Management Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0	0	0	0
<u>Test and Evaluation Property</u>									
Not Applicable	N/A	N/A	N/A	0	0	0	0	0	0
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				0	0	0	0	0	0
Subtotal Support and Management				17,974	2,034	2,024	2,049	TBD	TBD
Subtotal Test and Evaluation				69,510	2,407	2,737	2,690	TBD	TBD
Total Project				87,484	4,441	4,761	4,739	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604617F Agile Combat Support					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	2,075	16,041	6,318	6,397	6,489	6,457	7,014	Continuing	TBD
2895 CE Readiness	2,075	5,317	5,626	5,721	5,821	6,175	6,726	Continuing	TBD
4910 Aeromedical Readiness	0	10,724	692	676	668	282	288	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 This Program Element (PE) provides capabilities to rapidly deploy, defend and sustain airfield operations and command and control activities to ensure readiness. In addition, this PE provides tactical, strategic aeromedical evacuation systems, automated information systems, and medical treatment equipment to meet unique Air Force medical readiness and operational requirements. These activities are prerequisites to establishing air superiority. Development of the Agile Combat Support (ACS) systems provides beddown for aircraft, support equipment, and forces at both main operating bases and contingency operating locations, which may have only a runway and a water source. They also offer crucial utilities, runway stabilization and repair, explosive ordnance disposal (EOD), aeromedical evacuation and treatment equipment, and security and reconnaissance capabilities to support aircraft deployment, launch, recovery and regeneration. Lighter-weight, rapidly deployable equipment has become essential in supporting numerous global contingencies such as DESERT SHIELD/DESERT STORM, Provide Comfort, Restore Hope, and Joint Endeavor for security, base defense, relief efforts, and special operations throughout the world. Specific ACS capabilities being developed include: power generation and distribution systems to reduce airlift; deployable medical grade oxygen generation systems; a family of deployable shelters to be used as aircraft hangars, maintenance facilities, heavy equipment storage, C4I operations, medical and personnel shelters; systems to repair runway damage; and Joint Service (Army-led) test, evaluation and acquisition of protective systems, and equipment to be used by Air Force EOD technicians for reconnaissance and mine clearing missions.

(U) **B. Budget Activity Justification**
 The Agile Combat Support program is in RDT&E budget activity 5 - Engineering and Manufacturing Development (EMD) because it supports development, testing and evaluation of materials and equipment for contingency basing, detection and handling of explosive ordnance, and tactical shelters.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
05 - Engineering and Manufacturing Development		0604617F Agile Combat Support			
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	3,383	6,674	6,333	TBD
(U)	Appropriated Value	3,414	6,674		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-24	-133		
	b. Small Business Innovative Research	-120			
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram	-1,188			
	e. Rescissions	-7			
(U)	Adjustments to Budget Years Since FY 2002 PBR		9,500	-15	
(U)	Current Budget Submit/FY 2003 PBR	2,075	16,041	6,318	TBD
(U)	<u>Significant Program Changes:</u>				
	Funding: Funds in PE64708F merged into PE 64617 in FY01; Funds in PE 64703F and RDT&E funds in PE28031F merged into PE64617F in FY02. This meets the intent of House action to eliminate smaller PEs and provide a more cohesive, manageable Agile Combat Support program.				
	FY02 received Congressional adds of \$8.5M and \$1.0M for Information Management Information Technology, and Rural Low Bandwidth Medical Collaboration System, respectively.				
	FY03 funding decreases by -15K due to inflation.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604617F Agile Combat Support				PROJECT 2895			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
2895	CE Readiness	2,075	5,317	5,626	5,721	5,821	6,175	6,726	Continuing	TBD	
<p>The Air Force consolidated three Civil Engineer (CE) readiness R&D programs (PE64617F - Agile Combat Support; PE64708F - Civil, Fire, Environmental, Shelters; and the RDT&E portion of PE28031F - War Reserve Material) under PE 64617F, Project 2895. PE 28031F RDT&E consolidation is effective FY02. This meets the intent of House action to eliminate smaller PEs and provides a more cohesive, manageable CE Readiness modernization effort.</p> <p>(U) <u>A. Mission Description</u> This Program Element (PE) provides capabilities to rapidly deploy, defend and sustain airfield operations and command and control activities to ensure readiness. These activities are prerequisites to establishing air superiority. Development of the Agile Combat Support (ACS) systems provides beddown for aircraft, support equipment, and forces at both main operating bases and contingency operating locations, which may have only a runway and a water source. They also offer crucial utilities, runway stabilization and repair, explosive ordnance disposal (EOD), and security and reconnaissance capabilities to support aircraft deployment, launch, recovery and regeneration. Lighter-weight, rapidly deployable equipment has become essential in supporting numerous global contingencies such as DESERT SHIELD/DESERT STORM, Provide Comfort, Restore Hope, and Joint Endeavor for security, base defense, relief efforts, and special operations throughout the world. Specific ACS capabilities being developed include: power generation and distribution systems to reduce airlift; a family of deployable shelters to be used as aircraft hangars, maintenance facilities, heavy equipment storage, C4I operations, medical and personnel shelters; systems to repair runway damage; and Joint Service (Army-led) test, evaluation and acquisition of protective systems, and equipment to be used by Air Force EOD technicians for reconnaissance and mine clearing missions.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$415 Completed EMD for All-purpose Remote Transport System (ARTS) FY99-01 attachments to locate, analyze, and render safe unexploded ordnance and terrorist bombs.</p> <p>(U) \$370 Continued courseware development for Multimedia Training Systems (MTS) courseware for aircraft familiarization, hazardous material, confined space rescue, emergency medical technician, and force protection programs.</p> <p>(U) \$210 Continued Commercial Technology Exploitation (CTE) for low cost civil engineering-related equipment.</p> <p>(U) \$185 Completed development of composite tactical shelter and methods to evaluate shelter performance.</p> <p>(U) \$415 Continued other technical support.</p> <p>(U) \$480 Initiated System Development and Demonstration (SDD) for the ARTS Alternate Control System to provide crucial backup control capability for the ARTS.</p>											
Project 2895				Page 3 of 14 Pages				Exhibit R-2A (PE 0604617F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604617F Agile Combat Support	2895
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2001 (\$ in Thousands) Continued</u></p> <p>(U) \$2,075 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$1,600 Continue SDD for the ARTS Alternate Control System.</p> <p>(U) \$1,200 Initiate SDD for ARTS Manipulator Arms.</p> <p>(U) \$300 Complete EMD for Deployable Power Generation and Distribution System (DPGDS).</p> <p>(U) \$225 Initiate SDD for Lightweight Matting for runways and contingency aircraft parking.</p> <p>(U) \$1,245 Continue EMD for Multimedia Training Systems (MTS)</p> <p>(U) \$747 Continue EMD for Commercial Technology Exploitation (CTE)</p> <p>(U) \$5,317 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$800 Complete SDD for ARTS Alternate Control System.</p> <p>(U) \$300 Continue SDD for ARTS Manipulator Arms</p> <p>(U) \$1,650 Continue SDD for Lightweight Matting</p> <p>(U) \$100 Initiate SDD for Large Air-Inflatable Shelter System (LASS)</p> <p>(U) \$1,976 Continue EMD for Multimedia Training Systems (MTS)</p> <p>(U) \$800 Continue EMD for Commercial Technology Exploitation (CTE)</p> <p>(U) \$5,626 Total</p> <p>(U) <u>B. Project Change Summary</u></p> <p> Activities formerly funded in PE 64708F and PE 28031F are now funded in this project.</p>		
Project 2895	Page 4 of 14 Pages	Exhibit R-2A (PE 0604617F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604617F Agile Combat Support				PROJECT 2895	
(U) C. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other Procurement, AF, PE 28031F, Other Base and Maintenance Support, Mobility Equipment (WSC 845420)	49,563	27,581	26,990	20,304	19,518	20,680	20,924	Continuing	TBD
(U) Other Procurement, AF, PE 28028F, Other Base and Maintenance Support, Air Base Operability (WSC 845100)	2,921	6,000	5,700	5,700	5,700	5,700	5,700	Continuing	TBD
(U) D. Acquisition Strategy									
Many of the projects funded in this PE employ a streamlined acquisition approach. Whenever practical, commercial items are tested and evaluated as candidates for solutions to user needs. This normally involves characterization, verification and qualification testing to ensure off-the-shelf equipment is properly adapted for military purposes. The Bare Base Systems Readiness Board evaluates laboratory and commercial technologies with application for modernization of Bare Base assets, such as deployable shelters, power, waste treatment and airfield support systems. With board approval, the SPO initiates Systems Development and Demonstration and production funding is realigned from current product lines to support modernization of assets. Initiation of SDD includes all 6.4 activities leading up to contract award and subsequent test and evaluation culminating in a Milestone C production decision.									
(U) E. Schedule Profile									
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
(U) ALL-PURPOSE REMOTE TRANSPORT SYSTEM II									4
(U) Award FY01 Production Option (Production Funds)				*					
(U) Complete FY01 testing/integration of ARTS tools					*				
(U) ARTS ALTERNATE CONTROL SYSTEM									
(U) Technology Transition						*			
Project 2895	Page 5 of 14 Pages				Exhibit R-2A (PE 0604617F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
05 - Engineering and Manufacturing Development					0604617F Agile Combat Support					2895				
(U) <u>E. Schedule Profile Continued</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
		1	2	3	4	1	2	3	4	1	2	3	4	
(U) Prepare RFP							X							
(U) Milestone B Decision							X							
(U) Award SDD Contract							X							
(U) Initiate OT&E								X						
(U) Milestone C Decision										X				
(U) ARTS MANIPULATOR ARMS														
(U) Technology Transition							X							
(U) Prepare RFP							X							
(U) Milestone B Decision									X					
(U) Award SDD Contract									X					
(U) Initiate OT&E										X				
(U) Milestone C Decision											X			
(U) DEPLOYABLE POWER GENERATION AND DISTRIBUTION SYSTEM														
(U) Complete System Requirements and Fix Verifications from OT&E					*									
(U) Milestone III-A Decision					*									
(U) Milestone III-B Decision						*								
(U) DEPLOYABLE LIGHTWEIGHT MATTING														
(U) Prepare RFP														
(U) Complete collection of soil stablization data (prerequisite to T&E)									X					
(U) Technology Transition										X				
(U) Milestone B Decision											X			
(U) Award SDD Contract												X		
(U) Initiate OT&E												X		
(U) MULTIMEDIA TRAINING SYSTEMS (MTS)														
(U) Complete FY01 Priority List							X							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
05 - Engineering and Manufacturing Development					0604617F Agile Combat Support					2895		
(U) <u>E. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U)	Complete FY02 Priority List											X
(U)	Complete FY03 Priority List											X
(U)	COMMERCIAL TECHNOLOGY EXPLOITATION (CTE)											
(U)	Complete FY01 AFOTEC Evaluation											*
(U)	Complete FY02 AFOTEC Evaluation											X
(U)	Complete FY03 AFOTEC Evaluation											X
(U)	LARGE AIR-INFLATABLE SHELTER SYSTEM (LASS)											
(U)	Technology Transition											X
(U)	Prepare RFP											X
(U)	TACTICAL SHELTERS											
(U)	Complete development											*

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604617F Agile Combat Support				2895		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Contracts					520		2,330		2,465
(U)	Administrative and &Analytic Support (A&AS)					640		1,580		1,590
(U)	Other Government Agencies					500		360		520
(U)	Materials/Equipment					0		75		70
(U)	Other Technical Support					415		972		981
(U)	Total					2,075		5,317		5,626
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
ARTS/Attachments	A&AS	Feb 98	2,800	2,800	820	415	0	0	0	1,235
ARTS Alternate Control	FFP	Mar 02	3,080	3,080	0	480	1,600	800	200	3,080
ARTS Manipulator Arms	FFP	Jun 02	1,600	1,600	0	0	1,200	300	100	1,600
Deployable Power Generation and Distribution System	FFP	Apr 98	2,238	2,238	0	0	300	0	0	300
Lightweight Matting	FFP	Feb 03	2,175	2,175	0	0	225	1,650	300	2,175
Multimedia Training Systems (MTS)	FFP	Cont	14,500	14,500	4,459	370	1,245	1,976	2,200	10,250
Commercial Technology Exploitation (CTE)	FFP	Cont	N/A	N/A	410	210	747	800	Continuing	TBD
Large Air-Inflatable Shelter System	FFP	Feb 04	3,500	3,500	0	0	0	100	3,400	3,500
Tactical Shelters	AF Form 616	N/A	N/A	N/A	0	185	0	0	0	185
Project 2895				Page 8 of 14 Pages				Exhibit R-3 (PE 0604617F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE
BUDGET ACTIVITY										PROJECT
05 - Engineering and Manufacturing Development										2895
PE NUMBER AND TITLE										
0604617F Agile Combat Support										
(U) Performing Organizations Continued:										
<u>Product Development Organizations</u>										
Other Technical Support	Misc	Misc	N/A	N/A	0	415	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
None.										
<u>Test and Evaluation Organizations</u>										
Various	Various	Various	N/A	N/A	0	0	0		Continuing	TBD
(U) Government Furnished Property:										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
*										
Subtotal Product Development					5,689	2,075	5,317	5,626	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation					0	0	0		TBD	TBD
Total Project					5,689	2,075	5,317	5,626	TBD	TBD
* Basket Program Element with 20+ years of projects, prior years breakout not available.										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604617F Agile Combat Support				PROJECT 4910	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4910 Aeromedical Readiness	0	10,724	692	676	668	282	288	Continuing	TBD
<p>This BPAC was created when funds in PE64703, Aeromedical Systems Development, were consolidated into PE 64617 per House Appropriations Committee guidance.</p> <p>(U) <u>A. Mission Description</u> This program provides tactical and strategic aeromedical evacuation systems, automated information systems, and medical treatment equipment to meet unique Air Force medical readiness and operational requirements</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$340 Deployable Oxygen System (DOS) - Conclude Next generation Portable Liquid Oxygen (NPTLOX) prototypes development; conduct test and evaluation. Continue market research and acquisition strategy development for gas and liquid generator systems. (U) \$10 Theater Medical Information Program - Air Force (TMIP-AF) - OT&E preparation, technology refresh, and requirements analysis. (U) \$20 Aeromedical Evacuation Support Platform (AESP) [formally called (SCITS)] - Travel support for production phase of program. (U) \$5 Chemically Hardened Air Transportable Hospital/Chemical-Biological Hardened Air Management Plant (CHATH/CHAMP) - Provide technical support for production. (U) \$287 Aeromedical Systems Analysis - Conduct foundational studies and analyses, requirements analyses, and product demonstrations to meet operational needs, and define acquisition strategies and baselines for potential system solutions to Air Force Medical Service materiel needs. Current projects include, but are not limited to, Patient Support Pallets (PSP), Collective Protected Expeditionary Medical Support (CP EMEDS), Latrine, Airborne Command and Control - Information for Global Reach, Telemedicine, and the Critical Care Support Platform capabilities. Provide support for the Human Systems Center, System Program Office. (U) \$8,500 Congressional add - Information Management Information Technology (IMIT) (U) \$1,000 Congressional add - Rural Low Bandwidth Medical Collaboration System (U) \$562 Provide Technical Engineering and Management Support to Aeromedical programs. (U) \$10,724 Total</p>									
Project 4910			Page 10 of 14 Pages				Exhibit R-2A (PE 0604617F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002																																																							
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604617F Agile Combat Support			PROJECT 4910																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$327 Deployable Oxygen System (DOS) - Operations support for the Next Generation Portable Liquid Oxygen (NPTLOX) production. Continue market research and aquisition strategy development of gas and liquid generator systems. Begin gas generator system development</p> <p>(U) \$30 Theater Medical Information Program - Air Force (TMIP-AF) - Continue OT&E preparation, technology refresh, and requirements analysis.</p> <p>(U) \$335 Aeromedical Systems Analysis - Conduct foundational studies and analyses, requirements analyses, and product demonstrations to meet operational needs, and define acquisition strategies and baselines for potential system solutions to Air Force Medical Service materiel needs. Provide support for the Human Systems Center, System Program Office.</p> <p>(U) \$692 Total</p> <p>(U) <u>B. Project Change Summary</u> Program costs changed due to the following reasons: - CHAMP/CHATH program complete. - AESP program complete.</p> <p>Schedule changes: - DOS test and evaluation slipped one quarter due to contract modifications. - AESP production slipped one quarter due to unforeseen test requirements.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>Cost to</u></th> <th><u>Total Cost</u></th> </tr> <tr> <th></th> <th><u>Actual</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Estimate</u></th> <th><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td align="right">16,268</td> <td align="right">15,374</td> <td align="right">13,992</td> <td align="right">14,313</td> <td align="right">14,594</td> <td align="right">15,181</td> <td align="right">15,485</td> <td align="center">Continuing</td> <td align="center">TBD</td> </tr> <tr> <td colspan="10">APPN is 3080 OPAF - PE 28038</td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> All major projects are awarded under full and open competition.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border: none;"> <tr> <td></td> <td align="center"><u>FY 2001</u></td> <td align="center"><u>FY 2002</u></td> <td align="center"><u>FY 2003</u></td> </tr> </table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN	16,268	15,374	13,992	14,313	14,594	15,181	15,485	Continuing	TBD	APPN is 3080 OPAF - PE 28038											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																																					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																																						
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	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>																																																											
Project 4910			Page 11 of 14 Pages			Exhibit R-2A (PE 0604617F)																																																								

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE		
BUDGET ACTIVITY											PROJECT		
05 - Engineering and Manufacturing Development						0604617F Agile Combat Support					February 2002		4910
(U) <u>E. Schedule Profile Continued</u>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) DEPLOYABLE OXYGEN SYSTEM													
(U) -FDA Approval													
							X						
(U) -Conduct Test and Evaluation													
										X			
(U) -Begin NPTLOX Production													
											X		
(U) -Begin Gas Generator Development													
													X
(U) AEROMEDICAL EVACUATION SUPPORT PLATFORM													
(U) -Complete Production													
									X				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development					0604617F Agile Combat Support			4910		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Engineering and Manufacturing Development							210		230
(U)	Development/Operational Test and Evaluation							265		
(U)	Contractor Engineering Support							562		297
(U)	Miscellaneous (System Program Office Operations)							167		135
(U)	Mission Support/Supplies							20		30
(U)	Information Management Information Technology (IMIT)							8,500		
(U)	Rural Low Bandwidth Medical Collaboration System							1,000		
(U)	Total							10,724		692
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
DOS	FFP	Apr 01	2,770	2,770	0				Continuing	TBD
New Business	Various	Various			17,477		200	200	Continuing	TBD
SCITS	CPIF	Jul 98	3,009	3,009					Continuing	TBD
CHATH/CHAMP	CPFF	Aug 95	3,859	3,859	3,609				Continuing	TBD
TMIP/AF	Various	Various	4,278	4,278	1,758				Continuing	TBD
IMIT	N/A	Mar 02	8,500	8,500			8,500			8,500
RLB Collaboration Sys	N/A	Mar 02	1,000	1,000			1,000			1,000

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development				0604617F Agile Combat Support			4910		
(U) <u>Performing Organizations Continued:</u>									
<u>Support and Management Organizations</u>									
TEAMS	Delivery	Various		3,061	562	297	Continuing	TBD	
	Order								
Program Management	Various	Various		3,767	197	195	Continuing	TBD	
Support & Operations									
<u>Test and Evaluation Organizations</u>									
DOS Test and Evaluation				140	265		Continuing	TBD	
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>	<u>Award or</u>							
	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Item</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Description</u>	<u>Vehicle</u>								
<u>Product Development Property</u>									
None.									
<u>Support and Management Property</u>									
None.									
<u>Test and Evaluation Property</u>									
None.									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				22,844		9,700	200	TBD	TBD
Subtotal Support and Management				6,828		759	492	TBD	TBD
Subtotal Test and Evaluation				140		265		TBD	TBD
Total Project				29,812		10,724	692	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604618F Joint Direct Attack Munition	PROJECT 3890
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3890 Joint Direct Attack Munitions	10,654	27,679	16,594	34,816	0	0	0	0	410,219
Quantity of RDT&E Articles	0	88	0	0	0	0	0	0	605

*Quantity of RDT&E Articles reflect assets by delivery year and cannot be reconciled to the dollar amounts (incremental funding) shown in any one year.

(U) **A. Mission Description**
 Operation DESERT STORM confirmed the need for, and Operation ALLIED FORCE confirmed the utility of a more accurate weapon delivery capability in adverse weather conditions from medium/high altitudes. Failure to satisfy this requirement will allow the enemy to continue to take advantage of the sanctuary of weather and/or prevent US air power from prosecuting a conflict on its terms. The Joint Direct Attack Munition (JDAM) is a joint Air Force and Navy munitions program to correct these shortfalls, with the Air Force as the executive service. JDAM will upgrade the existing inventory of general purpose bombs (Mk-84, BLU-109, Mk-83/BLU-110 and Mk-82/BLU-111) by integrating them with a guidance kit consisting of a Global Position System aided Inertial Navigation System (INS/GPS). JDAM will provide an accurate (13 meters) adverse weather capability. JDAM threshold aircraft are B-52H, F-22, AV-8B and F/A-18C/D. JDAM objective aircraft are B-2, B-1B, F-16, F-15E, and other aircraft. JDAM development was a two-phased Engineering and Manufacturing Development (EMD) effort. EMD Phase I emphasized competitive design and manufacturing processes. This phase completed 10 Oct 95. EMD Phase II emphasized full scale hardware build and flight test to verify system performance and supported OT&E. EMD Phase II ended Dec 00. A development effort to integrate the JDAM guidance kits on the Mk-82 began in September 2000. JDAM Low Rate Initial Production (LRIP) began in FY97 and Full Rate Production (Mk-84 and BLU-109) began in FY01. JDAM GPS Selective Availability Anti-Spoofing Module (SAASM) integration and anti-jam integration efforts begin in FY03. A redesign effort for the Joint Programmable Fuze (JPF) began Mar 01 to improve high altitude bomber capability. This fuze is a multi-function unitary fuze developed for JDAM and other conventional inventory weapons. JDAM is an Air Force Acquisition Category (ACAT) 1D program.

- (U) **FY 2001 (\$ in Thousands)**
- (U) \$3,751 Continued development effort for Mk-82 JDAM. Completed consolidation and test of flight software. Supported Mk-83 F-22 integration analysis and testing.
- (U) \$5,906 Provided flight test support for Mk-82 flight software consolidation. Supported Mk-83 F-22 integration testing.
- (U) \$997 Provided support and management tasks to coordinate the program activities of the prime contractor and various test and aircraft organizations.
- (U) \$10,654 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT		
05 - Engineering and Manufacturing Development	0604618F Joint Direct Attack Munition	3890		
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2002 (\$ in Thousands)</u>				
(U) \$9,316	Complete development effort for Mk-82 JDAM and JPF redesign.			
(U) \$12,449	Perform captive carry and DT flight testing on Mk-82 JDAM and perform JPF testing.			
(U) \$2,250	Provide support and management tasks to coordinate the program activities of the prime contractor and various test and aircraft organizations.			
(U) \$3,664	Continued development of fuzing hardware for high altitude bomber operations.			
(U) \$27,679	Total			
(U) <u>FY 2003 (\$ in Thousands)</u>				
(U) \$12,089	JDAM software and hardware development to support SAASM integration effort and anti-jam development and integration.			
(U) \$3,432	Perform test effort on JDAM with integrated SAASM and anti-jam capabilities for the JDAM receiver.			
(U) \$1,073	Provide support and management tasks to coordinate the program activities of the prime contractor and various organizations.			
(U) \$16,594	Total			
(U) <u>B. Budget Activity Justification</u>				
This program is funded in Budget Activity 5, EMD, due to its focus on devising an affordable design and manufacturing process.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	11,055	27,956	0	355,515
(U) Appropriated Value	11,055	27,956		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-277		-277
b. Small Business Innovative Research	-387			-387
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-14			-14
e. Rescissions				
(U) Adjustments to Budget Years Since FY 2002 PBR			16,594	55,382
(U) Current Budget Submit/FY 2003 PBR	10,654	27,679	16,594	410,219

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604618F Joint Direct Attack Munition				PROJECT 3890		
(U) C. Program Change Summary (\$ in Thousands) Continued										
(U) <u>Significant Program Changes:</u> FY03: \$2.6M transferred from Procurement account for JDAM software and hardware to support JDAM SAASM integration effort. \$13.994M added for anti-jam integration effort.										
(U) D. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) (U) Procurement of Ammunition, Air Force, P-1 Line Item JDAM (PE 27583F)	203,470	185,825	378,563	235,488	292,803	288,040	166,546		2,081,704	
(U) (U) Seek Eagle (PE 27590F)	0	147	300	144	0	0	103	0	694	
In FY02, JDAM AF received \$250.5M as part of the Defense Emergency Response Fund (DERF). Funding was used to buy 5,006 JDAM kits in support of OPERATION ENDURING FREEDOM. This funding also accelerated the delivery of Lot 5. This funding is not reflected in the FY02 program total.										
(U) E. Acquisition Strategy										
The contract for the JDAM Mk-82 effort is Cost Plus Award Fee. The JPF effort is a fixed price incentive fee (FPI) contract. Procurement Lots 1-6 have been awarded and Lots 7-11 have a Production Price Commitment Curve agreement.										
(U) F. Schedule Profile										
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U) Milestone III (2000 lb)				*						
(U) JPF Redesign Start				*						
(U) JPF Testing Start					*					
(U) MK-82 CDR						*				
(U) MK-82 DT Flight Test Start							X			
(U) MK-82 Design/Develop/Qual Finish								X		
(U) Milestone III (1000 lb)									X	
(U) SAASM Integration Start									X	
(U) Anti-Jam Integration Start									X	
Project 3890									Page 3 of 6 Pages	Exhibit R-2 (PE 0604618F)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)											DATE February 2002																																																				
BUDGET ACTIVITY					PE NUMBER AND TITLE						PROJECT																																																				
05 - Engineering and Manufacturing Development					0604618F Joint Direct Attack Munition						3890																																																				
(U) <u>F. Schedule Profile Continued</u>																																																															
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	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																																						
	1	2	3	4	1	2	3	4	1	2	3	4																																																			
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Project 3890			Page 4 of 6 Pages						Exhibit R-2 (PE 0604618F)																																																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604618F Joint Direct Attack Munition				PROJECT 3890		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	Primary Hardware Development					3,751	12,980	12,089		
(U)	Test & Evaluation					5,906	12,449	3,432		
(U)	Engineering & Prog Mgt Support					997	2,250	1,073		
(U)	Total					10,654	27,679	16,594		
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Prime Contractors Boeing (St	C/CPAF	Oct-95	231,720	231,720	191,275	3,751	7,315	12,089	17,262	231,692
Louis, MO) Lockheed Martin										
FY94/95 Only										
Dayron (JPF)	FPIF	Dec-01	4,194	4,194	2,191		2,003			4,194
Conceptual Studies	Various	Various	N/A	N/A	22,428	0			0	22,428
Fuze Development	TBD	TBD	3,644	3,644			3,664			3,664
<u>Support and Management Organizations</u>										
Engineering Spt.	CPAF	Oct 96	15,906	15,906	12,916	425	1,600	380	585	15,906
TAMS Contractor	CPAF	Oct 96	5,008	5,008	4,575	57	76	100	200	5,008
Program Office	Various	Various	N/A	N/A	17,356	515	572	593	868	19,904
<u>Test and Evaluation Organizations</u>										
Aircraft SPO/PMA Supt.	Various	Various	N/A	N/A	13,619	20	180		0	13,819
Flight Testing	Various	Various	N/A	N/A	36,910	3,140	10,949	406	13,201	64,606
Ground Testing	Various	Various	N/A	N/A	12,235	2,046	1,320	3,026	2,700	21,327
JPF Wind Tunnel Testing	TBD	TBD	N/A	N/A	2,636	700	0			3,336
Project 3890										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604618F Joint Direct Attack Munition				3890		
(U) <u>Performing Organizations Continued:</u>										
<u>Test and Evaluation Organizations</u>										
GFE	Various	Various	N/A	N/A	4,335	0	0			4,335
(U) <u>Government Furnished Property:</u>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
Not Applicable										
<u>Support and Management Property</u>										
<u>Test and Evaluation Property</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					215,894	3,751	12,982	12,089	17,262	261,978
Subtotal Support and Management					34,847	997	2,248	1,073	1,653	40,818
Subtotal Test and Evaluation					69,735	5,906	12,449	3,432	15,901	107,423
Total Project					320,476	10,654	27,679	16,594	34,816	410,219

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604703F Aeromedical Systems Development				PROJECT 2866			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
2866	Aeromedical/Casualty Care Systems Dev	5,336	0	0	0	0	0	0	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>In FY 2002, 652866, Aeromedical/Casualty Care Systems Development efforts transferred to PE 0604617F, Agile Combat Support, Project 654910, Aeromedical Readiness, in order to meet House Appropriations Committee guidance.</p> <p>(U) <u>A. Mission Description</u> The Program Element provides tactical, strategic aeromedical evacuation systems, automated information systems, and medical treatment equipment to meet unique Air Force medical readiness and operational requirements.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$300 Spinal Cord Injury Transport System (SCITS) - Complete OT&E, EMD and support production.</p> <p>(U) \$119 Theater Medical Information Program - Air Force (TMIP-AF) - Support for HQ USAF/SGXR and Air Force Medical Logistics Office (AFMLO) to execute medical information infrastructure deployment per user fielding plan. Integrate and test pre-planned product improvements relative to block releases of the DoD-Level system.</p> <p>(U) \$2,249 Deployable Oxygen System (DOS) - Next generation Portable Liquid Oxygen (NPTLOX) System product improvement program begins design & development.</p> <p>(U) \$10 Chemically Hardened Air Transportable Hospital/Chemical-Biological Hardened Air Management Plant (CHATH/CHAMP) - Provide technical support for production</p> <p>(U) \$1,307 Aeromedical Systems Analysis - Conduct foundational studies and analyses, requirements analyses, and product demonstrations to meet operational needs, and define acquisition strategies and baselines for potential system solutions to Air Force Medical Service materiel needs. Current projects include, but are not limited to, Patient Support Pallets (PSP), Collective Protected Expeditionary Medical Support (CP EMEDS), Latrine, and Telemedicine.</p> <p>(U) \$1,080 Provide Technical Engineering and Management Support to Aeromedical programs.</p> <p>(U) \$271 Provide support for the Human Systems Center, System Program Office.</p> <p>(U) \$5,336 Total</p>											
Project 2866				Page 1 of 5 Pages				Exhibit R-2 (PE 0604703F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																							
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604703F Aeromedical Systems Development	PROJECT 2866																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in budget activity 5 - Engineering and Manufacturing Development because it supports development of systems for treatment, evacuation, and prediction of wartime casualties in a conventional or non-conventional warfare environment.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:10%; text-align: center;"><u>FY 2001</u></th> <th style="width:10%; text-align: center;"><u>FY 2002</u></th> <th style="width:10%; text-align: center;"><u>FY 2003</u></th> <th style="width:10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">5,874</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">5,929</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-42</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-200</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">-7</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: center;">-331</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: center;">-13</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">5,336</td> <td style="text-align: center;">0</td> <td></td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p>FY 2002 funds were transferred to PE 0604617F, Agile Combat Support, Project 654910, Aeromedical Readiness, in order to meet House Appropriations Committee guidance.</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	5,874	0		TBD	(U) Appropriated Value	5,929	0			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-42				b. Small Business Innovative Research	-200				c. Omnibus or Other Above Threshold Reprogram	-7				d. Below Threshold Reprogram	-331				e. Rescissions	-13				(U) Adjustments to Budget Years Since FY 2002 PBR		0			(U) Current Budget Submit/FY 2003 PBR	5,336	0		TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																					
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(U) Current Budget Submit/FY 2003 PBR	5,336	0		TBD																																																					
Project 2866	Page 2 of 5 Pages	Exhibit R-2 (PE 0604703F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604703F Aeromedical Systems Development				PROJECT 2866	
(U) D. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other Procurement, AF, PE 28038F, Other Base and Maintenance Support, Medical/Dental Equipment	16,868	15,525	13,992	14,389	14,709	15,333	15,672	Continuing	TBD
(U) E. Acquisition Strategy All major projects within this Program Element are awarded under full and open competition.									
(U) F. Schedule Profile									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
(U) SPINAL CORD INJURY TRANSPORT SYS									
(U) -Begin OT&E			*						
(U) -Begin Production					*				
(U) DEPLOYABLE OXYGEN SYSTEM (DOS)									
(U) -RFP Release				*					
(U) -Contract Award/Begin EMD					*				
(U) TMIP-AF									
(U) -Award Global Design EMD contract									
(U) -Initiate System Level OT&E									
(U) -Complete OT&E						*			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development				0604703F Aeromedical Systems Development			2866			
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Engineering and Manufacturing Development					3,535				
(U)	Development/Operational Test and Evaluation					200				
(U)	Contractor Engineering Support					1,080				
(U)	Miscellaneous (System Program Office Operations)					271				
(U)	Mission Support/Supplies					250				
(U)	Total					5,336				
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
CHATH/CHAMP Phase	CPFF	Aug 95	3,853	3,853	3,609	10			0	3,619
II-ERDEC										
SCITS	CPIF	Jul 98	2,768	2,800	400	100			0	500
DOS (formally AHOS)	TBD	TBD	TBD	TBD	0	1,711			Continuing	TBD
TMIP-AF	Various	Various	4,278	4,278	1,758	119			0	1,877
New Business-	Various	Various			17,477	1,845			Continuing	TBD
Mission Support	Various	Various			532				Continuing	TBD
<u>Support and Management Organizations</u>										
TEAMS-OpTech, McDonald Tech, MTC	Delivery Order	Various			3,061	1,080			Continuing	TBD
SPO Operations	Various	Various			3,767	271			Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT	
05 - Engineering and Manufacturing Development					0604703F Aeromedical Systems Development			2866	
					February 2002				
(U) Performing Organizations Continued:									
<u>Test and Evaluation Organizations</u>									
Aberdeen Prov. Grnd					2	0		Continuing	TBD
Other					138	200		Continuing	TBD
(U) Government Furnished Property:									
<u>Contract</u>									
<u>Method/Type</u>									
<u>Award or</u>									
<u>or Funding</u>									
<u>Obligation</u>									
<u>Delivery</u>									
<u>Date</u>									
<u>Item</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development					23,776	3,785			TBD
Subtotal Support and Management					6,828	1,351			TBD
Subtotal Test and Evaluation					140	200			TBD
Total Project					30,744	5,336			TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604706F Life Support Systems	PROJECT 412A
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
412A Life Support Systems	16,253	9,208	925	274	266	2,767	2,804	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	Continuing	TBD

(U) **A. Mission Description**
 This program provides for System Development and Demonstration (SDD) of life support equipment and subsystems to satisfy operational command requirements for improved life support equipment. There are five main projects in this PE. (1) The Aircrew Laser Eye Protection (ALEP) project provides aircrews with eye protection against a variety of laser devices which could cause temporary and permanent loss of vision. (2) The Fixed Aircrew Standardized Seat (FASS) Program seeks to evaluate and standardize seat systems and subsystems in non-ejection seat aircraft. (3) ACES II Ejection Seat improvement projects include the Cooperative Modification Program (CMP), Structural Upgrades and Digital Recovery Sequencer program, and Preplanned Product Improvements (P3I). (4) The Lightweight Environmentally Sealed Parachute Assembly (LESPA) is a lighter and thinner parachute than current equipment with a service life of 25 years and a 5-year repack cycle. (5) Panoramic Night Vision Goggles (PNVG) provide a greatly enhanced field of view over current night vision goggles. This PE also provides for the continuing development of life support items and subsystems such as, but not limited to, the following: flight helmets, oxygen breathing equipment for aviators, survival radio support equipment, night vision devices, active/passive noise reduction devices, aircraft seating, and parachutes. Program management support includes tasks to assess deficiencies of currently fielded equipment, provide for the transition of new technology into SDD, and support all current life support projects.

- (U) **FY 2001 (\$ in Thousands)**
- (U) \$4,000 Congressional Add for ACES II Ejection Seat Digital Sequencer and Aircrew Accommodations - Begin SDD
 - (U) \$3,700 Congressional Add for Fixed Aircrew Standardized Seats - Continue Seat Study/Begin CTD
 - (U) \$2,723 Continue Aircrew Laser Eye Protection CTD
 - (U) \$3,069 Complete ACES II Cooperative Modification Program SDD
 - (U) \$1,187 Continue ATAGS SDD and Production Support Costs
 - (U) \$1,005 Continue development of other Life Support items and subsystems
 - (U) \$569 Program Management/Technical Support/Travel/Test & Evaluation Support
 - (U) \$16,253 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT	
05 - Engineering and Manufacturing Development		0604706F Life Support Systems		412A	
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2002 (\$ in Thousands)</u>					
(U)	\$2,500	Congressional Add for Panoramic Night Vision Goggle Development - Begin SDD			
(U)	\$1,500	Congressional Add for ACES II Ejection Seat P3I			
(U)	\$700	Congressional Add for Lightweight Environmentally Sealed Parachutes (LESPA) - Begin Block II SDD			
(U)	\$3,428	Begin ALEP SDD			
(U)	\$672	Continue development of other Life Support items and subsystems such as ejection seats, anti-gravity suits, F-22 integration, night vision devices, and parachutes			
(U)	\$408	Program Management/Technical Support/Travel/Test & Evaluation Support			
(U)	\$9,208	Total			
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U)	\$704	Continue ALEP SDD			
(U)	\$100	Continue development of other Life Support items and subsystems such as ejection seats, anti-gravity suits, F-22 integration, night vision devices, and parachutes			
(U)	\$121	Program Management/Technical Support/Travel/Test & Evaluation Support			
(U)	\$925	Total			
(U) <u>B. Budget Activity Justification</u>					
Program is in Budget Activity 5 because several projects are in Acquisition Phase B, SDD					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	26,215	4,586	1,244	TBD
(U)	Appropriated Value	26,458	4,586		TBD
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-185	-78		TBD
	b. Small Business Innovative Research	-546			TBD
	c. Omnibus or Other Above Threshold Reprogram				TBD
	d. Below Threshold Reprogram	583			TBD
	e. Rescissions	-10,057			TBD
Project 412A		Page 2 of 8 Pages		Exhibit R-2 (PE 0604706F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604706F Life Support Systems			PROJECT 412A		
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
(U)	Adjustments to Budget Years Since FY 2002 PBR		4,700	-319					TBD
(U)	Current Budget Submit/FY 2003 PBR	16,253	9,208	925					TBD
(U) <u>Significant Program Changes:</u>									
FY 2001 Congressional Adds: \$10.25M for JESP; \$4.0M for ACES II modifications; \$3.7M for Fixed Aircrew Standardized Seats									
FY 2002 Congressional Rescission: \$10M FY01 JESP funds									
FY 2002 Congressional Adds: \$2.5M for Panoramic Night Vision Goggle development; \$1.5M for ACES II P3I; \$700K for LESPA development									
FY 2003 Adjustments: -\$163K for Program Support; -\$156K for Life Support Program reduction									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
							<u>Cost to</u>		
							<u>Complete</u>		
(U)	Items Less Than \$5M (Safety Equipment) PE 0702833F BPAC 842990: Advanced Technology Anti-G Suit (ATAGS)	550					0		550
(U)	Items Less Than \$5M (Safety Equipment) PE 0702833F BPAC 842990: Aircrew Laser Eye Protection (ALEP)		2,800	4,520	3,920	1,400		0	12,640
(U)	Items Less Than \$5M (Safety Equipment) PE 0702833F BPAC 842140: Panoramic Night Vision Goggles--FYDP Requirements TBD								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE																																																																																																																																																																																																				
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<p>(U) E. Acquisition Strategy Acquisition strategy is carried out at the project level. (1) The ALEP program acquisition strategy consists of a full and open PDRR contract to two contractors as well as a full and open SDD contract with one to two contractors with a down select to one contractor for production. (2) The FASS program CTD effort will be awarded competitively through an Contract and Management Support contract. (3) The acquisition strategy for the ACES II P3I includes a sole source Cost Plus Fixed Fee contract for the drogue and seat modifications. (4) The LESPA effort will be accomplished through an existing Navy cost-type Basic Ordering Agreement (BOA) contract. (5) The PNVG SDD effort will be a full and open competition between technically viable competitors and subsequent award of a cost-type contract.</p>																																																																																																																																																																																																														
<p>(U) F. Schedule Profile</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) ACES II CMP Sled Test Completion</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ACES II OT&E Completion</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ACES II Digital Sequencer Qual Start</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ACES II Structural Improvement Task</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) LESPA Development Block I Completion</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) FASS CTD Award</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) FASS DT&E/OT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) ALEP SDD Contract Award</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) ALEP Complete DT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) ALEP Complete IOT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) ALEP Production Award</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>(U) PNVG SDD Contract Award</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) PNVG Block I Production Award</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> </tbody> </table> <p>* = completed event X = planned event</p>													<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) ACES II CMP Sled Test Completion					*								(U) ACES II OT&E Completion									X				(U) ACES II Digital Sequencer Qual Start						X							(U) ACES II Structural Improvement Task							X						(U) LESPA Development Block I Completion									X				(U) FASS CTD Award						X							(U) FASS DT&E/OT&E												X	(U) ALEP SDD Contract Award						X							(U) ALEP Complete DT&E												X	(U) ALEP Complete IOT&E												X	(U) ALEP Production Award											X		(U) PNVG SDD Contract Award							X						(U) PNVG Block I Production Award												X
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Project 412A				Page 4 of 8 Pages				Exhibit R-2 (PE 0604706F)																																																																																																																																																																																																						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002						
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT					
05 - Engineering and Manufacturing Development				0604706F Life Support Systems			412A					
(U) A. Project Cost Breakdown (\$ in Thousands)												
						<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>	
(U)	Contracts					11,589		8,400			93	
(U)	Technical Engineering Support					1,362		405			350	
(U)	Travel					283		34			38	
(U)	Government Testing					2,219		0			222	
(U)	Program Management/Technical Support and Misc.					800		369			222	
(U)	Total					16,253		9,208			925	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)												
(U) Performing Organizations:												
	<u>Contractor or</u>		<u>Contract</u>									
	<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>	<u>Performing</u>	<u>Project</u>					
	<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	
	<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	
										<u>Budget to</u>	<u>Total</u>	
										<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>												
	UPCO-Inflatable Rest		SS/CPAF		Aug 99	2,053	2,053	2,157			Continuing	TBD
	Entran Devices-ACES II		FFP		Sep 99	39	39	39			Continuing	TBD
	Boeing-ACES II Struc Def		SS/CPFF		Dec 99	200	200	200			Continuing	TBD
	ATA Sensors-ACES II		FFP		Mar 00	31	31	31			Continuing	TBD
	Gemini Elect Co-ACES II		FFP		May 99	9	9	9			Continuing	TBD
	Denton, Inc-ACES II		FFP		Sep 99	47	47	47			Continuing	TBD
	First Tech Sys-ACES II		FFP		Oct 99	393	393	193			Continuing	TBD
	Boeing-ACES II --Study		SS/CPFF		Aug 99	237	237	237			Continuing	TBD
	Pioneer Aerospace-ACES II		FFP		Jan 99	9	9	9			Continuing	TBD
	EME Corp-ACES II		FFP		Mar 00	244	244				Continuing	TBD
	ITT-NVS		C/CPIF		Jan 93	14,081	14,081	14,081			Continuing	TBD
	KRUG-ATAGS		SS/FFP		7 July 97	424	424	424			Continuing	TBD
	Mustang-ATAGS		SS/FFP		Sep 97	499	499	499	903		Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE			
BUDGET ACTIVITY							PROJECT			
05 - Engineering and Manufacturing Development							0604706F Life Support Systems			
							412A			
(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
ALEP - (AL/Navy)	C/CPFF	Jun 97	4,552	4,552	4,552			Continuing	TBD	
MDA-Enhanced Drogue	SS/CPFF	Jun 97	1,130	1,130	1,130			Continuing	TBD	
MDA-ACES II Seats	SS/FFP	Sept 97	150	150	150			Continuing	TBD	
SRL-ATAGS DT&E Support	SS/CPFF	Dec 97	150	150	150			Continuing	TBD	
Boeing-ACES II Pre-SDD	SS/CPFF	Feb 98	250	250	250			Continuing	TBD	
Brooks AFB, Supply	Supply Reqt	Feb 98	311	311	311			Continuing	TBD	
Contax	SS/FFP	Apr 98	11	11	11			Continuing	TBD	
Boeing-ACES II SDD	SS/CPIF	Dec 98	5,004	5,004	6,747	1,187		Continuing	TBD	
Boeing-ACES II SDD	SS/CPFF	Jun 00			412	236		Continuing	TBD	
(Structural)										
BFG-UPCO through Hill AFB	TBD	Jan 01				3,227		Continuing	TBD	
(ACES II)										
SEI - Vacuum Packed						507		Continuing	TBD	
Parachute										
Pax River	AF 185	Aug 99	147	147				Continuing	TBD	
Holloman AFB	AF 185	Nov 99	5	5				Continuing	TBD	
ALEP CTD	CPFF	Sep 00	TBD	3,551	4,667	1,650		Continuing	TBD	
ALEP SDD	TBD	TBD	TBD	4,252		3,700	93	Continuing	TBD	
Fixed Seats	TBD				900	3,379		Continuing	TBD	
Vista Technologies						396			396	
Inflatable Restraints Early	C/CPIF	Sep 00	3,000	3,000	2,174			Continuing	TBD	
SDD										
SAIC						1,306	405	350	Continuing	TBD
Martin-Baker - JESP			5,250	5,250	5,250				5,250	
BF Goodrich/UPCO - JESP			5,250	5,250	5,250				5,250	
PNVG SDD		TBD					2,500		2,500	
ACES II P3I		TBD					1,500		1,500	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604706F Life Support Systems				412A		
(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
LESPA Block II SDD		TBD						700		700
Life Support Systems, TBD	TBD	TBD	2,500	2,500	1,586	160			Continuing	TBD
<u>Support and Management Organizations</u>										
Program Management			5,601	5,601	3,247	800	369	222	Continuing	TBD
Support										
Travel			1,273	1,273	716	283	34	38	Continuing	TBD
Tech Eng & Acq			6,941	6,941	5,095					5,095
<u>Test and Evaluation Organizations</u>										
Edwards Test Facility	AF 185		100	100					Continuing	TBD
ALEP Testing Agency	TBD							222	Continuing	TBD
Fixed Seats Testing Agency	TBD	TBD								
AFOTEC					62				Continuing	TBD
46th Test Wing					64				Continuing	TBD
AFFTC	Proj		3,146	3,146	3,146	200			Continuing	TBD
	Ord-Variou									
AL/CF	Various		179	179	179				Continuing	TBD
Navy Testing for Inflatable					173				Continuing	TBD
Holloman	Various		2,864	2,864	337	2,019			Continuing	TBD
AFRL (incl. Ejection Seat Effort)	Various		4,951	4,951	1,402				Continuing	TBD
(U) <u>Government Furnished Property:</u>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
ALEP		TBD			12	0	0		6	18

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
05 - Engineering and Manufacturing Development		0604706F Life Support Systems			February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
(U) <u>Government Furnished Property Continued:</u>						
<u>Support and Management Property</u>						
<u>Test and Evaluation Property</u>						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Total</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		51,478	12,951	8,805	443	TBD
Subtotal Support and Management		9,058	1,083	403	260	TBD
Subtotal Test and Evaluation		5,363	2,219		222	TBD
Total Project		65,899	16,253	9,208	925	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604727F Joint Standoff Weapons Systems	PROJECT 1000
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
1000 Joint Standoff Weapons Systems	1,412	0	0	0	0	0	0	0	194,340
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Joint Standoff Weapon (JSOW) is a joint USAF/USN program with the USN as the lead service. JSOW is a Global Position System aided Inertial Navigation System (GPS/INS) precision glide weapon with a stealthy, kinematically efficient airframe. JSOW provides all-weather launch/leave standoff capability to attack a variety of targets from outside enemy defenses. JSOW uses a common vehicle (truck) to deliver three different payloads. JSOW/A uses 145 BLU-97 Combined Effects Munitions for soft and area targets, JSOW/B uses 6 BLU-108 submunitions for attacking massed/mobile land-combat vehicles, and JSOW/C has a unitary BROACH warhead for harder/point targets (AF is not buying JSOW/C). The AF accepted its first JSOW in Nov 99. The F-16 (Block 50) is the threshold AF aircraft. JSOW will also be integrated on the B-1B, B-2, B-52, F-16C/D Blocks 40 and 30, F-15E, and JSF. The B-2 and F-16 are now JSOW capable. The B-52 and F-15E will be JSOW capable in FY02. JSOW/A is in Full Rate Production (FRP) and JSOW/B is in Low Rate Initial Production (LRIP). Both are purchased concurrently on the same JSOW contract. AF has over 100 JSOW in inventory. The current program is based on an USN buy of 13,000 (8,800 As, 1,200 Bs, 3,000 Cs) and an AF buy of 6,114 (3,000 As / 3,114 Bs). FY01 was the last year for JSOW AF RDT&E funds.

This program also includes the development of the JSOW Common Munitions Built-in Test Reprogramming Equipment (CMBRE) and software. The JSOW mission planning module and Precision Guided Munition Planning System (PGMPS) continues to be developed with the Air Force Mission Planning Support System (AFMSS) Aircraft/Weapons/Electronics (AWE) development. Through FY01, efforts included aircraft integration and JSOW/B BLU-108P3I testing.

JSOW AGM-154A&B are ACAT IC programs; AGM-154C (Navy only) is ACAT 1D.

(U) FY 2001 (\$ in Thousands)

- (U) \$1,000** Completed JSOW software improvements/upgrades; completed development/testing of AFMSS module for B-1B, F-15E, and F-16
- (U) \$412** Completed AGM-154B tests, including P3I Improved BLU-108 (IBLU) test, F-16 DT/OT and flight tests
- (U) \$1,412** Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																							
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604727F Joint Standoff Weapons Systems	PROJECT 1000																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>B. Budget Activity Justification</u> The RDT&E program element is in Budget Activity 5, EMD, because it supports the development of Air Force JSOW and BRU-57 and associated software, flight testing, and other developmental efforts.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 15%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">1,485</td> <td></td> <td></td> <td style="text-align: center;">194,340</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">1,498</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-13</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-53</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: center;">-20</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">1,412</td> <td></td> <td></td> <td style="text-align: center;">194,340</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> No significant changes.</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	1,485			194,340	(U) Appropriated Value	1,498				(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-13				b. Small Business Innovative Research	-53				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-20				e. Rescissions					(U) Adjustments to Budget Years Since FY 2002 PBR					(U) Current Budget Submit/FY 2003 PBR	1,412			194,340
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604727F Joint Standoff Weapons Systems				PROJECT 1000	
(U) D. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Missile Procurement, AF P-1 Line Item 5, JSOW									
(U) JSOW	52,893	53,609	72,805	119,686	237,094	256,427	250,886	954,012	1,997,412
(U) SEEK EAGLE	0	1,032	0	1,010	0	1,013	0	0	3,055
(U) E. Acquisition Strategy									
JSOW awarded a joint service contract to Raytheon for EMD. A Cost Plus Incentive Fee (CPIF) contract was awarded for AGM-154A Low Rate Initial Production (LRIP) I. For AGM-154A LRIP II, a Fixed Price Incentive Fee (FPIF) contract was awarded. Both LRIP contracts were conducted in a sole source environment. A sole source AGM-154A Full Rate Production (FRP) and AGM-154B LRIP contract (FFP) was awarded on Dec 98. A sole source AGM-154A FRP contract (FFP) was awarded on Dec 99. No FRP contract was awarded in FY01 due to JSOW control section problems. The control section problem has also caused a delay in AGM-154B MOT&E and Milestone III.									
(U) F. Schedule Profile									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1 2 3 4		1 2 3 4		1 2 3 4	
(U) Acquisition Milestones									
(U) BRU-57 Production Contract Award (Lot 3)					*				
(U) AGM 154A/B Production Contract Awards						X			
(U) T&E Milestones									
(U) AGAGM-154B MOT&E								X	
(U) AGM-154B Milestone III/FRP									X
(U)									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
05 - Engineering and Manufacturing Development				0604727F Joint Standoff Weapons Systems			1000				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Major Contracts					1,000		0			
(U)	Support Contracts					0		0			
(U)	Program Office Support/Other Government Support					412		0			
(U)	Test and Evaluation					0		0			
(U)	BRU-57					0		0			
(U)	Total					1,412		0			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Raytheon Sys. Co.	SS/CPIF	Jun 95	134,310	134,310	133,310	1,000			0	134,310
	Lockheed	FP/CPIF	Feb 95	16,750	16,750	16,750	0			0	16,750
	EDO/M Tech	FP/CPIF	Oct 95	7,447	7,447	7,447	0			0	7,447
	<u>Support and Management Organizations</u>										
	China Lake NWC	MIPR		N/A	N/A	5,925	0			0	5,925
	AAC/YH & Other			N/A	N/A	16,857	412			0	17,269
	<u>Test and Evaluation Organizations</u>										
	AAC, Eglin AFB	REO		N/A	N/A	7,714	0			0	7,714
	BRU-57 Misc.	REO/Other		N/A	N/A	562	0			0	562

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604727F Joint Standoff Weapons Systems				1000		
(U) Government Furnished Property:										
<u>Item</u>	<u>Contract</u>	<u>Method/Type</u>	<u>Award or</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>or Funding</u>	<u>Vehicle</u>	<u>Obligation</u>	<u>Delivery</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
			<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>										
Textron	FPIF		Mar 96	Various	4,363	0			0	4,363
<u>Support and Management Property</u>										
<u>Test and Evaluation Property</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					161,870	1,000			0	162,870
Subtotal Support and Management					22,782	412			0	23,194
Subtotal Test and Evaluation					8,276	0			0	8,276
Total Project					192,928	1,412			0	194,340

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges	PROJECT 2286
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2286 Combat Training Range Equipment	9,568	25,686	13,524	20,940	20,996	19,839	20,354	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY 2003, 652286, Combat Training Ranges includes new start efforts.

(U) A. Mission Description

Air Combat Training Systems (ACTS) provide equipment for Air Force combat training ranges to support mission training and evaluation of aircrews, as well as the operational testing of weapons systems and tactics under simulated combat conditions. This program develops the electronic, telecommunications, and instrumentation equipment/systems for the training ranges. ACTS are interoperable with Navy combat training ranges, and provide the capabilities to train aircrews in air-to-air combat, air-to-ground combat, and electronic warfare, while providing real-time monitoring and control of aircraft during large force exercises and recording events for post-mission debrief and analysis. This program element also funds aircraft/pod interfaces, software interoperability among service ranges and development and integration of the Range Security Initiative (RSI) for range/aircraft data links-specifically for the Nellis Air Combat Training System (NACTS) which supports Red Flag, Green Flag and USAF Fighter Weapons School training as well as funds a study to incorporate security initiatives into the Tyndall Range. Beginning in FY03 this program element will continue to evolve the Air Force acquisition program for rangeless training systems/capabilities which will be interoperable with the P4 Refurbishment Contract (P4RC) program. This next phase in the program will be known as P4RC Plus. This will fund the development of improved capabilities such as real time monitoring, kill notification, and no-drop weapon scoring for incorporation in future procurements. This program element develops advanced threat emitters. The Mini-Multiple Threat Emitter System (Mini-MUTES) Modernization program (M3P) upgrades existing equipment to satisfy Air Force electronic warfare training requirements. The required M3P upgrades will enable Mini-MUTES to simulate the latest, most lethal advanced surface-to-air threats. In FY03 the Advanced Threat Emitter System (ATES) will incorporate joint requirements and evolve into the Joint Threat Emitter (JTE) system. The JTE will continue the development program to provide a comprehensive suite of threat signals during simulated penetrations of hostile airspace for surveillance and bombing runs, for aircrew tactics and electronic combat training. JTE will complement existing threat simulators deployed on test and training ranges by emulating signals which simulate the most advanced air defense and threat radars.

Target System Development PE 64258F was consolidated into this PE starting in FY02. Aerial Targets are used to determine air-to-air weapons systems accuracy and reliability by developing improved aerial target systems for Air Force weapons system test and evaluation. It develops full-scale and subscale aerial targets, and target control systems. Specialized target payload subsystems are developed for requirements such as: missile scoring, electronic and infrared (IR) countermeasures, radar,

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604735F Combat Training Ranges	2286
(U) <u>A. Mission Description Continued</u> and IR signature augmentation, and chaff and flare dispensing.		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$551	Continued development of the RSI for NACTS/Tyndall Range	
(U) \$903	Continued Combat Training Range (CTR) basic operating support, and system acquisition and engineering support for range and threat systems	
(U) \$292	Continued interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development	
(U) \$778	Continued development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office	
(U) \$6,749	Continued Mini-(MUTES) Multiple Threat Emitter System Modification Program (M3P)	
(U) \$145	Continued Range Instrumentation Technical Support efforts	
(U) \$150	Continue Aerial Target basic operating support and system acquisition and engineering support.	
(U) \$9,568	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$3,938	Continue development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office and SECDEF F-22 Roadmap Study	
(U) \$10,830	Begin Advanced Threat Emitter System (ATES) development	
(U) \$3,700	Continue interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development	
(U) \$3,382	Complete development of RSI effort for NACTS/Tyndall Ranges	
(U) \$190	Continue Aerial Target basic operating support and system acquisition and engineering support.	
(U) \$145	Continue Range Instrumentation Technical Support efforts	
(U) \$3,501	Continue CTR basic operating support, and system acquisition and engineering support for range and threat systems	
(U) \$25,686	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$395	Begin P4RC Plus system development efforts	
(U) \$1,768	Continue development of aircraft interfaces with aircraft/Pod integration for range applications with aircraft program office.	
(U) \$2,543	Continue interoperability improvements with existing Air Force and Navy ranges to include software, upgrades, and weapons simulation development	
Project 2286	Page 2 of 7 Pages	Exhibit R-2 (PE 0604735F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																																		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604735F Combat Training Ranges		PROJECT 2286																																																																	
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands) Continued</u></p> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">(U) \$145</td> <td>Continue Range Instrumentation Technical Support efforts</td> </tr> <tr> <td>(U) \$3,725</td> <td>Continue CTR basic operating support and system acquisition and engineering support for range and threat systems</td> </tr> <tr> <td>(U) \$4,757</td> <td>Continue ATES development to incorporate joint requirements and evolve to a Joint Threat Emitter (JTE) System.</td> </tr> <tr> <td>(U) \$191</td> <td>Continue Aerial Target basic operating support and system acquisition and engineering support</td> </tr> <tr> <td>(U) \$13,524</td> <td>Total</td> </tr> </table> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in budget activity 5 - Engineering and Manufacturing Development because the Combat Training Ranges (CTR) Program directly contributes to the effectiveness and survivability of US combat forces by developing range instrumentation and training systems to increase the effectiveness of the training spectrum from individual aircrew skill training to large-scale exercises.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:55%;"></th> <th style="width:10%; text-align: center;"><u>FY 2001</u></th> <th style="width:10%; text-align: center;"><u>FY 2002</u></th> <th style="width:10%; text-align: center;"><u>FY 2003</u></th> <th style="width:15%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">16,407</td> <td style="text-align: right;">25,943</td> <td style="text-align: right;">19,000</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">16,559</td> <td style="text-align: right;">25,943</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-152</td> <td style="text-align: right;">-257</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-561</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td style="text-align: right;">-78</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-6,200</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: right;">-5,476</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">9,568</td> <td style="text-align: right;">25,686</td> <td style="text-align: right;">13,524</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p>FY01 includes \$4.0M Congressional Plus-Up to continue development for Range Security Initiative for NACTS.</p> <p>FY01 reduced \$0.078M reprogrammed to purchase AF Wide Oracle Enterprise License.</p> <p>FY01 reduced \$6.2M by FY02 Congressional Rescission of Joint Tactical Combat Training System (JTCTS) funds; these JTCTS funds were not appropriated in FY01.</p>				(U) \$145	Continue Range Instrumentation Technical Support efforts	(U) \$3,725	Continue CTR basic operating support and system acquisition and engineering support for range and threat systems	(U) \$4,757	Continue ATES development to incorporate joint requirements and evolve to a Joint Threat Emitter (JTE) System.	(U) \$191	Continue Aerial Target basic operating support and system acquisition and engineering support	(U) \$13,524	Total		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	16,407	25,943	19,000	TBD	(U) Appropriated Value	16,559	25,943			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-152	-257			b. Small Business Innovative Research	-561				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-78				e. Rescissions	-6,200				(U) Adjustments to Budget Years Since FY 2002 PBR			-5,476		(U) Current Budget Submit/FY 2003 PBR	9,568	25,686	13,524	TBD
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Project 2286	Page 3 of 7 Pages	Exhibit R-2 (PE 0604735F)																																																																		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604735F Combat Training Ranges				PROJECT 2286	
(U) C. Program Change Summary (\$ in Thousands) Continued									
(U) Significant Program Changes Continued:									
FY03 reduced \$5.280M transferred to Combat Training Ranges APAF and OPAF accounts for P4RC Plus.									
FY03 reduced \$0.163M for Advisory & Assistance Support (AAS).									
FY03 reduced \$0.033 for Inflation									
(U) D. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) PE27429F: Appn: Other Procurement, AF (OPAF) Program Title: Combat Training Ranges	44,774	62,530	17,242	21,658	19,681	20,263	20,392	Continuing	TBD
(U) Initial Spares	2,731	785	781	799	814	830	846	Continuing	TBD
(U) Total OPAF	47,505	63,315	18,023	22,457	20,495	21,093	21,238	Continuing	TBD
(U) PE27429F: Appn: Aircraft Procurement, AF(APAF), Program Title: Combat Training Ranges	6,744	15,890	14,430	12,625	13,076	14,739	15,210	Continuing	TBD
(U) Initial Spares	1,256	1,379	1,385	1,415	1,446	1,475	1,504	Continuing	TBD
(U) Total APAF	8,000	17,269	15,815	14,040	14,522	16,214	16,714	Continuing	TBD
(U) PE35116F: Appn: Aircraft Procurement, AF (APAF), Program title: Aerial Targets	22,884	34,784	30,586	51,180	38,574	39,319	40,067	Continuing	TBD
(U) Initial Spares	610	101	820	991	494	494	494	Continuing	TBD
(U) Total APAF	23,494	35,585	31,406	52,171	39,068	39,813	40,561	Continuing	TBD
(U) E. Acquisition Strategy									
The acquisition strategy is competitive, with cost plus and fixed price contracts.									
Project 2286			Page 4 of 7 Pages				Exhibit R-2 (PE 0604735F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
05 - Engineering and Manufacturing Development					0604735F Combat Training Ranges					2286				
(U) <u>F. Schedule Profile</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U)	Nellis Air Combat Training System (NACTS)													
(U)	NACTS Range Security Initiative (RSI) Contract Award													
(U)	Mini-Mutes Multiple Threat Emitter (M3P) Development													
(U)	Field Testing													
(U)	Production Decision													
(U)	IOC													
(U)	ATES/JTE Development													
(U)	Development Contract Award													
(U)	Joint Service Range Software Interoperability													
(U)	Surface Instrumentation Subsystem Software Support Activities													
(U)	Tactical Airborne Subsystem Software Support Activities (On-going)													
(U)	Weapon Sims Integration into Cntrl & Computation Sys (CCS)													
	Baseline													
(U)	P4RC Plus Development													
(U)	Contract Award													
(U)	AIRCRAFT INTEGRATION EFFORT													
(U)	F-15 C/D Suite 4 Software Upgrade													
(U)	F-15E Suite 4+ Software Upgrade													
(U)	F-15 C/D Suite 5 Software Upgrade													
(U)	Begin F-16 M2.3+, M3.3+ Software Upgrade (On-going Process thru FY03)													
(U)	Begin Pod to Aircraft Software Development (On-going Process)													
(U)	* = Completed event													
(U)	X = Planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development					0604735F Combat Training Ranges			2286			
(U) A. Project Cost Breakdown (\$ in Thousands)											
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>	
(U)	Aircraft Interface Development				778		3,738			1,768	
(U)	Mini-Mutes Modification Program (M3P)				6,749		0			0	
(U)	ATES/JTE System Development				0		10,556			4,757	
(U)	Joint Service Interoperability Improvements				292		3,700			2,543	
(U)	Range Instrumentation Technical Support (RITS)				145		145			145	
(U)	Combat Training Ranges Program Office Support				903		3,975			3,725	
(U)	Aerial Target Program Office Support				150		190			191	
(U)	NACTS Range Security Initiative (RSI) Development				551		3,382			0	
(U)	P4RC Plus Development				0		0			395	
(U)	Total				9,568		25,686			13,524	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Cubic Defense (NACTS)	C/CPAF/FFP	Mar 95			31,149	551	3,382	0	0	35,082
	Raytheon (JTCTS)	Navy Contr	Mar 95			2,500	0	0	0	0	2,500
	Sverdrup (RITS)	CPAF	Oct 00			2,385	145	145	145	Continuing	TBD
	TBD (P4RC Plus)	TBD	2nd Qtr 03			0	0	0	395	Continuing	TBD
	Harris Corp (M3P)	CPFF	May 98			380	6,649	0	0	0	7,029
	TBD (ATES/JTE System)	CPAF	2nd Qtr 02			0	0	10,346	4,757	Continuing	TBD
	Joint Interoperability	Navy Contract	Mar 97			3,429	292	3,700	2,543	Continuing	TBD
	Aircraft Interface	Through MOAs with	Jun 96			1,035	778	3,738	1,768	Continuing	TBD
Project 2286					Page 6 of 7 Pages			Exhibit R-3 (PE 0604735F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development				0604735F Combat Training Ranges			2286		
(U) <u>Performing Organizations Continued:</u>									
<u>Product Development Organizations</u>									
ALCs &									
Aircraft SPO									
Contractors									
<u>Support and Management Organizations</u>									
OO/ALC/LH, Hill AFB, UT	Various		0	100	210	286	Continuing	TBD	
AAC/WRR, Eglin AFB, FL	Various		8,576	903	3,975	3,439	Continuing	TBD	
AAC/WRA, Eglin AFB, FL	Various		0	150	190	191	Continuing	TBD	
NAWC, China Lake, CA	Various		113	0	0	0	0	113	
<u>Test and Evaluation Organizations</u>									
AAC/WRR, Eglin AFB, FL	Various		1,405	0	0	0	Continuing	TBD	
46 Test Wing, Eglin AFB FL	Various		640	0	0	0	Continuing	TBD	
(U) <u>Government Furnished Property:</u>									
<u>Contract</u>									
<u>Method/Type</u> <u>Award or</u>									
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				40,878	8,415	21,311	9,608	TBD	TBD
Subtotal Support and Management				8,689	1,153	4,375	3,916	TBD	TBD
Subtotal Test and Evaluation				2,045	0	0	0	TBD	TBD
Total Project				51,612	9,568	25,686	13,524	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	7,664	5,783	226	244	263	266	272	Continuing	TBD
2523 Product Lines	213	224	226	244	263	266	272	Continuing	TBD
2524 Reuse and Component Support	7,451	5,559	0	0	0	0	0	0	13,010
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>(U) A. Mission Description The goal of the IC2A Program is to reduce the development time, costs, and risks associated with the acquisition and development of an enterprise oriented C2 capability by defining a reference architecture to enhance a common application use and reuse. Project 2523 minimizes development cost and time by defining a C2 architecture approach, supporting Defense Information Infrastructure Common Operating Environment (DII COE) acceptance testing to ensure compliance and interoperability, and providing tested, reusable software components from mature programs. The use of common product line designs during development based on a C2 reference architecture can improve software quality, interoperability and reliability while reducing fielding times and overall life cycle costs. Project 2524, Reuse and Component Support (RCS) identifies, tests, and provides reusable software components and products to the IC2A program. The RCS project developed a software reuse strategy for the DoD; and is developing a National Product Line Asset Center (NPLACE), a Congressional special interest item, to evaluate and analyze enterprise C2 system components based on primarily commercial off-the-shelf (COTS) products. The IC2A program has determined that over 80% of the functionality of any command center software is common to all command centers. For programs using product line concepts based on a C2 reference architecture.</p> <p>(U) B. Budget Activity Justification Program is in Budget Activity 5 - Engineering and Manufacturing Development due to the nature of the effort.</p>									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
05 - Engineering and Manufacturing Development		0604740F Integrated Command & Control Applications			
(U) C. Program Change Summary (\$ in Thousands)					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	213	224	243	TBD
(U)	Appropriated Value	7,664	5,824		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions		-41		
	b. Small Business Innovative Research				
	c. Omnibus or Other Above Threshold Reprogram				
	d. Below Threshold Reprogram				
	e. Rescissions				
(U)	Adjustments to Budget Years Since FY 2002 PBR			-17	TBD
(U)	Current Budget Submit/FY 2003 PBR	7,664	5,783	226	TBD
(U)	<u>Significant Program Changes:</u>				
	Congress added \$7.8 million in FY2001 to BPAC 652524, Reuse and Component Support.				
	Congress added \$5.6 million in FY2002 to BPAC 652524 for ASSET, NPLACE, and AF Product Line Engineering (Reuse and Component Support).				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications	PROJECT 2523
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2523 Product Lines	213	224	226	244	263	266	272	Continuing	TBD

(U) **A. Mission Description**
 The software architecture, developed by the Product Lines Project, forms a vital component of the Integrated Command and Control Applications (IC2A) program by providing pre-defined reference architecture as a foundation for a DoD enterprise C2 capability. Using rapid prototyping techniques, a contractor can quickly tailor a reference architecture-based C2 component to the warfighter's needs and deliver an integrated, combat-ready system. All product lines and components are based on Defense Information Infrastructure Common Operating Environment (DII COE) principles to ensure joint compliance and interoperability; make maximum use of open system architectures, industry standards, Commercial off-the-shelf (COTS) products, and government furnished equipment; and incorporate multilevel security (MLS) features. This effort ensures that components and systems are developed with a view of operating within a C2 enterprise instead of stovepipe functionality. Contractors develop and maintain a common integrated infrastructure in a collaborative, synergistic environment using validated, mature software engineering processes to help ensure the quality of the designs and components. Reference architecture based designs and tested software components reduce development costs, risks and time for the user. New technologies, capabilities, and incremental developments are assessed and integrated into the architecture and components design as part of the product line development process to minimize any impact to the user.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$213 Qualify components for product lines.
 (U) \$213 Total

(U) **FY 2002 (\$ in Thousands)**
 (U) \$224 Qualify components for product lines.
 (U) \$224 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$226 Quality components for product lines.
 (U) \$226 Total

(U) **B. Project Change Summary**

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications				PROJECT 2523		
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) Not applicable										
(U) D. Acquisition Strategy										
All major contracts within PE 0604740F were awarded after full and open competition.										
(U) E. Schedule Profile										
			<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
			1	2	3	4	1	2	3	4
(U)	Product Line Component Qualification (Ongoing)		*	*	*	*	*	X	X	X
	* - Completed Event									
	X - Planned Event									
	IC2A is a support and management level of effort program. All activities are ongoing.									
Project 2523			Page 4 of 10 Pages				Exhibit R-2A (PE 0604740F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development					0604740F Integrated Command & Control Applications			2523		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Product Line Component Qualification					213		224		226
(U)	Total					213		224		226
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Performing Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Hughes	CPFF	19 Dec 92	N/A	N/A	453	0	0	0	0	453
Raytheon	CPFF	19 Dec 92	N/A	N/A	1,000	0	0	0	0	1,000
AGCS	CPFF	Dec 94	N/A	N/A	50	0	0	0	0	50
TRW	CPFF	12 Feb 97	N/A	N/A	0	0	0	0	0	0
Unisys	CPFF	29 Sep 93	N/A	N/A	30	0	0	0	0	30
Contractor Support	ITSP	Various	N/A	N/A	0	0	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
Program Office Support	Various	Various	N/A	N/A	874	213	224	226	0	1,537
<u>Test and Evaluation Organizations</u>										
Not applicable.										
(U) Government Furnished Property:										
<u>Item</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
05 - Engineering and Manufacturing Development				February 2002					
PE NUMBER AND TITLE				PROJECT					
0604740F Integrated Command & Control Applications				2523					
(U) Government Furnished Property Continued:									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Obligation</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
N/A									
<u>Support and Management Property</u>									
N/A									
<u>Test and Evaluation Property</u>									
N/A									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				1,533	0	0	0	TBD	TBD
Subtotal Support and Management				874	213	224	226	0	1,537
Subtotal Test and Evaluation									
Total Project				2,407	213	224	226	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications	PROJECT 2524
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2524 Reuse and Component Support	7,451	5,559	0	0	0	0	0	0	13,010

(U) A. Mission Description

The Reuse and Component Support project identifies, tests, and provides a set of common integrated infrastructure products for use by Air Force and Department of Defense program offices. This requires industry involvement for technology development and knowledge of direct and indirect impact to DoD missions in order to provide a skillful technical transition to fully state-of-the-art enterprise C2-based warfighting capability. Reuse and component architecture builds on the AF technical architecture and provides those pre-defined product line architectures with tested, reusable software components from mature programs. A software reuse strategy for DoD was developed as part of this effort. Efforts are continuing with development of a Product Line Asset Center Software Reuse Repository to evaluate and analyze enterprise C2 system components based on primarily commercial off-the-shelf (COTS) products through the National Product Line Asset Center (NPLACE) cooperative agreement. NPLACE functions include the application of standards compliance testing to ensure greatest interoperability among C2 systems.

(U) FY 2001 (\$ in Thousands)

- (U) \$4,648 ASSET**
- (U) \$1,873 NPLACE**
- (U) \$930 AF Product Line Engineering**
- (U) \$7,451 Total**

(U) FY 2002 (\$ in Thousands)

- (U) \$2,581 ASSET**
- (U) \$1,985 NPLACE**
- (U) \$993 AF Product Line Engineering**
- (U) \$5,559 Total**

(U) FY 2003 (\$ in Thousands)

- (U) \$0 No Activity**
- (U) \$0 Total**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002																																										
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications				PROJECT 2524																																									
<p>(U) <u>B. Project Change Summary</u> Congress added \$7.8 in FY2001 for Reuse and Component Support.</p> <p>Congress added \$5.6 in FY2002 for ASSET, NPLACE, and AF Product Line Engineering (Reuse and Component Support).</p>																																																	
<p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) Not applicable</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) Not applicable																			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																								
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																									
(U) Not applicable																																																	
<p>(U) <u>D. Acquisition Strategy</u> Not applicable.</p>																																																	
<p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th colspan="4" style="width:40%;"><u>FY 2001</u></th> <th colspan="4" style="width:40%;"><u>FY 2002</u></th> <th colspan="1" style="width:5%;"></th> <th colspan="4" style="width:40%;"><u>FY 2003</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) Not applicable.</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>											<u>FY 2001</u>				<u>FY 2002</u>					<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) Not applicable.												
	<u>FY 2001</u>				<u>FY 2002</u>					<u>FY 2003</u>																																							
	1	2	3	4	1	2	3	4	1	2	3	4																																					
(U) Not applicable.																																																	
Project 2524			Page 8 of 10 Pages				Exhibit R-2A (PE 0604740F)																																										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604740F Integrated Command & Control Applications				2524		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			
(U)	Enterprise-wide Asset Identification (ASSET)				4,648	2,581	0			
(U)	Product Line Suitability Testing (NPLACE)				1,873	1,985	0			
(U)	Product Line Engineering				930	993	0			
(U)	Total				7,451	5,559	0			
Congress added \$7.8 million in FY2001 for Reuse and Component Support.										
Congress added \$5.6 million in FY2002 for ASSET, NPLACE, and AF Product Line Engineering (Reuse and Component Support).										
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
West Virginia High Technology Center	FFP	18 Nov 96	N/A	N/A	0	1,730	1,826	0	0	3,556
Raytheon/Hughes/TRW	CPFF	20 Feb 97	N/A	N/A	0	0	0	0	0	0
SAIC	ITSP	Various	N/A	N/A		3,850	2,323	0		6,173
ProLogic	FFP	Various	N/A	N/A		855	913	0		1,768
Contractor Support	ITSP	Various	N/A	N/A	0	374	0	0	0	374
<u>Support and Management Organizations</u>										
Horizons Tech, Inc.						642	497	0	0	1,139
<u>Test and Evaluation Organizations</u>										
Not applicable.										
Project 2524					Page 9 of 10 Pages			Exhibit R-3 (PE 0604740F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE					
BUDGET ACTIVITY				PROJECT					
05 - Engineering and Manufacturing Development				February 2002					
PE NUMBER AND TITLE				PROJECT					
0604740F Integrated Command & Control Applications				2524					
(U) Government Furnished Property:									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Vehicle</u>		<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
Not applicable.									
<u>Support and Management Property</u>									
Not applicable.									
<u>Test and Evaluation Property</u>									
Not applicable.									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Not applicable.									
Subtotal Product Development				0	6,809	5,062	0	0	11,871
Subtotal Support and Management					642	497	0	0	1,139
Subtotal Test and Evaluation									
Total Project				0	7,451	5,559	0	0	13,010

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604750F Intelligence Equipment	PROJECT 2053
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2053 National Air Intel Center	4,580	1,806	1,326	1,349	1,374	1,400	1,427	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 Intelligence Equipment (IE) provides continuing development and upgrades of threat analysis capabilities of the National Air Intelligence Center (NAIC) and Air Force Information Warfare Center (AFIWC). Both organizations are tasked with providing detailed foreign technology intelligence information to a variety of DOD and non-DOD customers. In the past few years, customers' requirements have been more sophisticated, dictating more detailed and timely intelligence not only in the technology regime but also in the economic, world crisis, and political arenas. IE provides NAIC and AFIWC with the tools necessary to produce timely intelligence of foreign weapon systems and develops the tools to model and assess foreign airborne and aerospace systems. This is the only AF program developing new, or upgraded analysis, modeling and simulation tools focused on intelligence production in support of AF developmental and operational functions. IE directs the engineering and development of specialized hardware and software to conduct Information Operations (IO) with systems which process, integrate, display, and distribute intelligence data/ information for HQ ACC, the Air Intelligence Agency (AIA) -- primarily their NAIC and AFIWC subordinates.

- (U) **FY 2001 (\$ in Thousands)**
- (U) \$257 Completed Advanced Infrared Countermeasures Systems Assessment Model (AIRSAM) Update
 - (U) \$159 Completed Radio Frequency Weapons Modeling Improvements (HEIMDAL v 2.0+)
 - (U) \$168 Continued High Speed Engine Propulsion Modeling (Phase 1: Pulsed-Detonation Engine Model)
 - (U) \$289 Continued Missile System (Phase 1: DIODE Objectives Model [DOM])
 - (U) \$46 Completed Missile System (Phase 2: MiTAS)
 - (U) \$311 Initiated Standard Visualization Solution (SVS) - IVIEW 2000 Upgrade/IView
 - (U) \$3,350 Initiated Radio Frequency Weapon Threat Assessment (RFWA Program) (Congressional Plus-up)
 - (U) \$4,580 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
05 - Engineering and Manufacturing Development	0604750F Intelligence Equipment	February 2002 2053
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$500 Complete Radio Frequency Weapon Threat Assessment (RFA Program) (Congressional Plus-up)</p> <p>(U) \$136 Continue High Speed Engine Propulsion Modeling Tools (Phase 1: Pulsed Detonation Engine Model)</p> <p>(U) \$237 Initiate High Speed Engine Propulsion Modeling Tools (Phase 2: Air Turbo-Rocket Engine Model)</p> <p>(U) \$137 Initiate High Speed Engine Propulsion Modeling Tools (Phase 3: Turbo-Ramjet Engine Model)</p> <p>(U) \$227 Complete Missile System (Phase 1: DIODE Objectives Model [DOM])</p> <p>(U) \$113 Continue Standard Visualization Solution (SVS) - IVIEW 2000 Upgrade/JView</p> <p>(U) \$212 Initiate Missile System Upgrades (Phase 3: CRMPS [Computer Requirements Model for Payload Study])</p> <p>(U) \$212 Initiate Missile System Upgrades (Phase 4: BRACE [Ballistic Reentry Vehicle Accuracy Estimate])</p> <p>(U) \$32 Initiate Advanced Analysis Capabilities (AAC) - Integrated Avionics Support (IAS)</p> <p>(U) \$1,806 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$97 Complete High Speed Engine Propulsion Tools (Phase 1: Pulsed-Detonation Engine Model)</p> <p>(U) \$218 Complete High Speed Engine Propulsion Tools (Phase 2: Air-Turbo-Rocket Engine Model)</p> <p>(U) \$98 Continue High Speed Engine Propulsion Tools (Phase 3: Turbo-Ramjet Engine Model)</p> <p>(U) \$138 Initiate High Speed Engine Propulsion Tools (Phase 4: SCRAM Jet Engine Model)</p> <p>(U) \$137 Continue Standard Visualization Solution (SVS) - IVIEW 2000 Upgrade/JView</p> <p>(U) \$248 Continue Missile System Upgrades (Phase 3: CRMPS (Computer Requirements Model for Payload Study))</p> <p>(U) \$218 Continue Missile System Upgrades (Phase 4: BRACE (Ballistic Reentry Vehicle Accuracy Estimate))</p> <p>(U) \$138 Continue Advanced Analysis Capabilities (AAC) -- Integrated Avionics Support (IAS)</p> <p>(U) \$34 Initiate Laser Weapons (LODUR) Threat Assessment Tool</p> <p>(U) \$1,326 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This effort is Budget Activity 5, Engineering & Manufacturing Development, because the program develops and inserts new technology into existing systems and models to keep existing systems current.</p>		
Project 2053	Page 2 of 7 Pages	Exhibit R-2 (PE 0604750F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604750F Intelligence Equipment				2053		
(U) <u>C. Program Change Summary (\$ in Thousands)</u>										
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			<u>Total Cost</u>	
(U)	Previous President's Budget			1,298	1,323	1,347			TBD	
(U)	Appropriated Value			4,798	1,323					
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions				483					
	b. Small Business Innovative Research			-147						
	c. Omnibus or Other Above Threshold Reprogram									
	d. Below Threshold Reprogram			-27						
	e. Rescissions			-44						
(U)	Adjustments to Budget Years Since FY 2002 PBR					-21				
(U)	Current Budget Submit/FY 2003 PBR			4,580	1,806	1,326			TBD	
(U)	<u>Significant Program Changes:</u>									
	Funding: Congressional \$.5M add in FY02 for Radio Frequency Weapon Threat Assessment (RFAW Program).									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	Not Applicable									
(U) <u>E. Acquisition Strategy</u>										
	All major contracts within this Program Element were awarded after full and open competition.									
(U) <u>F. Schedule Profile</u>										
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4	1
						*				
(U)	Completed Advanced IRCM Systems Assessment Model (AIRSAM) Update									
(U)	Completed Radio Frequency Weapons Modeling Improvements (HEIMDALL-2+)									
(U)	Complete HiSpeed Propulsion(HSP)/Pulsed Detonated Engine Model									
										X
Project 2053				Page 3 of 7 Pages				Exhibit R-2 (PE 0604750F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
05 - Engineering and Manufacturing Development					0604750F Intelligence Equipment					2053				
(U) <u>F. Schedule Profile Continued</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) (Ph 1)														
(U) Begin/Complete HSP/Air-Turbo Rocket Engine Model (Ph 2)						X						X		
(U) Begin HSP/ Turbo-Ramjet Engine Model (Ph 3)								X						
(U) Begin HSP/Scramjet Engine Model (Ph 4)											X			
(U) Complete Missile System / Phase 1: DIODE Objectives Model (DOM)								X						
(U) Completed Missile System / Phase 2: MiTAS				*										
(U) Continue IVIEW 2000 Upgrade/JView Std Visualization Solution (SVS)														
(U) Begin Advanced Analysis Capabilities (AAC) - Integrated Avionics Supt								X						
(U) Begin/Complete Radio Frequency Weapon Threat Assessment (RFA)				*				X						
(U) Begin Missile System /Phase 3: CRMPS								X						
(U) Begin Missile System/Phase 4: BRACE								X						
(U) Begin Laser Weapons (LODUR) Threat Assessment Tool												X		
Note: * denotes completed event, X denotes planned event.														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development				0604750F Intelligence Equipment			2053			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Adv IRCM Systems Assessment Model (AIRSAM) Update				257					
(U)	Radio Frequency Weapon Modeling Improvements (HEIMDALL 2+)				159					
(U)	High Speed Propulsion / P1: Pulsed Detonation Engine Model				168		136			97
(U)	High Speed Propulsion / P2: Air Turbo Rocket Engine Model						237			218
(U)	High Speed Propulsion / P3: Turbo-Ramjet Engine Model						137			98
(U)	High Speed Propulsion / P4: Scram Jet Engine Model									138
(U)	Missile System / Phase 1: DIODE Objectives Model (DOM)				289		227			
(U)	Missile System / Phase 2: MiTAS				46					
(U)	Missile System / Phase 3: CRMPS						212			248
(U)	Missile System/ Phase 4: BRACE						212			218
(U)	IVIEW 2000 Upgrade / JView - Standard Visualization Solution				311		113			137
(U)	Terrorist RF Weapon Threat Assessment				3,350		500			
(U)	Adv Analysis Capability: Integrated Avionics Support Model						32			138
(U)	Laser Weapons (LODUR) Threat Assessment Tool									34
(U)	Total				4,580		1,806			1,326
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Sterling Software, Inc	CPFF	Sep 99	N/A	N/A	281	257			0	538
98-D-0318/06 (AIRSAM)										
Applied Sciences Laboratory	CPFF	26 May 99	N/A	N/A	226	159			0	385
97-C-0036/02 (RF Weapons)										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002	
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development				0604750F Intelligence Equipment				2053	
(U) <u>Performing Organizations Continued:</u>									
<u>Product Development Organizations</u>									
Applied Sciences Laboratory	CPFF	31 Jul 01	N/A	N/A	3,350	500	0	3,850	
01-C-0187 (RFWA Program)									
Calspan Veridian Corporation	CPFF	31 Jul 98	N/A	N/A	289	227	0	516	
99-DC-0050 (Phase 1: Missile System [(DOM])									
Sterling Software, Inc/Pratt & Whitney Corp	CPFF	12 Feb 99	N/A	N/A	168	137	97	0	402
98-D-0318/02 (HSP-P-DE) - (Phase 1: High Speed Propulsion /Pulsed Detonation)									
TBD - Phase 2: High Speed Propulsion (ATR)	TBD	TBD	N/A	N/A		237	218	0	455
TBD - Phase 3: High Speed Propulsion (T-R)	TBD	TBD	N/A	N/A		136	98	Continuing	TBD
TBD - Phase 4: High Speed Propulsion (Scram-Jet)	TBD	TBD	N/A	N/A			138	Continuing	TBD
SAIC 99-D-0137/04	(- IDIQ/CPFF)	22 Dec 00	N/A	N/A	46		0	46	
Missile System / Phase 2: MiTAS)									
TBD - Missile System / Phase 3: CRMPS	TBD	TBD	N/A	N/A		212	248	Continuing	TBD
TBD - Missile System/ Phase 4: BRACE	TBD	TBD	N/A	N/A		212	218	Continuing	TBD
PAR Govt. Systems 5008 & AFRL/IFSB (In-House) -(IVIEW 2000 Upgrade/JView SVS)	CPFF	8 Dec 00	N/A	N/A	311	113	137	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604750F Intelligence Equipment				2053		
(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
TBD - Adv Analysis	TBD	TBD	N/A	N/A	32	138	Continuing	TBD		
Capability: Integrated Avionics Support Model										
TBD - Laser Weapons						34	Continuing	TBD		
(LODUR) Threat Assessment Tool										
<u>Support and Management Organizations</u>										
N/A										
<u>Test and Evaluation Organizations</u>										
N/A										
(U) <u>Government Furnished Property:</u>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
N/A										
<u>Support and Management Property</u>										
N/A										
<u>Test and Evaluation Property</u>										
N/A										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					507	4,580	1,806	1,326	TBD	TBD
Subtotal Support and Management										
Subtotal Test and Evaluation										
Total Project					507	4,580	1,806	1,326	TBD	TBD
Project 2053					Page 7 of 7 Pages			Exhibit R-3 (PE 0604750F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604754F Tactical Data Link Integration					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	8,397	16,838	0	0	0	0	0	Continuing	TBD
4749 Link 16 System Integration	7,797	7,874	0	0	0	0	0	Continuing	TBD
4992 Family of Interoperable Operational Pictures (FIOP)	0	8,964	0	0	0	0	0	Continuing	TBD
P771 JTIDS	600	0	0	0	0	0	0	0	464,501
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY02, Link 16 received \$71.0M as part of the Defense Emergency Relief Fund (DERF). Funding was used to: upgrade operational support equipment; accelerate terminal installations; acquire interim datalink management tools, coprocessors and gateways; and provide interoperability and operational support for Link-16. This was in support of operation Enduring Freedom. This funding is not reflected in the FY02 program total.

In FY 2003:

- a. #652189, JINTACCS efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655049, JINTACCS;
- b. #654749, Link 16 System Integration efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655050, TDL System Integration; and
- c. #654992, Family of Interoperable Operational Pictures (FIOP) efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655051, Family of Interoperable Operational Pictures (FIOP).

This was done in order to comply with CSAF 17 Apr 01 direction to consolidate tactical data link/Link 16 funding and manage tactical data links as an enterprise.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																								
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Tactical Data Link Integration																																									
<p>(U) <u>A. Mission Description</u> Tactical Data Link (TDL) integration employs the Joint Tactical Information Distribution System (JTIDS) and the Multifunction Information Distribution System (MIDS) terminals on multi-service platforms to broadcast Link 16 information to all participants operating within the network . TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDL terminals are used by the Air Force, Army, Navy, and Marine Corps Theater Command and Control (C2) elements, weapons platforms, and sensors.</p> <p>The number of Air Force platforms hosting Link 16 is expanding, from C2 aircraft (E-3, E-8, etc.) into the fighter, bomber, sensor, tanker, and other tactical fleets (F-15, F-16, F-22, RJ, ABCCC, B-1, B-2, B-52, etc.). Utilization of Link 16 in a joint environment requires the integration of terminals into these host platforms, and interoperability of Link 16 nets across all deployed joint and allied platforms. Cross-platform activities performed by the Tactical Data Links (TDL) System Program Office (SPO) include: integration efforts encompassing hardware, software, operational, and logistics development, certification of individual Link 16 implementations to joint and allied standards, establishment of Service wide net management procedures and operations, system wide enhancements and improvements, and test and sustainment activities. In addition, the SPO is supporting the integration of Link 16 into the Iceland Air Defense System (IADS) and has management responsibility for the Air Force's Air Defense System Integration (ADSI) systems. The Single Integrated Air Picture (SIAP) efforts will lead to the joint development of improvements to TDLs to better support the warfighter by ensuring that the air picture is composed of common, continual, unambiguous, tracks of all airborne objects. The Family of Interoperable Operational Pictures (FIOP) efforts ensures that the total air, sea, and land situational awareness picture is unified and provided to all forces operating within the TDL network.</p>																																										
<p>(U) <u>B. Budget Activity Justification</u> This program is in budget activity 5 (Engineering Manufacturing and Development) because it supports development, integration solutions, fielding, operational support activities, and support of special projects.</p>																																										
<p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">8,745</td> <td style="text-align: center;">17,648</td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">8,745</td> <td style="text-align: center;">17,648</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-80</td> <td style="text-align: center;">-810</td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: center;">-268</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	8,745	17,648		TBD	(U) Appropriated Value	8,745	17,648			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-80	-810			b. Small Business Innovative Research	-268				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram				
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																						
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Page 2 of 18 Pages		Exhibit R-2 (PE 0604754F)																																								

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
BUDGET ACTIVITY		PE NUMBER AND TITLE		
05 - Engineering and Manufacturing Development		0604754F Tactical Data Link Integration		
(U) C. Program Change Summary (\$ in Thousands) Continued				
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
				<u>Total Cost</u>
	e. Rescissions			
(U)	Adjustments to Budget Years Since FY 2002 PBR			
(U)	Current Budget Submit/FY 2003 PBR	8,397	16,838	TBD
(U)	<u>Significant Program Changes:</u>			
	In FY 2003:			
	a. #652189, JINTACCS efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655049, JINTACCS;			
	b. #654749, Link 16 System Integration efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655050, TDL System Integration; and			
	c. #654992, Family of Interoperable Operational Pictures (FIOP) efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655051, Family of Interoperable Operational Pictures (FIOP).			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604754F Tactical Data Link Integration				PROJECT 4749	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4749 Link 16 System Integration	7,797	7,874	0	0	0	0	0	Continuing	TBD
<p>In FY 2003, #654749, Link 16 System Integration efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655050, TCL System Integration, in order to consolidate the three Link 16 infrastructure PEs into one and manage tactical data links as an enterprise.</p> <p>(U) A. Mission Description Tactical Data Links (TDLs) are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs are used by the Air Force, Army, Navy, and Marine Corps theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Enhanced Position Location Reporting System (EPLRS), and Common Data Link (CDL).</p> <p>The number of Air Force platforms hosting TDLs are expanding from C2 aircraft (E-3, E-8, etc.) into the fighter, bomber, sensor, tanker, airlift and other tactical fleets (F-15, F-16, F-22, RJ, ABCCC, B-1, B-2, B-52, etc.). Utilization of TDLs in a joint environment requires the integration of terminals into these host platforms and interoperability of TDL networks across all deployed joint and allied platforms. Cross-platform activities performed by the Tactical Data Links System Program Office (SPO) include: integration efforts encompassing hardware, software, operational, and logistics development, certification of individual TDL implementations to joint and allied standards, establishment of Service wide net management procedures and operations, system wide enhancements and improvements, and test and sustainment activities. In addition, the SPO is supporting the integration of TDL into the Iceland Air Defense System (IADS) and has management responsibility for the Air Force's Air Defense System Integrator (ADSI). The Single Integrated Air Picture (SIAP) efforts will lead to the joint development of near real-time and real-time data from multiple sensors and TDLs. This will enhance the air picture provided to the warfighter by ensuring a common, continual, and unambiguous, tracks of all airborne objects.</p> <p>(U) FY 2001 (\$ in Thousands) (U) \$5,584 CONTINUE LINK 16 INTEGRATION: Efforts associated with hardware and software integration of Link 16 terminals into Air Force platforms. -- (U) On-going engineering integration support to platforms; technical improvements; field support; technical assistance to related tactical data link demonstration programs. (U) \$1,963 CONTINUE LINK 16 EMD SUPPORT: Efforts associated with fielding terminals.</p>									
Project 4749			Page 4 of 18 Pages				Exhibit R-2A (PE 0604754F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604754F Tactical Data Link Integration	4749
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
	-- (U) Support Operations Support Working Group; maintain developmental equipment; test support; fielding/non-recurring training; network support; crypto support; spectrum support, Single Integrated Air Picture System Engineering Task Force Support, Korea Tactical Data Link Upgrade support	
(U) \$100	CONTINUED TACTICAL DATA LINK CONNECTIVITY:	
	-- (U) Link 16/other TDLs/Gateway/Interfaces.	
	-- (U) ADSI Management.	
(U) \$150	CONTINUED SYSTEM TESTING & SUPPORT: Cross-platform test and evaluation and system level testing.	
(U) \$7,797	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$5,117	CONTINUE LINK 16 INTEGRATION: Efforts associated with hardware and software integration of Link 16 terminals into Air Force platforms.	
	-- (U) On-going engineering integration support to platforms; technical improvements; field support; technical assistance to related tactical data link demonstration programs.	
(U) \$2,239	CONTINUE LINK 16 EMD SUPPORT: Efforts associated with fielding terminals.	
	-- (U) Support Operations Support Working Group; maintain developmental equipment; test support; fielding/non-recurring training; network support; crypto support; spectrum support; gateway support; data link tool support.	
(U) \$279	CONTINUED TACTICAL DATA LINK CONNECTIVITY:	
	-- (U) Link 16/other TDLs/Gateways/Interfaces.	
	-- (U) ADSI Management.	
(U) \$239	CONTINUED SYSTEM TESTING & SUPPORT: Cross-platform test and evaluation and system level testing.	
(U) \$7,874	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	No Activity	
(U) \$0	Total	
(U) <u>B. Project Change Summary</u>		
In FY03, #654749, Link 16 System Integration efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655050, TDL System Integration		
Project 4749	Page 5 of 18 Pages	Exhibit R-2A (PE 0604754F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development						PE NUMBER AND TITLE 0604754F Tactical Data Link Integration					PROJECT 4749			
(U) C. Other Program Funding Summary (\$ in Thousands)														
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>					
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>						
(U) AF RDT&E														
(U) Other APPN	3,790	7,895						Continuing				Continuing		
(U) D. Acquisition Strategy														
The Air Force Tactical Data Links System Program Office (SPO) provides for common development of integration and interoperability across all Air Force platforms and ensures that Link 16 is procured and maintained as a joint, end-to-end, command and control system. Host platforms program and budget for JTIDS or MIDS (Fighter Data Link (FDL) and Low Volume Terminal (LVT) derivatives) production terminals and for installation into operational units.														
(U) E. Schedule Profile														
				<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>				
			1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Milestones														
(U) - FDL Full Rate Production Award														*
(U) - MIDS LVT - F-16 Production Award														
(U) Host Platform Integration Start														
(U) - F-16 (thru FY04)														
(U) - Compass Call (thru FY02)										X				
(U) - Airborne Laser (ABL) (thru FY03)												X		
(U) - B-2 EMD										X				
(U) Command and Control Platforms														
(U) - AWACS Link 16 Qual Complete						*								
(U) Complete Baseline Integration														
(U) - MCE (P31)														
(U) -- Installation Start														
(U) -- Installation Complete														
(U) -IADS installation start														X
* Denotes completed events														
Project 4749				Page 6 of 18 Pages				Exhibit R-2A (PE 0604754F)						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Tactical Data Link Integration	PROJECT 4749
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(U) **E. Schedule Profile Continued**

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
X Denotes planned events												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development					0604754F Tactical Data Link Integration			4749			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Link-16 Integration					5,584		5,838			
(U)	EMD Activities					1,963		2,239			
(U)	Tactical Data Link Connectivity					100		279			
(U)	System Testing & Support					150		239			
(U)	JEFX Funding					0		0			
(U)	Single Integrated Air Picture										
(U)	Total					7,797		8,595			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Data Link Solutions	MIPR	TBD			114	445	649		Continuing	TBD
	<u>Support and Management Organizations</u>										
	ESC	Various	Various			521	325	419		Continuing	TBD
	CONTRACTOR SUPPORT	FPLOE	Various			1,076	2,913	3,118		Continuing	TBD
	MITRE	FPLOE	Various			4,165	3,964	4,099		Continuing	TBD
	Single Integrated Air Picture (SIAP)									Continuing	TBD
	<u>Test and Evaluation Organizations</u>										
	EGLIN AFB	PO/616	Various			852	150	310		Continuing	TBD
Project 4749					Page 8 of 18 Pages			Exhibit R-3 (PE 0604754F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
05 - Engineering and Manufacturing Development		0604754F Tactical Data Link Integration			4749	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					<u>Program</u>
	Subtotal Product Development	114	445	649		TBD
	Subtotal Support and Management	5,762	7,202	7,636		TBD
	Subtotal Test and Evaluation	852	150	310		TBD
	Total Project	6,728	7,797	8,595		TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604754F Tactical Data Link Integration				PROJECT 4992	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4992 Family of Interoperable Operational Pictures (FIOP)	0	8,964	0	0	0	0	0	Continuing	TBD
<p>In FY 03, #654992, Family of Interoperable Operational Pictures (FIOP) efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655051, Family of Interoperable Operational Pictures (FIOP), in order to consolidate the three Link 16 infrastructure PEs into one and manage tactical data links as an enterprise.</p> <p>(U) <u>A. Mission Description</u> This funding and schedule will support development, integration, operational fielding and migration of capability to identified systems of record for the Family of Interoperable Operational Pictures (FIOP) initiative. The objective is to 'provide an all-source picture of the battle space containing actionable, decision-quality, information to the warfighter through a fusion of existing databases.' Stove-piped systems will be identified and 'linked' via an improved web-enabled Common Operational Picture (COP).</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$2,200 REQUIREMENTS & ENGINEERING MANAGEMENT: --(U) Provide requirement management (\$300K x 4 services: \$1,200K), AF Exec Agent (\$400K), and DISA Mgt (\$600K). (U) \$3,811 IMPLEMENTATION OF EXECUTION MGT CAPABILITY: --(U) Provide integration support, execution management, and visualization capabilities. (U) \$1,553 TACTICAL COE WORKSTATION DEVELOPMENT: --(U) Migrate USMC/USA C2PC to COP infrastructure. Provide integration support, engineering, hardware/software, and travel. (U) \$1,400 COE SUPPORT FOR JOINT VARIABLE MSG FORMAT: --(U) Implement COE processing of JVMF messages among USMC/USN/USA with scalable COP infrastructure in limited bandwidth environments. Provide integration support, engineering, hardware/software, and travel (U) \$8,964 Total</p>									
Project 4992			Page 10 of 18 Pages				Exhibit R-2A (PE 0604754F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604754F Tactical Data Link Integration			PROJECT 4992		
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2003 (\$ in Thousands)</u>									
(U) \$0 No Activity									
(U) \$0 Total									
(U) <u>B. Project Change Summary</u>									
In FY 03, #654992, Family of Interoperable Operational Pictures (FIOP) efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655051, Family of Interoperable Operational Pictures (FIOP).									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) <u>D. Acquisition Strategy</u>									
Implement direction to spiral develop, integrate and sustain web-enabled COP capabilities that are interoperable with existing Service systems. Identify execution-level requirements and candidate solutions, evaluate those potential solutions against the stated requirements, and develop COE based, spiral developed capabilities in 6 month increments. FIOP developed capabilities will be tested and evaluated for operational utility in Service test facilities and at operational locations. FIOP capabilities will then be migrated to Service SOR systems for sustainment.									
(U) <u>E. Schedule Profile</u>									
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>
		1	2	3	4	1	2	3	4
(U) RQMTS/ENG MANAGEMENT									
(U) EXECUTION MGT CAPABILITY									
(U) TACTICAL COE WS DEV									
(U) COE SUPPORT FOR JVMF									
Project 4992			Page 11 of 18 Pages			Exhibit R-2A (PE 0604754F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604754F Tactical Data Link Integration				4992		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	REQUIREMENTS & ENGINEERING MANAGEMENT							2,200		
(U)	IMPLEMENTATION OF EXECUTION MGT CAPABILITY							3,811		
(U)	TACTICAL COE WORKSTATION DEVELOPMENT							1,553		
(U)	COE SUPPORT FOR JOINT VARIABLE MSG FORMAT							1,400		
(U)	Total							8,964		
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Execution Mgt Contractor	TBD	TBD					3,411	0	Continuing	TBD
Tactical Coe WS Contractor	TBD	TBD					1,403	0	Continuing	TBD
JVMF Contractor	TBD	TBD					1,250	0	Continuing	TBD
<u>Support and Management Organizations</u>										
Multi-Service Contractor	Various	Various					2,400	0	Continuing	TBD
Support										
MITRE	FPLOE	Various					500	0	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development							6,064	0	TBD	TBD
Subtotal Support and Management							2,900	0	TBD	TBD
Subtotal Test and Evaluation										
Total Project							8,964	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604754F Tactical Data Link Integration	PROJECT P771
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
P771 JTIDS	600	0	0	0	0	0	0	0	464,501

(U) **A. Mission Description**
 Joint Tactical Information Distribution System (JTIDS) is a secure, jam-resistant, high-capacity data link for use in a tactical combat environment. The follow on system is the Multifunction Information Distribution System (MIDS) run by the Navy. Both JTIDS and MIDS broadcast Link 16 (a.k.a., Tactical Digital Information Link J (TADIL J)) messages, free text, imagery and voice. They provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. Both are used by the Air Force, Army, Navy, and Marine Corps Theater Command and Control (C2) elements, weapons platforms, and sensors.

The JTIDS Program Office provides the user with JTIDS 2/2H terminals, as well as all of the acquisition support, technical assistance and integration necessary to operationally field, retrofit, and assist all of the platforms.

(U) **FY 2001 (\$ in Thousands)**

(U) \$392 CONTINUE ACQUISITION SUPPORT
 -- (U) Write, execute and administer contracts for multiple platforms
 -- (U) Command and Control Terminal Acquisition Support
 -- (U) Ongoing technical and programmatic support for JTIDS users

(U) \$162 CONTINUE TECHNICAL SUPPORT
 -- (U) Technical Improvements
 -- Technical support to AF platforms for the purpose of integrating and executing product improvements
 -- Technology Updates (e.g., advanced hardware and software)

(U) \$46 CONTINUE DIMINISHING MANUFACTURING RESOURCES
 -- (U) Identify problem electrical parts, assess impacts, develop, and implement resolution plans

(U) \$600 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604754F Tactical Data Link Integration			PROJECT P771		
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2002 (\$ in Thousands)</u>									
(U) \$0 No Activity									
(U) \$0 Total									
(U) <u>FY 2003 (\$ in Thousands)</u>									
(U) \$0 No Activity									
(U) \$0 Total									
(U) <u>B. Project Change Summary</u>									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U)	0	0	0	0	0			0	0
Other Proc AF, PE 0204738F, Theater Battle Management Core System (TBMCS)									
(U)	0	0	0	0	0			0	0
Other Proc AF, 0305208F, Intel Ops Ground Syst.									
(U)	5	0	0	0	0			0	5
Other Proc AF, 46 OSS, Eglin AFB									
(U)	0	0	0	0	0				0
Other Proc AF, PE 0207581F Joint Surveillance Target Attack Radar System (JSTARS)									
(U)	0	0	0	0	0				0
Other Proc AF, Warner Robins Air Logistics Center									
(U)	0	0	0	0	0				0
Other Proc AF, PE 06072300 Ground Theater Air Control									
Project P771			Page 14 of 18 Pages			Exhibit R-2A (PE 0604754F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604754F Tactical Data Link Integration			PROJECT P771			
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
System (GTACS)										
(U)	Other Proc AF, PE 0604226F, B-1	60	0	0	0	0			60	
* Other Program Funding reflects procurement of JTIDS hardware only. There are other USAF programs (F-15, F-16) that are budgeted to procure MIDS terminals in the FY00-FY06 timeframe.										
(U) D. Acquisition Strategy										
The JTIDS program office continues to manage the acquisition for the JTIDS Class 2/2H terminals for the Air Force, Navy, and Marine Corps. The Program Office has extended the ordering period for procurement of terminals in order to meet platform requirements. Funding for JTIDS terminal procurement will continue to wind down as the next generation Multifunctional Information Distribution System (MIDS) terminal becomes available. The period of performance to procure terminals is 30 September 2001, at that point terminal procurements are complete.										
(U) E. Schedule Profile										
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U)	New Software Releases (Yearly event)			*						
(U)	- FRP-2 Contract Extension					*				
(U)	Terminal Orders									
(U)	- Joint STARS			*						
(U)	- GTACS									
(U)	- B-1									
(U)	-Eglin AFB, 46 OSS									
(U)	Terminal Deliveries									
(U)	- TBMCS		*							
(U)	- Intel Ops Ground System									
(U)	- Joint STARS									
(U)	- Warner Robins ALC									
Project P771				Page 15 of 18 Pages			Exhibit R-2A (PE 0604754F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002																																																																																							
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05 - Engineering and Manufacturing Development					0604754F Tactical Data Link Integration					P771																																																																																							
(U) <u>E. Schedule Profile Continued</u>																																																																																																	
<table border="0" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="3" style="text-align:center"><u>FY 2001</u></th> <th colspan="3" style="text-align:center"><u>FY 2002</u></th> <th colspan="3" style="text-align:center"><u>FY 2003</u></th> </tr> <tr> <th></th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> <th style="text-align:center">1</th> <th style="text-align:center">2</th> <th style="text-align:center">3</th> <th style="text-align:center">4</th> </tr> </thead> <tbody> <tr> <td>(U) - GTACS</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) - B-1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) -Eglin AFB, 46 OSS</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="12">X denotes planned event</td> </tr> <tr> <td colspan="12">* denotes completed event</td> </tr> </tbody> </table>													<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) - GTACS													(U) - B-1													(U) -Eglin AFB, 46 OSS													X denotes planned event												* denotes completed event											
	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>																																																																																										
	1	2	3	4	1	2	3	4	1	2	3	4																																																																																					
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT				
05 - Engineering and Manufacturing Development				0604754F Tactical Data Link Integration			P771				
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Acquisition Support					392					
(U)	Technical Support					162					
(U)	Diminishing Manufacturing Resources					46					
(U)	Total					600					
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
<u>Contractor or</u>	<u>Contract</u>										
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>							
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
GEC-MARCONI	FFP	DEC 85	230,727	230,727	230,727				0	230,727	
LOCKHEED	FFP	JUN 93	6,761	6,761	6,761				0	6,761	
GEC-MARCONI	FFP	JUN 93	1,123	1,123	850	0			0	850	
CACD	FFP	JUN 93	1,616	1,616	1,072	401			0	1,473	
MCAIR	CPFF	MAR 94	2,434	2,434	2,434				0	2,434	
RADC	PO/616	Various	3,067	3,067	3,067				0	3,067	
WR-ALC	PO/616	Various	2,966	2,966	2,966				0	2,966	
NADEP	MIPR	Various	1,030	1,030	1,030				0	1,030	
ACSI	FFP	SEP 94	492	492	492				0	492	
VIASAT, INC.	FFP	Various	815	815	815				0	815	
AF Platforms	PO/616	Various	169	169	169				0	169	
NORTHROP GR	FFP	AUG 97	500	500	500				0	500	
ROCKWELL	FFP	Various	2,080	2,080	2,080				0	2,080	
HUGHES	FFP	Various	133	133	133				0	133	
DRC	FFP	MAY 97	213	213	213				0	213	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development				0604754F Tactical Data Link Integration			P771			
(U) Performing Organizations Continued:										
<u>Product Development Organizations</u>										
MIDSCO, Inc	MIPR	Various	4,251	4,251	4,251		0	4,251		
MOTOROLA INC	FFP	Various	1,800	1,800	1,800		0	1,800		
ALLIED SIGNAL	CPFF	Various	75	75	75		0	75		
MCDONNELL DG	FFP	Various	2,582	2,582	2,582		0	2,582		
BOEING	FFP	Various	869	869	869		0	869		
<u>Support and Management Organizations</u>										
ESC	Various	Various	21,875	21,875	21,973	149	0	22,122		
CONTRACTOR SUPPORT	Various	Various	42,863	42,863	42,749	50	0	42,799		
MITRE	FPLOE	Various	134,023	134,023	134,023	0	0	134,023		
<u>Test and Evaluation Organizations</u>										
MT HOME AFB	PO/616	Various	416	416	416		0	416		
EGLIN AFB	PO/616	Various	1,969	1,969	1,854	0	0	1,854		
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					262,886	401			0	263,287
Subtotal Support and Management					198,745	199			0	198,944
Subtotal Test and Evaluation					2,270	0			0	2,270
Total Project					463,901	600			0	464,501

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604762F Common Low Observable Verification Sys	PROJECT 4683
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4683 Common Low Observable Verification System	9,009	6,647	4,781	0	0	0	0	0	34,795
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 Common Low Observable Verification System (CLOVerS) is intended as an easily deployable flightline system to evaluate surface anomalies on low observable (stealth) aircraft. It will allow maintenance personnel to determine if a repair is needed, or if the repair performed was successful in restoring the low observable characteristic of the aircraft. CLOVerS is intended for use with the B-2, F-117, F-22, as well as future aircraft such as the Joint Strike Fighter. Key capabilities required include the ability to detect, locate, and resolve small surface defects, reduced measurement time (compared to existing verification methods), operation under less restrictive security measures, and a small deployment footprint.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$8,715 Continue Development Contract
 (U) \$83 Continue Development Contract Award Fee
 (U) \$211 Program Office Support
 (U) \$9,009 Total

(U) **FY 2002 (\$ in Thousands)**
 (U) \$6,402 Continue Development Contract
 (U) \$48 Continue Development Contract Award Fee
 (U) \$197 Program Office Support
 (U) \$6,647 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$4,555 Complete Development Contract
 (U) \$43 Complete Development Contract Award Fee
 (U) \$183 Program Office Support
 (U) \$4,781 Total

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604762F Common Low Observable Verification Sys			PROJECT 4683			
(U) B. Budget Activity Justification										
This program is in budget activity 5 - Engineering and Manufacturing Development, Research Category 6.4 because this program develops the Common Low Observable Verification System (CLOVerS).										
(U) C. Program Change Summary (\$ in Thousands)										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>				
(U)	Previous President's Budget	11,515	2,078	0		28,650				
(U)	Appropriated Value	11,621	6,713							
(U)	Adjustments to Appropriated Value									
	a. Congressional/General Reductions	-81	-66							
	b. Small Business Innovative Research	-420								
	c. Omnibus or Other Above Threshold Reprogram	-14								
	d. Below Threshold Reprogram	-2,072								
	e. Rescissions	-25								
(U)	Adjustments to Budget Years Since FY 2002 PBR			4,781		6,145				
(U)	Current Budget Submit/FY 2003 PBR	9,009	6,647	4,781		34,795				
(U) Significant Program Changes:										
\$4.8M reprogrammed from FY03 production funds (PE 0207145F) to complete developmental efforts.										
(U) D. Other Program Funding Summary (\$ in Thousands)										
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U)	PE27145F:Appn: Aircraft Procurement, AF (APAF) Budget Activity: Aircraft (A/C) Procurement/Common Support Equipment, Program Title: Common Low Observable Test Equipment	0	11		692	0	0	0	0	703

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002																																																																																																																																																	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT																																																																																																																																															
05 - Engineering and Manufacturing Development					0604762F Common Low Observable Verification Sys					4683																																																																																																																																															
<p>(U) <u>E. Acquisition Strategy</u> The contract was awarded using full and open competition. Engineering and Manufacturing Development (EMD) contract type is Cost Plus Award Fee.</p> <p>(U) <u>F. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>(U) Baseline Software Development</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) Conduct B-2 Initial Integration Testing</td> <td></td> <td></td> <td></td> <td style="text-align: center;">*</td> <td style="text-align: center;">*</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) Develop Platform Specific Software</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) Develop Advanced Diagnostics</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) Hardware Design Review</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) DT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) OT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(U) LRIP Production - FY04</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) System Deliveries Begin (FY05)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>* = Completed event X = Planned event</p>													<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>				1	2	3	4	1	2	3	4	1	2	3	4	(U) Baseline Software Development	*	*	*	*	*	X	X	X	X	X	X	X	(U) Conduct B-2 Initial Integration Testing				*	*	X	X	X	X	X	X	X	(U) Develop Platform Specific Software								X	X	X	X	X	(U) Develop Advanced Diagnostics											X	X	(U) Hardware Design Review												X	(U) DT&E												X	(U) OT&E												X	(U) LRIP Production - FY04													(U) System Deliveries Begin (FY05)												
	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>																																																																																																																																																
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(U) Conduct B-2 Initial Integration Testing				*	*	X	X	X	X	X	X	X																																																																																																																																													
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Project 4683				Page 3 of 5 Pages				Exhibit R-2 (PE 0604762F)																																																																																																																																																	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development				0604762F Common Low Observable Verification Sys				4683			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	CLOVerS Development Contract					8,715		6,402		4,555	
(U)	CLOVerS Development Contract Award Fee					83		48		43	
(U)	Program Office Support					211		197		183	
(U)	Total					9,009		6,647		4,781	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	Boeing Co., St Louis	CPAF/FPIF	May 99	21,910	22,263	12,671	8,798	6,450	4,598	0	32,517
	<u>Support and Management Organizations</u>										
	ASC/FBXC, WPAFB OH	Various				1,687	211	197	183	0	2,278
	<u>Test and Evaluation Organizations</u>										
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	Advanced Diagnostic Analysis Package (ADAP) and Radar Diagnostic Expert Equipment (RDES) software will be available to the contractor. Imaging Data from the B-2, F-117, and F-22 will be provided as appropriate. Current landing gear shrouds and flight control surface supports will be used until the CLOVerS items are developed. Imaging data (classified) on relevant platforms will be provided for software algorithm development.										
	<u>Support and Management Property</u>										
	<u>Test and Evaluation Property</u>										
Project 4683				Page 4 of 5 Pages				Exhibit R-3 (PE 0604762F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
05 - Engineering and Manufacturing Development		0604762F Common Low Observable Verification Sys			4683	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					
	Subtotal Product Development	12,671	8,798	6,450	4,598	0
	Subtotal Support and Management	1,687	211	197	183	0
	Subtotal Test and Evaluation					
	Total Project	14,358	9,009	6,647	4,781	0
						34,795

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604779F Tactical Data Link Interoperability	PROJECT 2189
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2189 JINTACCS	5,593	5,621	0	0	0	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

For FY 2003, #652189, JINTACCS efforts transferred to PE 0207434F, Link 16 Support and Sustainment, #655049, JINTACCS, in order to consolidate the three Link 16 infrastructure PEs into one and manage tactical data links as an enterprise.

(U) A. Mission Description

The Joint Interoperability of Tactical Command and Control Systems (JINTACCS) Program is a Joint Staff directed program that provides the sole Air Force (AF) activity responsible for ensuring the interoperability of AF Tactical Data Links (TDLs) [including, but not limited to Tactical Digital Information Links (TADILs) and Variable Message Formats (VMF)] and United States Message Text Format (USMTF) systems with the associated Joint and allied/coalition systems. The requirements for the program are delineated in DoDD 4630.5, DoDD 4630.8, CJCSI 6212.01B, and AFI 33-108. The program ensures platform/system interoperability through the development and management of the joint/combined architecture, tactical information exchange requirements (IERs), interface definitions and protocols, platform/system implementations, employment concepts, and operating procedures. This includes the coordination of all TDL and USMTF message standards configuration management, platform/system interoperability assessments and interoperability certification testing. Air Force platforms/systems participating in, and affected by, this program include: Airborne Warning and Control System (AWACS); Airborne Battlefield Command and Control Center (ABCCC); Modular Control Element (MCE); Air Operations Center (AOC); Joint Surveillance Target Attack Radar System (JSTARS); F-15 A/B/C/D/E; F-16 B30/40/50; F-22; A/OA-10; Joint Strike Fighter (JSF); Airborne Laser (ABL); B-1; B-2; B-52; F-117; RC-135; Regional/Sector Air Operations Center (RAOC/SAOC), Command & Control Information Processing System (C2IPS); Space Based Infrared System (SBIRS); Iceland Air Defense System (IADS); Air Support Operations Center (ASOC); and Tactical Air Control Parties (TACPs), Theater Battle Management Corps System (TBMCS), Contingency Automated Theater Automated Planning System (CTAPS), Combat Intelligence System (CIS), Air Defense System Integrator (ADSI), Distributed Common Ground System (DCGS), North American Aerospace Defense Command (NORAD)/United States Space Command (USSPACECOM) Warfighting Support System (N/UWSS), Region/Sector Air Operations Center (R/SAOC) AWACS Digital Information Link, and Global Command and Control System (GCCS)-Air Force (GCSS-AF). The Air Force JINTACCS program supports the Assistant Secretary of Defense (ASD) directive on harmonization of US and NATO messages (e.g., ATO and ACO).

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0604779F Tactical Data Link Interoperability	2189
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$437	Continue Interoperability Certification Testing - Specific platforms for FY01 will be determined based on initial Link 16 message implementation, software upgrade, and system modification schedules.	
(U) \$1,766	Continue US Message Text Formats Management	
(U) \$3,390	Continue Tactical Data Link Management and Architecture Development - Support multi TADIL & VMF meetings and working groups - Consultations regarding implementation and interoperability with the F-16 - Consultations regarding software updates and interoperability with the F-15C, E-3, E-8, ABCCC, CRC/CRE	
(U) \$5,593	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$646	Continue Interoperability Certification Testing. Specific platforms for FY 02 will be determined based on Link 16 message implementation, software upgrade, and system modification	
(U) \$1,711	Continue US Message Text Formats Management and Updates - Support Joint, Allied/Coalition meetings and working groups - Support technology maturation for joint standards and DoD policy	
(U) \$3,264	Continue Tactical Data Link Management and Architecture Development. - Support multi TADIL and VMF meetings and working groups - Consultations regarding implementation and interoperability with the F-16, B-52, B-1, B-2, F-117 - Consultations regarding software updates and interoperability with the F-15C, E-3, E-8, ABCCC, CRC/CRE, TULIP	
(U) \$5,621	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	Continue Interoperability Certification Testing. Specific platforms for FY 02 will be determined based on Link 16 message implementation, software upgrade, and system modification	
(U) \$0	Continue US Message Text Formats Management and Updates - Support Joint, Allied/Coalition meetings and working groups - Support technology maturation for joint standards and DoD policy	
Project 2189	Page 2 of 7 Pages	Exhibit R-2 (PE 0604779F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
05 - Engineering and Manufacturing Development		0604779F Tactical Data Link Interoperability		2189
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2003 (\$ in Thousands) Continued</u>				
(U)	\$0	Continue Tactical Data Link Management and Architecture Development.		
		- Support multi TADIL and VMF meetings and working groups		
		- Consultations regarding implementation and interoperability with the F-16, B-52, B-1, B-2, F-117		
		- Consultations regarding software updates and interoperability with the F-15C, E-3, E-8, ABCCC, CRC/CRE, TULIP		
(U)	\$0	Total		
(U) <u>B. Budget Activity Justification</u>				
This program is in budget activity 5 - Engineering and Manufacturing Development, because it is designed to improve the interoperability of Tactical Command and Control (C2) Systems used in support of joint operations.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U)	Previous President's Budget	5,825	5,677	0
(U)	Appropriated Value	5,825	5,677	
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-54	-56	
	b. Small Business Innovative Research	-178		
	c. Omnibus or Other Above Threshold Reprogram			
	d. Below Threshold Reprogram			
	e. Rescissions			
(U)	Adjustments to Budget Years Since FY 2002 PBR			
(U)	Current Budget Submit/FY 2003 PBR	5,593	5,621	0
(U)	<u>Significant Program Changes:</u>			
	None			
Project 2189		Page 3 of 7 Pages	Exhibit R-2 (PE 0604779F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
05 - Engineering and Manufacturing Development					0604779F Tactical Data Link Interoperability					2189	
(U) D. Other Program Funding Summary (\$ in Thousands)											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U)	AF RDT&E										
(U)	Other APPN										
(U) E. Acquisition Strategy											
As the Air Force lead agent for a jointly directed program, JINTACCS provides level of effort technical support for increasing interoperability of AF programs through message text and data link standards implementation.											
(U) F. Schedule Profile											
				<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
				1	2	3	4	1	2	3	4
(U)	F-16 - OFP M-3 baseline implementation and interoperability										
(U)	E-8 - Complete ASU Spiral 1 Implementation/Interoperability										
(U)	AOC - Complete baseline Implementation/Interoperability										
(U)	F-15C - Interoperability consultation for Software upgrades.										
(U)	F-16 - Interoperability consultation for Software upgrades.										
(U)	E-3 - Interoperability consultation for Software upgrades.										
(U)	E-8 - Interoperability consultation for Software upgrades.										
(U)	ABCCC - Interoperability consultation for Software upgrades.										
(U)	CRC/CRE - Interoperability consultation for Software upgrades.										
(U)	AOC - Interoperability consultation for Software upgrades.										
(U)	F-15E - Interoperability consultation for Software upgrades.										
(U)	ABL - Interoperability consultation for Software upgrades.										
(U)	B-1 - Interoperability consultation for Software upgrades.										
(U)	B-2 - Interoperability consultation for Software upgrades.										
(U)	B-52 - Interoperability consultation for Software upgrades.										
(U)	F-22 - Interoperability consultation for Software upgrades.										
(U)	F-117 - Interoperability consultation for Software upgrades.										
Project 2189				Page 4 of 7 Pages				Exhibit R-2 (PE 0604779F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
05 - Engineering and Manufacturing Development					0604779F Tactical Data Link Interoperability					2189			
(U) <u>F. Schedule Profile Continued</u>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4	
(U)	Joint StrikeFighter (JSF) - Interoperability consultation for Software												
(U)	R/SAOC - Interoperability consultation for Software upgrades.												
(U)	IADS - Interoperability consultation for Software upgrades.												
(U)	TACP/ASOC - Interoperability consultation for Software upgrades.												
(U)	Interoperability Certification Testing												
(U)	X												
(U)	(Passed Joint and CAF Interoperability)												
(U)	- MCE P3I												
(U)	CAF												
(U)	Joint												
(U)	- JSTARS												
(U)	CAF												
(U)	Joint												
(U)	- E-3 AWACS												
(U)	CAF												
(U)	Joint												
(U)	X												
(U)	- F-15C												
(U)	X												
(U)	CAF												
(U)	Joint												
(U)	X												
(U)	- F-15E												
(U)	X												
(U)	CAF												
(U)	Joint												
(U)	X												
(U)	- IADS												
(U)	CAF												
(U)	Joint												
(U)	X												
(U)	- ABCCC												
(U)	CAF												
(U)	X												
(U)	CAF												
(U)	X												

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)											DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development						PE NUMBER AND TITLE 0604779F Tactical Data Link Interoperability						PROJECT 2189		
(U) <u>F. Schedule Profile Continued</u>														
			<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>	
			1	2	3	4	1	2	3	4	1	2	3	4
(U)	Joint							X						
(U)	- RADIL					X								
(U)	CAF									X				
(U)	Joint							X						
(U)	- ABL											X		
(U)	CAF									X				
(U)	Joint											X		
(U)	- F-16						X							
(U)	CAF								X					
(U)	Joint						X							
(U)	- TACP							X						
(U)	CAF								X					
(U)	Joint									X				
(U)	- ADSI				X									
(U)	Joint				X									
(U)	OPFAC INSTALL/INTEGRATION									X				
(U)	- F-15E Complete							X						
	* Denotes completed event													
	X Denotes planned event													

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604779F Tactical Data Link Interoperability				2189		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Interoperability Certification Testing				437		646			0
(U)	US Message Text Formats Management				1,766		1,711			0
(U)	Tactical Data Links Management				3,390		3,264			0
(U)	Total				5,593		5,621			0
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
<u>Support and Management Organizations</u>										
MITRE	CPAF	OCT 72			35,228	2,984	2,957		Continuing	TBD
B3H	CPFF	MAY 97			2,494	1,837	1,919		Continuing	TBD
COMPTEK	CPAF	OCT 92			3,728	0			0	3,728
HTI	CPAF	OCT 94			1,300	0			0	1,300
Prog Office	Various	Various			243	335	335		Continuing	TBD
AF Participating Test Unit	PO/616	OCT 97			1,242	437	410		Continuing	TBD
(PTU)										
<u>Test and Evaluation Organizations</u>										
						<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
						<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Subtotals</u>										
Subtotal Product Development										
Subtotal Support and Management					44,235	5,593	5,621		TBD	TBD
Subtotal Test and Evaluation										
Total Project					44,235	5,593	5,621		TBD	TBD
Project 2189										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604800F Joint Strike Fighter EMD				PROJECT 3831	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3831 Joint Strike Fighter	0	761,893	1,743,668	1,941,951	2,485,774	1,984,386	1,686,592	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	TBD
<p>THIS PROGRAM ELEMENT (PE) CONTINUES DEVELOPMENT EFFORTS BUDGETED IN PE 0603800F PRIOR TO FISCAL YEAR 2002.</p> <p>(U) <u>A. Mission Description</u> The Joint Strike Fighter (JSF) program will develop and field a family of aircraft that meets the needs of the USN, USAF, and USMC and allies, with optimum commonality among the variants to minimize life cycle costs. This is a joint program with no executive service. The Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom (UK) is a partner in this phase, and agreements with several other countries are in negotiation.</p> <p>PROGRAM SDD FUNDING BREAKOUT REFLECTS NAVY, AIR FORCE AND UK FUNDING ONLY. EXCLUDES TBD ANTICIPATED OTHER INTERNATIONAL FUNDING.</p> <p>QUANTITY OF RDT&E ARTICLES IS 14.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 FY 2001 appropriated funding was reprogrammed to PE 0603800F. (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$1,476,500 Commence execution of System Development and Demonstration (SSD) for Air System with Lockheed Martin and F135 Propulsion System with Pratt & Whitney. (U) \$44,900 Continue General Electric's development of a second, interchangeable JSF engine (GE F136) for competition in production (previously begun in associated program elements 0603800N and 0603800F). (U) \$98,450 Commence SDD mission support including systems engineering activities, modeling, simulation and analysis efforts and program office functions. (U) \$1,619,850 Total</p>									
Project 3831			Page 1 of 7 Pages				Exhibit R-2 (PE 0604800F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																							
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604800F Joint Strike Fighter EMD	PROJECT 3831																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$3,192,000 Continue execution of SDD for Air System with Lockheed Martin and F135 Propulsion System with Pratt & Whitney.</p> <p>(U) \$150,000 Continue General Electric's development of a second, interchangeable JSF engine (GE F136) for competition in production.</p> <p>(U) \$290,168 Continue SDD mission support including systems engineering activities, modeling, simulation and analysis efforts and program office functions.</p> <p>(U) \$3,632,168 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This program is funded under SYSTEM DEVELOPMENT & DEMONSTRATION (SDD) because it encompasses new systems development and demonstration end items prior to production approval decision.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">769,511</td> <td style="text-align: center;">1,747,738</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">769,511</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td style="text-align: center;">0</td> <td style="text-align: center;">-7,618</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td style="text-align: center;">0</td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">-4,070</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">761,893</td> <td style="text-align: center;">1,743,668</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> Funding: The FY 2002 \$7,618 thousand decrease reflects an undistributed congressional reduction. The FY 2003 \$4,070 thousand decrease reflects economic assumptions (\$3,872 thousand) and Assistance and Advisory Services (A&AS) support (\$198 thousand).</p> <p>Schedule: None.</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	769,511	1,747,738	TBD	(U) Appropriated Value	0	769,511			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	0	-7,618			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram	0				d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2002 PBR			-4,070		(U) Current Budget Submit/FY 2003 PBR	0	761,893	1,743,668	TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																					
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(U) Current Budget Submit/FY 2003 PBR	0	761,893	1,743,668	TBD																																																					
Project 3831	Page 2 of 7 Pages	Exhibit R-2 (PE 0604800F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604800F Joint Strike Fighter EMD				PROJECT 3831	
(U) D. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) RDT&E 0603800F	341,167	0	0	0	0	0	0	0	1,907,352
(U) RDT&E 0603800N	341,164	0	0	0	0	0	0	0	1,950,617
(U) RDT&E 0603800E	0	0	0	0	0	0	0	0	118,006
(U) UNITED KINGDOM	800								201,221
(U) MULTI-LATERAL	1,700								32,100
(U) CANADA	0								10,600
(U) ITALY	0								10,000
(U) RDT&E 0604800N		762,957	1,727,500	1,931,753	2,489,103	1,987,246	1,689,760	Continuing	TBD
(U) United Kingdom (SDD)		95,000	161,000	200,000	356,000	384,000	355,000	Continuing	TBD
(U) Other APPN									
(U) USAF 0207142F					74,014	1,042,863	1,815,676	Continuing	TBD
(U) APN-1 0204146N					50,079	762,878	1,325,330	Continuing	TBD
Note 1: RDT&E 0604800N continues development efforts budgeted prior to FY 2002. FY 2005 funding is for advanced procurement requirements.									
(U) E. Acquisition Strategy									
Activities in the prior phase of JSF centered around three distinct objectives to provide a sound foundation for the start of System Development & Demonstration (SDD) in Fall 2001:									
(1) facilitated the Services' development of fully validated, affordable operational requirements;									
(2) lowered risk by investing in and demonstrating key leveraging technologies that lowered the cost of development, production and ownership; and									
(3) demonstrated operational concepts.									
<p>Early warfighter and technologist interaction was an essential aspect of the requirements definition process, and achieved JSF affordability goals. To an unprecedented degree, the JSF Program used cost-performance trades early, as an integral part of the weapon system development process. The Services defined requirements through an iterative process, balancing weapon system capability against life cycle cost at every stage. Each iteration of the requirements was provided to industry. They evolved their designs and provided cost data back to the warfighters. The warfighters evaluated trades and made decisions for the next iteration. This iterative process produced iterations of the Services' Joint Interim Requirements Documents in 1995, 1997, 1998 and culminated in the approved joint Operational Requirements</p>									
Project 3831			Page 3 of 7 Pages				Exhibit R-2 (PE 0604800F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
05 - Engineering and Manufacturing Development					0604800F Joint Strike Fighter EMD					3831				
(U) <u>E. Acquisition Strategy Continued</u>														
Document (ORD) in FY2000.														
A sizable technology maturation effort was conducted to reduce risk and life cycle cost (LCC) through technology maturation and demonstrations. The primary emphasis was on technologies identified as high payoff contributors to affordability, supportability, survivability and lethality. Numerous demonstrations were accomplished to validate performance and life cycle cost impact to component, subsystem and the total system.														
In November 1996, contracts were awarded to Boeing and Lockheed Martin for Concept Demonstration Programs. These competing contractors built and flew concept demonstrator aircraft, conducted concept unique ground demonstrations, and refined their respective weapon system concepts. Specifically, Boeing and Lockheed Martin demonstrated commonality and modularity, Short Take Off/ Vertical Land (STOVL) hover and transition, and low speed handling qualities of their respective weapon system concepts. Pratt and Whitney provided propulsion hardware and engineering support. General Electric continued development of a second, interchangeable, engine for competition in production.														
Following evaluation of proposals and a favorable Milestone B decision, the JSF Program entered SDD on 26 October 2001 with SDD contract awards to Lockheed Martin and Pratt & Whitney. The SDD plan reflects a block approach, based on open systems architecture, for accomplishing aircraft and weapons intergration. General Electric continues propulsion development efforts.														
Procurement of the USAF and USMC JSF variants is planned to begin in FY 2006, with advance procurement for Lot 1 in FY 2005. Procurement of the USN JSF variant is planned to begin in FY 2008, with advance procurement for Lot 3 in FY 2007.														
(U) <u>E. Schedule Profile</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Milestone B and Award of SDD Contract: Oct. 2001 *					*									
(U) Air System Requirements Review (ASRR)						X								
(U) Integrated Baseline Reviews (IBRs) at GE, P&W and Lockheed Martin						X	X							
(U) Preliminary Design Review (PDR)												X		
(U) Critical Design Reviews (three variants) 2004-2005														
(U) CTOL First Flight 1st Qtr FY-2006														
(U) STOVL First Flight 3rd Qtr FY-2006														
(U) CV First Flight 2nd Qtr FY-2007														
Project 3831				Page 4 of 7 Pages				Exhibit R-2 (PE 0604800F)						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
05 - Engineering and Manufacturing Development					0604800F Joint Strike Fighter EMD					3831		
(U) <u>F. Schedule Profile Continued</u>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) 1st Operational Aircraft Delivered -- 2008												
(U) USMC Initial Operational Capability (IOC) -- 2010												
(U) USAF IOC -- 2011												
(U) USN IOC -- 2012												
(U) Milestone C -- 2012												
Project 3831				Page 5 of 7 Pages				Exhibit R-2 (PE 0604800F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development					0604800F Joint Strike Fighter EMD			3831		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	SDD Air System (Lockheed Martin)					0		684,500		2,432,000
(U)	P&W F135 Engine							792,000		760,000
(U)	GE F136 Engine							44,900		150,000
(U)	Mission Support							80,077		263,669
(U)	Advisory & Assistance Svcs							18,373		26,499
(U)	Total					0		1,619,850		3,632,168
Note 1: - Excludes TBD anticipated other international funding.										
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
Lockheed Martin	C/CPAF	10/02	18,981,928	18,981,928		684,500	2,432,000		Continuing	TBD
Pratt & Whitney	SS/CPAF	10/02	4,827,786	4,827,786		792,000	760,000		Continuing	TBD
General Electric	SS/CPAF	11/02	411,000	411,000		44,900	150,000		Continuing	TBD
Various	Various		Continuing	Continuing		80,077	263,669		Continuing	TBD
Sverdrup/Anteon	SS/CPFF	03/02	Continuing	Continuing		3,150	4,330		Continuing	TBD
Stanley	SS/CPFF	03/02	Continuing	Continuing		3,806	8,126		Continuing	TBD
Aegis	SS/CPFF	03/02	Continuing	Continuing		1,960	2,730		Continuing	TBD
LSI/Veridian	SS/CPFF	03/02	Continuing	Continuing		4,457	6,163		Continuing	TBD
Various	Various	Field Sites	Continuing	Continuing		5,000	5,150		Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE		
							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development				0604800F Joint Strike Fighter EMD			3831		
(U) <u>Performing Organizations Continued:</u>									
Details of fiscal year award fee profiles for Lockheed Martin, Pratt & Whitney and General Electric are being established or refined.									
The GE contract target value (EAC) reflects the negotiated value of the current Phase IIIb.									
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development						1,619,850	3,632,168	TBD	TBD
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project						1,619,850	3,632,168	TBD	TBD
Notes:									
- Excludes TBD anticipated other international funding.									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604805F Commercial Operations and Support Savings Initiative				PROJECT 4771			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4771	Commercial O&S Savings Initiative	18,418	0	0	0	0	0	0	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>(U) <u>A. Mission Description</u> This program reduces total ownership costs, particularly Operations and Support (O&S) costs, through insertion of commercial products and processes into fielded military systems. These savings are expected to result by reducing the costs of parts and maintenance, reducing the need for specialized equipment, increasing reliability, and increasing efficiency of subsystems. Commercial Operations and Support Savings Initiative (COSSI) projects will be performed in two stages. In Stage I, each competitively selected, flexible cost-share proposal will provide the Non-Recurring Engineering (NRE) required to create a kit that can be used in a fielded military system and perform the testing needed to verify that inserted kits will produce O&S cost savings while at least maintaining the current system level of performance of the fielded system. Based on the results of a Stage I project, the Air Force will decide whether to proceed to Stage II. The goal in Stage II is to purchase a reasonable production quantity of kits based on a fair and reasonable price (i.e., the value of the kits vice the cost of the kits to the Air Force under a Federal Acquisition Regulation (FAR) vehicle). COSSI is a valuable tool for reducing total ownership cost of fielded weapon systems and offers an opportunity for the Air Force to leverage the commercial sector's much faster product development and technology refresh cycle times. The program is designed to be attractive to non-traditional defense suppliers as well through the use of flexible Other Transaction (OT) contracts.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$10,418 Leveraged commercial electronics and software to swap existing military processors with form, fit, and function replacements to increase reliability, obsolescence avoidance, and software commonality. (U) \$5,000 Reduced inventory requirements, maintenance turn times, and mobility deployment footprints through insertion of reliable commercial items. (U) \$3,000 Reduced test, technical manual, and training costs through automation and use of commercial hardware and software. (U) \$18,418 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p>											
Project 4771				Page 1 of 5 Pages				Exhibit R-2 (PE 0604805F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																							
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604805F Commercial Operations and Support Savings Initiative	PROJECT 4771																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$0 No Activity</p> <p>(U) \$0 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in Budget Activity 4, Demonstration and Validation, since it includes efforts necessary to evaluate integrated technologies in as realistic an operating environment as possible to assess performance or cost reduction potential.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 15%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">19,669</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">19,851</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td style="text-align: center;">-1,251</td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td style="text-align: center;">-182</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">18,418</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> Program terminated in FY 2002.</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	19,669	0	0		(U) Appropriated Value	19,851	0			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research	-1,251				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions	-182				(U) Adjustments to Budget Years Since FY 2002 PBR					(U) Current Budget Submit/FY 2003 PBR	18,418	0	0	TBD
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																																					
(U) Previous President's Budget	19,669	0	0																																																						
(U) Appropriated Value	19,851	0																																																							
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(U) Current Budget Submit/FY 2003 PBR	18,418	0	0	TBD																																																					
Project 4771	Page 2 of 5 Pages	Exhibit R-2 (PE 0604805F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002				
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604805F Commercial Operations and Support Savings Initiative				PROJECT 4771			
(U) D. Other Program Funding Summary (\$ in Thousands)											
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U) AF RDT&E											
(U) Other APPN											
(U) Related Activities:											
(U) PE 0602805F, Dual Use Science and Technology (DUST).											
(U) E. Acquisition Strategy											
As authorized by Congress, Other Transactions (OTs) for prototypes will be used during Stage I. Project selections will be made using full and open competition.											
(U) F. Schedule Profile											
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
				1	2	3	4	1	2	3	4
(U) Request For Release (RFP) Release				X							
(U) Contract Awards				X	X	X					
Project 4771				Page 3 of 5 Pages				Exhibit R-2 (PE 0604805F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development					0604805F Commercial Operations and Support			4771		
					Savings Initiative					
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			
(U)	Leverage commercial electronics and software to swap existing military processors with form, fit, and function replacements				10,418	0	0			
(U)	Reduce inventory requirements, maintenance turn times, and mobility deployment footprints through insertion of reliable commercial items				5,000	0	0			
(U)	Reduce test, technical manual, and training costs through automation and use of commercial hardware and software				3,000	0				
(U)	Total				18,418	0	0			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>										
L-3 Communications	OTA	Jun 99	N/A	N/A	0	0	0	0	0	0
Marconi Avionics	OTA	Aug 99	N/A	N/A	0	0	0	0	0	0
Telephonics	OTA	Sep 99	N/A	N/A	0	0	0	0	0	0
Lockheed-Martin	OTA	Jul 99	N/A	N/A	0	0	0	0	0	0
AIL Systems	OTA	Sep 99	N/A	N/A	0	0	0	0	0	0
CPU Technologies	OTA	TBD	N/A	N/A	0	0	0	0	0	0
Marconi Integrated	OTA	TBD	N/A	N/A	0	0	0	0	0	0
Boeing St Louis	OTA	TBD	N/A	N/A	0	0	0	0	0	0
Numerous	OTA	TBD	N/A	N/A	0	18,418	0	0	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2002					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development				0604805F Commercial Operations and Support Savings Initiative				4771	
(U) Government Furnished Property:									
<u>Item</u>	<u>Contract</u>	<u>Award or</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Vehicle</u>		<u>Date</u>	<u>Date</u>						
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
<u>Subtotals</u>				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				0	18,418	0	0	TBD	TBD
Subtotal Support and Management									
Subtotal Test and Evaluation									
Total Project				0	18,418	0	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	14,203	80,283	133,291	119,287	48,479	19,657	0	0	423,321
133B Rapid Execution & Combat Targeting (REACT)	0	5,255	20,661	15,672	13,943	0	0	0	55,531
4371 Safety Enhanced Reentry Vehicle (SERV) Program	0	51,603	64,046	55,769	34,536	19,657	0	0	225,611
4788 PSRE Life Extension Program	14,203	19,425	21,030	10,636	0	0	0	0	73,415
4823 ECS Replacement Program	0	0	11,992	13,951	0	0	0	0	25,943
5007 GPS Metric Tracking Capability	0	4,000	5,686	0	0	0	0	0	9,686
5037 Support Equipment	0	0	9,876	23,259	0	0	0	0	33,135
Quantity of RDT&E Articles	0	3	3	3	0	0	0	0	0

In FY 2003, Projects 4823, ECS Replacement Program, and 5037, Support Equipment, include new start efforts.

(U) **A. Mission Description**
 ICBM modernization efforts will ensure the extension of the operational life of the Minuteman ICBM weapon system.

The Rapid Execution and Combat Targeting (REACT) Program designs and develops the modifications to the weapon system control consoles to correct launch readiness deficiencies.

The Safety Enhanced Reentry Vehicle (SERV) Program designs, develops, and tests the modifications necessary to adapt the Minuteman III Reentry System to accommodate the Mk 21 Reentry Vehicle. All RDT&E articles (9) in FY02-04 are in support of the SERV Program.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM - EMD
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(U) **A. Mission Description Continued**

The Propulsion System Rocket Engine (PSRE) Life Extension Program (LEP) refurbishes the Minuteman post-boost vehicle to correct age-related degradations.

The Environmental Control System (ECS) Replacement Program refurbishes, updates, and/or replaces components of the current Minuteman ECS in the Launch Facilities (LFs) and Missile Alert Facilities (MAFs).

The Global Positioning System (GPS) Metric Tracking Capability Program designs and develops the modifications to the Minuteman III Range Instrumentation/Safety Wafer needed to use GPS for obtaining real-time position data to meet test range safety requirements.

The Support Equipment program designs and develops the refurbishments, updates, and/or replacements to equipment used for missile weapons systems maintenance and refurbishment at organizational/intermediate (base/field) and depot levels, launch control facilities, as well as missile testing facilities.

All of these modernization programs are designed to keep the Minuteman Weapon System at its required availability and reliability levels.

(U) **B. Budget Activity Justification**

This program is in Budget Activity 05 - Engineering and Manufacturing Development because the projects are being developed for the Air Force but have not received production approval.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	18,157	81,086	109,545	700,181
(U) Appropriated Value	18,325	81,086		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-128	-803		
b. Small Business Innovative Research	-1,154			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram	-2,800			
e. Rescissions	-40			
(U) Adjustments to Budget Years Since FY 2002 PBR			23,746	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			
05 - Engineering and Manufacturing Development		0604851F ICBM - EMD			
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Current Budget Submit/FY 2003 PBR	14,203	80,283	133,291	423,321
(U)	<u>Significant Program Changes:</u> FY03: Funding adjustments are the result of PSRE Life Extension Program restructuring, and additional funding for the Support Equipment and GPS Metric Tracking Programs. See specific R-2A Exhibits for details.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM - EMD	PROJECT 133B
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
133B Rapid Execution & Combat Targeting (REACT)	0	5,255	20,661	15,672	13,943	0	0	0	55,531

(U) **A. Mission Description**
 The Rapid Execution and Combat Targeting (REACT) Service Life Extension Program (SLEP) will modify the 50 Minuteman (MM) III Launch Control Centers, (LCCs) Weapon System Control Consoles and the 19 other trainer and test facilities which support the MM weapon system. Hardware changes include modernizing and/or upgrading the Embedded Memory Array Dynamic (EMAD) Card. The REACT Console Operations Program (COP) will also be modified. Specifically, funding will be used to design, develop, test, and qualify the new EMAD card as well as the software used to correct the identified deficiencies of the COP.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$0 No Activity - System Development & Demonstration (SDD) begins in FY02
 (U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**
 (U) \$4,098 Begin design, development, testing, and qualification of the new EMAD card.
 (U) \$1,000 Begin COP software development.
 (U) \$157 Provide program support.
 (U) \$5,255 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$5,740 Continue design, development, testing, and qualification of the new EMAD card.
 (U) \$14,403 Continue COP software development.
 (U) \$518 Provide program support.
 (U) \$20,661 Total

(U) **B. Project Change Summary**
 No significant program changes.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604851F ICBM - EMD				133B		
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) Other APPN										
(U) Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, REACT, Mod #3413) (BA-03, P-011)		9,155	15,167	14,573	7,106				46,001	
NOTE: Procurement data above is only for items being procured as a result of the current RDT&E effort, not total procurement from REACT Program inception.										
(U) D. Acquisition Strategy										
A Cost Plus Award Fee (CPAF) contract addendum to the ICBM Prime Integration Contract with effort scheduled to begin in 2QFY02.										
(U) E. Schedule Profile										
			<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
			1	2	3	4	1	2	3	4
(U) Milestone B							X			
(U) SDD Contract Award							X			
(U) COP PDR								X		
(U) COP CDR										X
(U) EMAD PDR								X		
(U) EMAD CDR										X
(U) HDA PDR										X
* - Completed Event X - Planned Event										
Project 133B			Page 5 of 28 Pages				Exhibit R-2A (PE 0604851F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT 133B				
(U) A. Project Cost Breakdown (\$ in Thousands)											
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>	
(U)	Design, Develop, Test, and Qualify the new EMAD Card						4,098			5,690	
(U)	Software Development						1,000			14,453	
(U)	Other Program Costs						157			518	
(U)	Total						5,255			20,661	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	TRW	C/CPAF	Mar 02	TBD	46,545		4,598	17,795	24,172	46,565	
<u>Support and Management Organizations</u>											
	NSCCA	SS/CPAF	Feb 02	TBD	7,545		500	2,348	4,697	7,545	
	Other Government Costs	TBD	Jan 02	TBD	1,421		157	518	746	1,421	
<u>Test and Evaluation Organizations</u>											
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
	None										
<u>Support and Management Property</u>											
	None										
Project 133B				Page 6 of 28 Pages				Exhibit R-3 (PE 0604851F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
05 - Engineering and Manufacturing Development		February 2002				
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT				
	0604851F ICBM - EMD	133B				
(U) <u>Government Furnished Property Continued:</u>						
<u>Test and Evaluation Property</u>						
None						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						<u>Program</u>
Subtotal Product Development				4,598	17,795	24,172
Subtotal Support and Management				657	2,866	5,443
Subtotal Test and Evaluation						
Total Project				5,255	20,661	29,615
						55,531

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT 4371			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
4371	Safety Enhanced Reentry Vehicle (SERV) Program	0	51,603	64,046	55,769	34,536	19,657	0	0	225,611	
<p>(U) <u>A. Mission Description</u> The Minuteman III (MM III) weapon system is planned to become the only Intercontinental Ballistic Missile (ICBM) component of the Strategic Triad and is required to provide nuclear deterrence. Recent developments concerning nuclear weapons safety and force structure changes driven by strategic arms reductions require the capability to transition Mk 21 Reentry Vehicles (RV) from the Peacekeeper Weapon System to MM III. The Safety Enhanced Reentry Vehicle (SERV) program will modify the MM III weapon system to accept Mk 21 RVs. These modifications include changes to the MM III Reentry System (RS) to accommodate differences in electrical and mechanical interfaces, system software, support equipment, and trainers. Three (3) test articles will be developed each year in FY02, FY03, and FY04 to support development and qualification testing, flight testing, systems integration, and weapon system-level testing.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity - System Development & Demonstration (SDD) began in FY02 (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$12,923 Design the MM III airborne vehicle equipment (AVE) hardware and software needed for the Mk 21 RV. (U) \$17,438 Develop the MM III command and launch equipment software needed for the Mk 21 RV. (U) \$7,994 Design the MM III support equipment needed for the Mk 21 RV. (U) \$12,935 Perform system test and evaluation, to include preplanning and analysis, for all the newly designed/developed hardware/software. (U) \$313 Develop trainers/training needed for employing the Mk 21 RV on the MM III. (U) \$51,603 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$11,496 Continue to design the MM III airborne vehicle equipment (AVE) hardware and software needed for the Mk 21 RV. (U) \$24,313 Continue to develop the MM III command and launch equipment software needed for the Mk 21 RV. (U) \$11,639 Continue the design effort of the MM III support equipment needed for the Mk 21 RV. (U) \$15,951 Continue to perform system test and evaluation, to include preplanning and analysis, for all the newly designed/developed hardware/software. (U) \$647 Continue to develop trainers/training needed for employing the Mk 21 RV on the MM III</p>											
Project 4371				Page 8 of 28 Pages				Exhibit R-2A (PE 0604851F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT 4371	
(U) <u>A. Mission Description Continued</u>									
(U) <u>FY 2003 (\$ in Thousands) Continued</u>									
(U) \$64,046 Total									
(U) <u>B. Project Change Summary</u>									
No significant changes.									
(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN									
(U) Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, Safety Enhanced Reentry Vehicle, Mod #5911) (BA-03, P-011)				21,900	47,900	25,900	29,060	23,592	148,352
(U) <u>D. Acquisition Strategy</u>									
All efforts will be conducted under a C/Cost Plus Award Fee (CPAF) contract with the ICBM Prime Integration Contractor, (IPIC) with the exception of Nuclear Safety Cross Check Analysis (NSCCA) and Performance Analysis & Technical Evaluation (PATE) which will be contracted for separately.									
(U) <u>E. Schedule Profile</u>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
(U) Complete Pre-EMD (Started Sep 99)						*			
(U) System Functional Review				*					
(U) Milestone B							X		
(U) Contract Award--System Development & Demonstration (SDD)							X		
(U) Preliminary Design Review (PDR)								X	
(U) System Software Critical Design Review (CDR)									X
Project 4371	Page 9 of 28 Pages				Exhibit R-2A (PE 0604851F)				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002						
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT 4371					
(U) <u>E. Schedule Profile Continued</u>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
* - Completed Event		X - Planned Event											
Project 4371				Page 10 of 28 Pages				Exhibit R-2A (PE 0604851F)					

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604851F ICBM - EMD				4371		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Component Design/Development							30,674		36,456
(U)	Support Equipment Design/Development							7,994		11,639
(U)	System Test and Evaluation							12,935		15,951
(U)	Total							51,603		64,046
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
TRW (Prime)	C/CPAF	Feb 02	165,759	165,759	0	0	40,777	51,616	73,366	165,759
<u>Support and Management Organizations</u>										
Nuclear Safety Cross Check Analysis (NSCCA)/Performance Analysis & Technical Evaluation (PATE)	SS/CPAF	Jan 02	17,278	17,278	0	0	5,488	5,576	6,214	17,278
Various	Various	Jan 02	24,953	24,953	0	0	5,338	6,854	12,761	24,953
<u>Test and Evaluation Organizations</u>										
Vandenberg AFB	Project Order	TBD	17,621	17,621	0	0	0		17,621	17,621
(U) Government Furnished Property:										
<u>Item</u>	<u>Contract</u>									
<u>Description</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
	<u>or Funding</u>	<u>Obligation</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
	<u>Vehicle</u>	<u>Date</u>								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE		
BUDGET ACTIVITY				PROJECT		
05 - Engineering and Manufacturing Development				February 2002		
PE NUMBER AND TITLE				PROJECT		
0604851F ICBM - EMD				4371		
(U) Government Furnished Property Continued:						
	<u>Contract</u>	<u>Award or</u>				
<u>Item</u>	<u>Method/Type</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
<u>Description</u>	<u>or Funding</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>
	<u>Vehicle</u>					
<u>Product Development Property</u>						
None						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Budget</u>
						<u>FY 2003</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development				0	0	40,777
Subtotal Support and Management				0	0	10,826
Subtotal Test and Evaluation				0	0	0
Total Project				0	0	51,603
						64,046
						109,962
						225,611

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT 4788	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4788 PSRE Life Extension Program	14,203	19,425	21,030	10,636	0	0	0	0	73,415
<p>(U) <u>A. Mission Description</u> The Propulsion System Rocket Engine (PSRE) Life Extension Program will refurbish the Minuteman (MM) III post-boost vehicle (PBV) propulsion system. This refurbishment will correct age-related degradations, reduce life cycle costs, and support MM III life extension while maintaining existing weapon system reliability. Deficiencies identified (e.g., relief valve aging, titanium pressure sensing (PC) tube cracking, and fuel flex line cracks) may cause system failure/loss of performance and, in turn, potential mission failure. Other deficiencies (e.g., staging connector aging and actuator motor performance) will impact weapon system availability in addition to reducing system performance.</p> <p>RDT&E efforts will identify replacement materials for those no longer available or which have become environmentally unacceptable. The program will then design/develop components and manufacturing processes necessary to correct the identified deficiencies.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$10,641 Continued component design/development of components requiring refurbishment or replacement. (U) \$2,900 Continued support equipment design/development of necessary support equipment. (U) \$662 Began Test and Evaluation efforts. (U) \$14,203 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$8,243 Assemble Qualification Kits, Refurbish Verification PSRE, Conduct Initial Readiness Review of System, Refurbish two Qualification PSREs, Support Dynamics Test Qualification PSREs, Support first qualification test firing, Shipping Container Process Verification. (U) \$2,001 Develop Emergency Response efforts and begin transportation build. (U) \$1,300 Continue Equipment Installation and Integration into the Centrifuge and Pendulum Facility as well as Facility Checkout Testing. (U) \$1,100 Perform Dynamics and Qualification Testing. (U) \$6,781 Provide technician labor activities to include disassembly/reassembly of PSRE and selected subsystems; maintenance and repair of program unique depot support equipment (DSE), special test equipment (STE), and government furnished equipment (GFE); program office support; and other related activities.</p>									
Project 4788			Page 13 of 28 Pages				Exhibit R-2A (PE 0604851F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002																																																
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM - EMD	PROJECT 4788																																																
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$19,425 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$12,610 Continue Initial Readiness Review of System, Support Dynamics Test Qualification PSREs, Support Test Firing, continued vendor qualification.</p> <p>(U) \$1,000 Continue develop Emergency Response efforts and begin transportation build</p> <p>(U) \$2,000 Continue Dynamics and Qualification Testing</p> <p>(U) \$5,420 Provide technician labor activities to include disassembly/reassembly of PSRE and selected subsystems, maintenance and repair of program unique depot support equipment (DSE), special test equipment (STE); and Government Furnished Equipment (GFE), program office support.</p> <p>(U) \$21,030 Total</p> <p>(U) <u>B. Project Change Summary</u> Program restructured to meet revised development objectives.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 5%;"><u>FY 2001</u></th> <th style="width: 5%;"><u>FY 2002</u></th> <th style="width: 5%;"><u>FY 2003</u></th> <th style="width: 5%;"><u>FY 2004</u></th> <th style="width: 5%;"><u>FY 2005</u></th> <th style="width: 5%;"><u>FY 2006</u></th> <th style="width: 5%;"><u>FY 2007</u></th> <th style="width: 5%;"><u>Cost to</u></th> <th style="width: 5%;"><u>Total Cost</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Actual</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Estimate</u></th> <th style="text-align: center;"><u>Complete</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, PSRE Life Extension, Mod #5768) (BA-03, P-011)</td> <td></td> <td></td> <td></td> <td style="text-align: right;">11,340</td> <td style="text-align: right;">20,650</td> <td style="text-align: right;">19,105</td> <td style="text-align: right;">19,710</td> <td style="text-align: right;">64,430</td> <td style="text-align: right;">135,235</td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> The PSRE Life Extension Program will be conducted under the ICBM Prime Integration Contractor (IPIC) in partnership with the Government.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;"></th> <th style="width: 33%; text-align: center;"><u>FY 2001</u></th> <th style="width: 33%; text-align: center;"><u>FY 2002</u></th> <th style="width: 33%; text-align: center;"><u>FY 2003</u></th> </tr> </thead> <tbody> <tr> <td>Project 4788</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) Other APPN										(U) Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, PSRE Life Extension, Mod #5768) (BA-03, P-011)				11,340	20,650	19,105	19,710	64,430	135,235		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	Project 4788			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>																																									
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>																																										
(U) Other APPN																																																		
(U) Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, PSRE Life Extension, Mod #5768) (BA-03, P-011)				11,340	20,650	19,105	19,710	64,430	135,235																																									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>																																															
Project 4788																																																		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
05 - Engineering and Manufacturing Development					0604851F ICBM - EMD					4788			
(U) <u>E. Schedule Profile Continued</u>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U)	Contract Milestones												
(U)	-- Production Decision (2QFY04)												
(U)	Engineering Milestones												
(U)	-- PDR												
		*											
(U)	-- CDR												
										*			
(U)	-- Tech Order Validation												
(U)	T&E Milestones												
(U)	-- First Qualification Test Fire												
												X	
	* - Completed Event X - Planned Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development				0604851F ICBM - EMD				4788			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Component Design/Development					10,641		17,025		18,030	
(U)	Support Equipment Design/Development					2,900		1,300		1,000	
(U)	System Test and Evaluation					662		1,100		2,000	
(U)	Total					14,203		19,425		21,030	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government</u>	<u>Contract Method/Type or Funding</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
	<u>Product Development Organizations</u>										
	TRW (Prime)	C/CPAF	Oct 99	45,236	45,236	7,574	13,025	10,730	9,400	4,507	45,236
	<u>Support and Management Organizations</u>										
	SPO/OO-ALC Support	WR	Annual	N/A	26,794	547	1,178	8,695	10,130	6,129	26,679
	<u>Test and Evaluation Organizations</u>										
	White Sands Test Facility (WSTF)	PO	As Req'd	1,500	1,500	0	0		1,500	0	1,500
(U) Government Furnished Property:											
	<u>Item</u>	<u>Contract Method/Type or Funding</u>	<u>Award or Obligation</u>	<u>Delivery</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>							
	<u>Product Development Property</u>										
	None										
	<u>Support and Management Property</u>										
	None										
Project 4788				Page 16 of 28 Pages				Exhibit R-3 (PE 0604851F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
05 - Engineering and Manufacturing Development		0604851F ICBM - EMD			February 2002 4788	
(U) <u>Government Furnished Property Continued:</u>						
<u>Test and Evaluation Property</u>						
None						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						
Subtotal Product Development		7,574	13,025	10,730	9,400	45,236
Subtotal Support and Management		547	1,178	8,695	10,130	26,679
Subtotal Test and Evaluation		0	0		1,500	1,500
Total Project		8,121	14,203	19,425	21,030	73,415

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT 4823	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4823 ECS Replacement Program	0	0	11,992	13,951	0	0	0	0	25,943
<p>In FY 2003, Project 4823, ECS Replacement Program, includes new start efforts.</p> <p>(U) <u>A. Mission Description</u> The existing Minuteman environmental control system (ECS) was deployed in the 1960s with a 10-year life. The Brine chillers were upgraded in the mid 1980s, however those units have reached the end of their 10-to-15 year design life and must be replaced. Aging and obsolete ECS technology are adversely effecting weapon system availability as well as maintenance costs due to increased failure rates, non-availability of replacement parts, lack of diagnostic capabilities, and related supportability problems. This program will modify the existing ECS in Minuteman Launch Facilities (LFs), Missile Alert Facilities (MAFs), and test and trainer sites to comply with the updated environment standards specified in the ECS Replacement Operational Requirements Document (ORD) as well as to take advantage of new technologies to extend ECS life to 2020.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity - System Development & Demonstration (SDD) begins in FY03 (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity - System Development and Demonstration (SDD) begins in FY03 (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$9,746 Begin design/development of non-recurring equipment (U) \$1,046 Identify and begin preparation/compellation of data requirements (U) \$300 Provide analysis and identify simulator/trainer requirements (U) \$600 Provide other government support (U) \$300 Conduct site surveys as required (U) \$11,992 Total</p> <p>(U) <u>B. Project Change Summary</u></p>									
Project 4823			Page 18 of 28 Pages				Exhibit R-2A (PE 0604851F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT 4823		
(U) C. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN									
(U) Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, Environmental Control System Modification, Mod #5739) (BA-03, P-011)					16,714	54,406	62,742	150,939	284,801
(U) D. Acquisition Strategy									
The ECS Replacement Program will be conducted under the ICBM Prime Integration Contractor (IPIC). The IPIC will conduct and manage the acquisition effort to determine the best value to the Government. It is anticipated that the development effort will be completed on a Cost Plus Award Fee (CPAF) contract.									
(U) E. Schedule Profile									
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>	
			1	2	3	4	1	2	3
(U) Contract Milestones									
(U) -- Milestone B								X	
(U) -- SDD Contract Award								X	
(U) Engineering Milestones									
(U) -- PDR (1st Qtr, FY04)									
(U) -- CDR (3rd Qtr, FY04)									
* - Completed Event									
X - Planned Event									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development				0604851F ICBM - EMD				4823			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Product Development									11,392	
(U)	Support and Management									600	
(U)	Total									11,992	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	TRW (Prime)	C/CPAF	2QFY03	24,743	24,743	0	0	0	11,392	13,351	24,743
	<u>Support and Management Organizations</u>										
	Various	Various	2QFY03	1,200	1,200	0	0	0	600	600	1,200
	<u>Test and Evaluation Organizations</u>										
	None										
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	None										
	<u>Support and Management Property</u>										
	None										
	<u>Test and Evaluation Property</u>										
	None										
Project 4823				Page 20 of 28 Pages				Exhibit R-3 (PE 0604851F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE				
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
05 - Engineering and Manufacturing Development		0604851F ICBM - EMD			February 2002 4823	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Total</u>
	<u>Subtotals</u>					
	Subtotal Product Development	0	0	0	11,392	24,743
	Subtotal Support and Management	0	0	0	600	1,200
	Subtotal Test and Evaluation					
	Total Project	0	0	0	11,992	25,943

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD				PROJECT 5007		
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5007	GPS Metric Tracking Capability	0	4,000	5,686	0	0	0	0	0	9,686
<p>(U) <u>A. Mission Description</u> As part of the ongoing Range Standardization and Automation (RSA) effort, the retirement of radar-based legacy range instrumentation for tracking and controlling Minuteman force development evaluation (FDE) flights at the Western Range is planned to begin in FY07. The range will be transitioning to a Global Positioning System (GPS) based tracking system. Future procurement of the Minuteman Instrumentation Range Safety Wafers (aka Mod 7 Instrumentation Wafers) will incorporate GPS technology. The current inventory of instrumentation wafers equipped with radar beacons will run out in second quarter of FY06. Therefore, the Western Range and the Minuteman weapon system must be made ready to support GPS range certification flights in FY04 to ensure that the GPS tracking system (both the ground and on-vehicle segments) is operational by FY06. This program will develop, modify, test and flight certify the necessary GPS hardware integrated in the Mod 7 Instrumentation Wafer to support flight test operations of the Minuteman weapon system from the Western Range using GPS. This metric tracking system will provide range operations with near instantaneous time/space position information and flight profile data required to safely conduct launch operations.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity -- System Development & Demonstration (SDD) began in FY02 (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$3,800 Begin the design and development of the hardware needed to provide Minuteman with a GPS-based metric tracking capability. (U) \$200 Provide program office support. (U) \$4,000 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$5,486 Continue the design and design and development of the hardware needed to provide Minuteman with a GPS-based metric tracking capability. (U) \$200 Provide program office support. (U) \$5,686 Total</p> <p>(U) <u>B. Project Change Summary</u> FY03: Funding added to complete the System Development and Demonstration (SDD).</p>										
Project 5007				Page 22 of 28 Pages				Exhibit R-2A (PE 0604851F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT 5007			
(U) C. Other Program Funding Summary (\$ in Thousands)										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) Other APPN										
(U) Missile Procurement - AF (PE 0101213F, Minuteman Squadrons, MM III Modifications, GPS Metric Tracking Program, Mod #5799) (BA-03, P-011)			3,348	3,700	500				7,548	
(U) Related RDT&E PE 0605860F, RSLP (Space) (GPS Metric Tracking) (BA-06, R-101) PE 0604853F, EELV (GPS Metric Tracking) (BA-05, R-088)										
(U) D. Acquisition Strategy A Cost Plus Award Fee (CPAF) contract addendum to the ICBM Prime Integration Contract with scheduled effort to begin in 2QFY02.										
(U) E. Schedule Profile										
			<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>		
			1	2	3	4	1	2	3	4
(U) Contract Milestones										
(U) -- Milestone B							X			
(U) -- System Development & Demonstration (SDD) Contract Award							X			
(U) Engineering milestones										
(U) -- PDR									X	
(U) -- CDR (1st Qtr, FY04)										
* - Completed Event										
X - Planned Event										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development					0604851F ICBM - EMD			5007		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Design/Development of Hardware							3,800		5,486
(U)	Program Office Support							200		200
(U)	Total							4,000		5,686
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
	<u>Contractor or</u>	<u>Contract</u>								
	<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>					
	<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									
	TRW	C/CPAF	Jan 02	TBD	9,286	0	0	3,800	5,486	0
	<u>Support and Management Organizations</u>									
	Other	Various	TBD	TBD	400	0	0	200	200	0
	<u>Test and Evaluation Organizations</u>									
						<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
	Subtotal Product Development					0	0	3,800	5,486	0
	Subtotal Support and Management					0	0	200	200	0
	Subtotal Test and Evaluation									
	Total Project					0	0	4,000	5,686	0
										9,686

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604851F ICBM - EMD	PROJECT 5037
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5037 Support Equipment	0	0	9,876	23,259	0	0	0	0	33,135

In FY 2003, Project 5037, Support Equipment, includes new start efforts.

(U) A. Mission Description

Support Equipment is used for missile weapons systems maintenance and refurbishment at organizational/intermediate (base/field) and depot levels, launch control facilities, as well as missile testing facilities. Funding provides replacement support equipment for an aging inventory of equipment that has become increasingly more costly to maintain. This equipment will sustain ballistic missile system reliability and maintainability and restore minimum capabilities needed to support maintenance and testing requirements. The equipment supports the Minuteman (LGM-30) missile weapons system. Requirements for the replacement support equipment are jointly determined by Headquarters United States Air Force (HQ USAF), Air Force Materiel Command, (AFMC) and Air Force Space Command (AFSPC) based on established tables of allowances. The 3600 funds will allow for the necessary engineering, development, and testing associated with the replacement effort.

(U) FY 2001 (\$ in Thousands)

(U) \$0 No Activity - System Development and Testing began in FY03.
(U) \$0 Total

(U) FY 2002 (\$ in Thousands)

(U) \$0 No Activity - System Development and Testing began in FY03.
(U) \$0 Total

(U) FY 2003 (\$ in Thousands)

(U) \$2,598 Identify, define and document initial system requirements and specifications.
(U) \$6,592 Begin design, development, testing and qualification.
(U) \$686 Provide program support.
(U) \$9,876 Total

(U) B. Project Change Summary

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002						
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604851F ICBM - EMD			PROJECT 5037					
(U) C. Other Program Funding Summary (\$ in Thousands)													
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>				
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>					
(U) AF RDT&E													
(U) Other APPN													
(U) D. Acquisition Strategy													
The Support Equipment Program will be conducted under the ICBM Prime Integration Contractor (IPIC). The IPIC will conduct and manage the acquisition effort to determine the best value to the Government. It is anticipated that the development effort will be completed on a Cost Plus Award Fee (CPAF) contract.													
(U) E. Schedule Profile													
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Milestones													
(U) -- Contract Award (2QFY03)													
(U) Engineering Milestones													
(U) -- Preliminary Design Review (PDR)													
(U) -- Critical Design Review (CDR) (1QFY04)													
Project 5037			Page 26 of 28 Pages				Exhibit R-2A (PE 0604851F)						

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT			
05 - Engineering and Manufacturing Development				0604851F ICBM - EMD				5037			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Product Development									9,190	
(U)	Support and Management									686	
(U)	Total									9,876	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	TRW (Prime)	C/CPAF	2QFY03	TBD	30,999	0	0	0	9,190	21,809	30,999
	<u>Support and Management Organizations</u>										
	SPO/Other Program	TBD	TBD	TBD	2,136	0	0	0	686	1,450	2,136
	<u>Test and Evaluation Organizations</u>										
	None										
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Property</u>										
	None										
	<u>Support and Management Property</u>										
	None										
	<u>Test and Evaluation Property</u>										
	None										
Project 5037				Page 27 of 28 Pages				Exhibit R-3 (PE 0604851F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE					
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development		0604851F ICBM - EMD			5037		
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	
						<u>Total</u>	
						<u>Program</u>	
<u>Subtotals</u>							
Subtotal Product Development		0	0	0	9,190	21,809	30,999
Subtotal Support and Management		0	0	0	686	1,450	2,136
Subtotal Test and Evaluation							
Total Project		0	0	0	9,876	23,259	33,135

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604853F Evolved Expendable Launch Vehicle - EMD 0004
PROJECT	

COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0004 Evolved Expendable Launch Vehicle	377,628	315,321	57,562	1,000	1,000	0	0	0	1,339,705
Quantity of RDT&E Articles	0	0	1	0	0	0	0	0	1

(U) A. Mission Description

The Evolved Expendable Launch Vehicle (EELV) program is a jointly funded (government and industry) space launch system developed in partnership with industry to provide two internationally competitive families of launch vehicles (Delta IV & Atlas V). The program will satisfy the government's National Launch Forecast (NLF) requirements, reduce the cost of space launch by at least 25%, and satisfy commercial satellites industrial launch services needs.

EELV is a commercial launch service, not a weapon system. The EELV system includes launch vehicles, a standard payload interface, support systems, mission integration (includes mission unique requirements), flight instrumentation and range interfaces, special studies (mission feasibility analysis, secondary payloads, dual manifesting, special flight instrumentation, loads analysis, etc.), post-flight data evaluation and analysis, mission assurance, system/process and reliability improvements, training, and technical support. The program will also design and develop a Global Positioning System (GPS) Metric Tracking capability to modify boosters needed to use GPS for obtaining real-time position data. In addition, the system includes facility modifications and upgrades at Vandenberg AFB, CA, and Cape Canaveral AFS, FL, (including Building 34705), and launch site / operations activities.

The EELV system provides two families of commercial launch vehicles that will launch the government portion of the NLF, currently serviced by Titan II, Delta II, Atlas II/III, and Titan IV, via contractor provided commercial launch service. Evolved from current expendable launch systems or components thereof, EELV will support military, intelligence, and civil mission requirements.

An EELV Heavy Lift Vehicle (HLV) demonstration was added to the program in response to the Space Broad Area Review (BAR) and the EELV Joint Assessment Team (JAT) to increase mission assurance and confidence in the HLV. A HLV demonstration test article is scheduled for launch in FY03.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604853F Evolved Expendable Launch Vehicle - EMD 0004																																	
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <table style="width:100%; border: none;"> <tr> <td style="width:15%;">(U) \$303,957</td> <td>Continued System Development/Analysis</td> </tr> <tr> <td>(U) \$13,182</td> <td>Provided Systems Engineering</td> </tr> <tr> <td>(U) \$12,489</td> <td>Program Management and Other Support Costs</td> </tr> <tr> <td>(U) \$48,000</td> <td>Continued Heavy Lift Vehicle (HLV) Demonstration Integration</td> </tr> <tr> <td>(U) \$377,628</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <table style="width:100%; border: none;"> <tr> <td style="width:15%;">(U) \$213,174</td> <td>Continue System Development/Analysis</td> </tr> <tr> <td>(U) \$25,504</td> <td>Provide Systems Engineering</td> </tr> <tr> <td>(U) \$15,143</td> <td>Program Management and Other Support Costs</td> </tr> <tr> <td>(U) \$8,500</td> <td>Begin GPS Metric Tracking Booster Capability Integration</td> </tr> <tr> <td>(U) \$53,000</td> <td>Continue HLV Demonstration Integration</td> </tr> <tr> <td>(U) \$315,321</td> <td>Total</td> </tr> </table> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <table style="width:100%; border: none;"> <tr> <td style="width:15%;">(U) \$9,031</td> <td>Complete System Development/Analysis</td> </tr> <tr> <td>(U) \$2,831</td> <td>Other Support Costs</td> </tr> <tr> <td>(U) \$17,700</td> <td>Continue GPS Metric Tracking Booster Capability Integration</td> </tr> <tr> <td>(U) \$28,000</td> <td>Continue HLV Demonstration Integration; Accomplish Demonstration Article Launch and Delivery/Review</td> </tr> <tr> <td>(U) \$57,562</td> <td>Total</td> </tr> </table> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program element is in Budget Activity 5, Engineering and Manufacturing Development, because it supports engineering and manufacturing development of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.</p>			(U) \$303,957	Continued System Development/Analysis	(U) \$13,182	Provided Systems Engineering	(U) \$12,489	Program Management and Other Support Costs	(U) \$48,000	Continued Heavy Lift Vehicle (HLV) Demonstration Integration	(U) \$377,628	Total	(U) \$213,174	Continue System Development/Analysis	(U) \$25,504	Provide Systems Engineering	(U) \$15,143	Program Management and Other Support Costs	(U) \$8,500	Begin GPS Metric Tracking Booster Capability Integration	(U) \$53,000	Continue HLV Demonstration Integration	(U) \$315,321	Total	(U) \$9,031	Complete System Development/Analysis	(U) \$2,831	Other Support Costs	(U) \$17,700	Continue GPS Metric Tracking Booster Capability Integration	(U) \$28,000	Continue HLV Demonstration Integration; Accomplish Demonstration Article Launch and Delivery/Review	(U) \$57,562	Total
(U) \$303,957	Continued System Development/Analysis																																	
(U) \$13,182	Provided Systems Engineering																																	
(U) \$12,489	Program Management and Other Support Costs																																	
(U) \$48,000	Continued Heavy Lift Vehicle (HLV) Demonstration Integration																																	
(U) \$377,628	Total																																	
(U) \$213,174	Continue System Development/Analysis																																	
(U) \$25,504	Provide Systems Engineering																																	
(U) \$15,143	Program Management and Other Support Costs																																	
(U) \$8,500	Begin GPS Metric Tracking Booster Capability Integration																																	
(U) \$53,000	Continue HLV Demonstration Integration																																	
(U) \$315,321	Total																																	
(U) \$9,031	Complete System Development/Analysis																																	
(U) \$2,831	Other Support Costs																																	
(U) \$17,700	Continue GPS Metric Tracking Booster Capability Integration																																	
(U) \$28,000	Continue HLV Demonstration Integration; Accomplish Demonstration Article Launch and Delivery/Review																																	
(U) \$57,562	Total																																	
Project 0004	Page 2 of 7 Pages	Exhibit R-2 (PE 0604853F)																																

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development				0604853F Evolved Expendable Launch Vehicle - EMD			0004		
(U) C. Program Change Summary (\$ in Thousands)									
			<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>		
(U)	Previous President's Budget		329,897	320,321	39,862		1,288,724		
(U)	Appropriated Value		332,952	315,321					
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions		-2,331						
	b. Small Business Innovative Research								
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram		-270						
	e. Rescissions		-723						
(U)	Adjustments to Budget Years Since FY 2002 PBR		48,000		17,700				
(U)	Current Budget Submit/FY 2003 PBR		377,628	315,321	57,562		1,339,705		
(U) Significant Program Changes:									
FY 2001: \$48M increase was funded in the FY01 Supplemental Appropriation to support the HLV demonstration which is scheduled to launch in FY03, approximately four months prior to the first operational government HLV launch.									
FY 2003: \$17.7M increase is a result of additional funds to provide GPS Metric Tracking capability to the boosters.									
SPO Management costs for FY03 and beyond are funded in PE0305953F, MPAF due to transition to production									
(U) D. Other Program Funding Summary (\$ in Thousands)									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
(U)	AF RDT&E								176,634
(U)	Other APPN								
(U)	NRO (Non-AF budget)*								95,100
(U)	MPAF (BA 05, PE 0305953F, P-28)**	286,287	98,007	158,867	621,450	570,180	710,264	930,384	7,749,910
(U)	DARPA (Non-AF Budget)								9,845

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604853F Evolved Expendable Launch Vehicle - EMD 0004			PROJECT 0004		
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
<p>(PE 0603226E)***</p> <p>* Total includes FY96 and FY97 funding.</p> <p>** The Cost To Complete value is an estimate that fluctuates driven by the commercial market demand for launch services. The current estimate of \$7,749.9M is derived from the 2001 Commercial Space Transportation Advisory Committee (COMSTAC) Report based on 491 launches through 2020 (reduced from 941 projected launches in the 2000 COMSTAC Report). It should be noted that market demands/projections beyond 24 months are fluid, and significant swings in annual market demand and Cost To Complete values should be expected.</p> <p>*** Total includes FY94 funding.</p> <p>(U) <u>E. Acquisition Strategy</u></p> <p>The EELV concept of families of launch vehicles emphasizes commonality of hardware, infrastructure and economies of scale to enhance production, operations, and support efficiencies. Four initial contracts were awarded for the Low Cost Concept Validation (LCCV) phase in August 1995. The Air Force downselected to two contractors - The Boeing Company (TBC - originally McDonnell Douglas) and Lockheed Martin Astronautics (LMA) - for the Pre-Engineering and Manufacturing Development (Pre-EMD) phase in December 1996. On 16 Oct 1998, two \$500M Other Transaction Agreements (OTA) were awarded to TBC and LMA for the development effort. The contractors will contribute additional funds of their own, as necessary, to bring their national launch operational capability on line. It is estimated that each contractor is investing approximately \$1B. Simultaneous with the award of the development effort, Initial Launch Services (ILS) contract was awarded to Boeing for \$1.38B (19 missions) and an ILS contract was awarded to Lockheed Martin for \$649M (9 missions).</p> <p>On 18 Sep 2000, a revised acquisition strategy was reviewed by the DEPSECDEF and signed by USD (AT&L). Under the revised strategy, only TBC will develop a Vandenberg AFB launch facility. LMA transferred two west coast DMSP missions to TBC and provided the government additional consideration. Furthermore, the program restructure included the procurement of a SECAF-directed heavy lift demonstration launch to increase confidence in the Delta IV Heavy Lift Vehicle (HLV) prior to the first operational government HLV launch.</p> <p>The Development/ILS approach maintains competition throughout the life of the program, leverages the growing commercial launch market, caps the government's development costs, and allows partnership with industry, while still reducing the program's overall cost to launch the NLF by at least 25% over existing systems. The EELV system will launch the government portion of the NLF through 2020 and the government will continue to work in partnership with industry to capture continuous product and process improvements that will enhance reliability and reduce both the contractors' and government's total operating costs..</p>									
Project 0004			Page 4 of 7 Pages			Exhibit R-2 (PE 0604853F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
05 - Engineering and Manufacturing Development					0604853F Evolved Expendable Launch Vehicle - EMD 0004									
(U) <u>F. Schedule Profile</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) Atlas V Roll-Out		*												
(U) Boeing Pad 37 Dedication					*									
(U) Boeing RS-68 Engine Certification					*									
(U) 1st Commercial Atlas V Launch							X							
(U) 1st Commercial Delta IV Launch								X						
(U) 1st Government Medium Launch									X					
(U) HLV Demonstration Launch									X					
* completed event														
X planned event														
Project 0004														
Page 5 of 7 Pages														
Exhibit R-2 (PE 0604853F)														

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002				
BUDGET ACTIVITY					PE NUMBER AND TITLE			PROJECT			
05 - Engineering and Manufacturing Development					0604853F Evolved Expendable Launch Vehicle - EMD			0004			
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
(U)	System development					303,957		221,674		26,731	
(U)	Systems Engineering					13,182		25,504			
(U)	Program management and other support costs					12,489		15,143		2,831	
(U)	HLV demonstration					48,000		53,000		28,000	
(U)	Total					377,628		315,321		57,562	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	<u>Product Development Organizations</u>										
	Prime Contractor Boeing	OTA	Oct 98	641,452	641,452	278,062	231,817	131,782	45,881	1,000	688,542
	Prime Contractor Lockheed Martin	OTA	Oct 98	500,000	500,000	265,886	120,140	142,892	8,850	1,000	538,768
	<u>Support and Management Organizations</u>										
	SPO/CTF Mission Spt	Various	Various	33,337	33,337	14,120	8,015	9,973	2,831	0	34,939
	FFRDC	SS/CPAF	Annual	67,214	67,214	25,394	13,182	25,504	0	0	64,080
	Other Cntr Spt	Various	Various	14,013	14,013	3,732	4,474	5,170	0	0	13,376
	<u>Test and Evaluation Organizations</u>										
	None										
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
	Project 0004										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE		
BUDGET ACTIVITY				PROJECT		
05 - Engineering and Manufacturing Development				0604853F Evolved Expendable Launch Vehicle - EMD 0004		
(U) Government Furnished Property Continued:						
<u>Item</u>	<u>Contract</u>	<u>Award or</u>				
<u>Description</u>	<u>Method/Type</u>	<u>or Funding</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Budget</u>
						<u>FY 2003</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Product Development Property</u>						
None						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>
				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>
						<u>Budget</u>
						<u>FY 2003</u>
						<u>Budget to</u>
						<u>Complete</u>
						<u>Total</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development				543,948	351,957	274,674
Subtotal Support and Management				43,246	25,671	40,647
Subtotal Test and Evaluation						
Total Project				587,194	377,628	315,321
						57,562
						2,000
						1,339,705

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 05 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0605011F RDT&E For Aging Aircraft	PROJECT 4685
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4685 Aging Aircraft	24,659	41,211	19,871	24,699	25,176	25,670	26,169	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

- (U) **A. Mission Description**
 This program extends the service life, controls the rapidly rising sustainment costs, and retains the operational capability of the aging aircraft fleet. Using business case analyses, cross-cutting opportunities to reduce total ownership costs and improve productivity, reliability, availability, and maintainability are identified. The program develops tools to facilitate the sharing of aging aircraft information, knowledge, technology, and solutions among the Air Logistics Centers, Product Centers, System Program Offices, other Services and government agencies, and industry. The program provides senior Air Force decision makers with a common, comprehensive understanding of program areas such as corrosion, wiring, etc. The program also analyzes and recommends changes to existing sustainment processes such as field and depot repair processes. Note: In FY2002 Congress added \$21.5M to this program for Aging Wiring & Corrosion Treatment (\$7.0M), Aging Landing Gear Life Extension (\$10.5M), Aging propulsion Systems Life Extension (\$2.0M), and Knowledge Portal (\$2.0M).
- (U) **FY 2001 (\$ in Thousands)**
- (U) \$166 Continued corrosion maintenance improvements. Developed abatement processes and temporary repairs. Provided a wider range of repair options. Reduced the cost and man-hours associated with corrosion maintenance. Continued development and integration of software and analytical tools to support corrosion management such as environmental exposure models and corrosion damage analyses that better allowed engineers to anticipate workload.
 - (U) \$5,684 Continued work on improved non-destructive inspection (NDI) techniques. Reduced the time required to detect flaws and damage (e.g., fatigue cracking, corrosion, disbonds, and trapped moisture). Enabled early damage detection, thus allowing for less costly repairs. Developed NDI techniques to detect cracks without removing fasteners, reducing inspection time as well as eliminating the potential for further damage by removing fasteners. Expanded the application of ultrasonic inspection techniques to detect fatigue cracks in internal wing structure from the outside of the aircraft, which eliminated fuel tank entry requirements and potential damaging rivet removal.
 - (U) \$7,133 Continued work on technologies to maintain the structural integrity of aging weapon systems, ensuring continued flight safety. Developed viable procedures to correct the delamination of aging integral fuel tank coatings, which improved corrosion protection and eliminate the need to replace wing skins.
 - (U) \$176 Continued studies to identify policies and processes that needed to be developed or refined to help resolve aging avionics/electronics issues

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0605011F RDT&E For Aging Aircraft	4685
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
	such as parts obsolescence and diminishing manufacturing sources. Initiated development of integrated avionics/electronics change management plans for common solutions across multiple platforms.	
(U) \$10,000	Initiated and completed engineering tasks associated with Aging Landing Gear Life Extension program (Congressional add).	
(U) \$1,500	Initiated and completed Aging Aircraft efforts related to Viable Combat Avionics (Congressional add).	
(U) \$24,659	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$6,230	Continue corrosion maintenance improvements. Develop corrosion abatement techniques, procedures, and temporary repairs. Expand the range of available repair technologies. Reduce the cost and man-hours associated with corrosion maintenance actions. Continue development and integration of software and analytical tools to support corrosion management workload prediction (e.g., environmental exposure models, corrosion damage analyses).	
(U) \$1,100	Continue work on improved non-destructive inspection (NDI) techniques. Shorten detection time for flaws and damage due to fatigue cracking, corrosion, composite material delaminations, and trapped moisture. Sponsor technology advancements to enable early damage detection, thus allowing for less costly repairs over the weapon system life cycle. Continue work on NDI techniques to detect cracks without removing fasteners to reduce inspection time and eliminate the potential for further damage by removing fasteners. Broaden the application of ultrasonic inspection techniques to detect fatigue cracks in internal wing structure from the outside of the aircraft to eliminate fuel tank entry requirements and potential damage caused by rivet removal.	
(U) \$4,800	Continue work on technologies to maintain the structural integrity of aging weapon systems to ensure continued flight safety. Develop viable procedures to correct the delamination of aging integral fuel tank coatings for improved corrosion protection and elimination of wing skin replacements.	
(U) \$1,930	Conduct analyses on aging aircraft problems to drive affordable modernization and sustainment solutions. Leverage existing knowledge of aging aircraft structures, avionics, and propulsion into business case analyses and related efforts to identify opportunities to reduce total ownership costs.	
(U) \$3,958	Develop cross-cutting aging aircraft system solutions (e.g., an NDI corrosion assessment tool for accurate structural health assessments, viable combat avionics). Develop techniques to incorporate high strength, corrosion resistant alloys into legacy airframes. Study aging wiring in the F-16 and C-17 fleet. Develop techniques for predicting aging wiring problems. Improve repair procedures to maintain the integrity of aging integral fuel tank coating materials.	
Project 4685	Page 2 of 8 Pages	Exhibit R-2 (PE 0605011F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
05 - Engineering and Manufacturing Development	0605011F RDT&E For Aging Aircraft	4685
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>(U) \$1,901 Develop an information/knowledge management tool to share aging aircraft technology and solutions across the aeronautical community. Identify existing databases which contain aging aircraft information. Connect existing databases to a single web portal. Develop web-based data mining views that turn the raw data into information to facilitate strategic planning and trend analysis for reducing total ownership costs.</p> <p>(U) \$6,932 Develop and complete efforts associated with Aging Wiring and Corrosion Treatment for Aging Aircraft (Congressional add).</p> <p>(U) \$10,398 Develop and complete engineering tasks associated with Aging Landing Gear Life Extension program (Congressional add).</p> <p>(U) \$1,981 Develop and complete efforts associated with Aging Propulsion Systems Life Extension (Congressional add).</p> <p>(U) \$1,981 Develop and complete efforts associated with Aging Aircraft Knowledge Portal (Congressional add).</p> <p>(U) \$41,211 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$6,000 Continue corrosion maintenance improvements. Develop corrosion abatement techniques, procedures, and temporary repairs. Expand the range of available repair technologies. Reduce the cost and man-hours associated with corrosion maintenance actions. Continue development and integration of software and analytical tools to support corrosion management workload prediction (e.g., environmental exposure models, corrosion damage analyses).</p> <p>(U) \$2,500 Continue work on improved non-destructive inspection (NDI) techniques, deployment of corrosion and crack detection capabilities and ongoing evaluation into new and more cost effective techniques. Shorten detection time for flaws and damage due to fatigue cracking, corrosion, composite material delaminations, and trapped moisture. Sponsor technology advancements to enable early damage detection, thus allowing for less costly repairs over the weapon system life cycle. Continue work on NDI techniques to detect cracks without removing fasteners to reduce inspection time and eliminate the potential for further damage by removing fasteners. Broaden the application of ultrasonic inspection techniques to detect fatigue cracks in internal wing structure from the outside of the aircraft to eliminate fuel tank entry requirements and potential damage caused by rivet removal.</p> <p>(U) \$4,000 Continue work on technologies to maintain the structural integrity of aging weapon systems to ensure continued flight safety. Develop viable procedures to correct the delamination of aging integral fuel tank coatings for improved corrosion protection and elimination of wing skin replacements. Continue efforts to evaluate material improvement, crack detection support tools.</p> <p>(U) \$1,075 Conduct analyses on aging aircraft problems to drive affordable modernization and sustainment solutions. Leverage existing knowledge of aging aircraft structures, avionics, and propulsion into business case analyses and related efforts to identify opportunities to reduce total ownership costs. Identify and analyze aging wiring problems in fighter, cargo, and tanker aircraft fleets. Conduct government and</p>		
Project 4685	Page 3 of 8 Pages	Exhibit R-2 (PE 0605011F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
05 - Engineering and Manufacturing Development	0605011F RDT&E For Aging Aircraft	4685			
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2003 (\$ in Thousands) Continued</u>					
	industry-wide forums to address cross-platform applications for aging aircraft solutions.				
(U) \$3,296	Develop cross-cutting aging aircraft system solutions (e.g., universal flight data acquisition/recorder systems, aircraft life support systems, aircraft support equipment). Develop techniques to incorporate high strength, corrosion resistant alloys into legacy airframes. Develop techniques for predicting aging wiring problems. Improve repair procedures to maintain the integrity of aging integral fuel tank coating materials. Leverage viable combat avionics work into common integrated aging avionics solutions (e.g., modular open systems architectures).				
(U) \$3,000	Develop partnerships with government and commercial industry to foster shared technologies and processes and an information/knowledge portal tool to share aging aircraft technology and solutions across the aeronautical community. Identify existing databases which contain aging aircraft information. Connect existing databases to a single web portal. Develop web-based data mining views that turn the raw data into information to facilitate strategic planning and trend analysis for reducing total ownership costs.				
(U) \$19,871	Total				
(U) <u>B. Budget Activity Justification</u>					
This program is in Budget Activity 5, Engineering and Manufacturing Development, because projects/capabilities will be developed in this program, then made available for procurement by already operational systems.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		25,468	20,113	25,164	
(U) Appropriated Value		25,704	41,613		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions			-402		
b. Small Business Innovative Research		-627			
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram		-182			
e. Rescissions		-236			
(U) Adjustments to Budget Years Since FY 2002 PBR				-5,293	
(U) Current Budget Submit/FY 2003 PBR		24,659	41,211	19,871	TBD
Project 4685	Page 4 of 8 Pages	Exhibit R-2 (PE 0605011F)			

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0605011F RDT&E For Aging Aircraft			PROJECT 4685		
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>									
(U) <u>Significant Program Changes:</u> Program funding was reduced due to higher priority Air Force requirements.									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) Related Activities:									
(U) PE 0708026F, Productivity/Reliability/Availability/Maintainability.									
(U) <u>E. Acquisition Strategy</u>									
Funding may be executed internally within the Aging Aircraft SPO via full and open competition or released to other organizations for projects for which they are the Office of Primary Responsibility (OPR). The OPRs will determine the most appropriate contract vehicle, Design Engineering Program (DEP) contract or full and open competition, to accomplish the project.									
(U) <u>F. Schedule Profile</u>									
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4
(U) Screening for Corrosion and Maintenance Improvement Projects									
				*				X	
(U) Request For Proposal Release									
				*				X	
(U) Contract Awards									
		*	*	*		*	X	X	
Note: 1Q and 2Q contract awards are from prior year funds									

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0605011F RDT&E For Aging Aircraft				4685		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	Corrosion Prevention and Control Techniques				166		6,230			6,000
(U)	Improved Non-Destructive Inspection Capabilities				5,684		1,100			2,500
(U)	Technologies to Enhance Structural Integrity				7,133		4,800			4,000
(U)	Aging Avionics/Electronics Approaches				176		0			0
(U)	Viable Combat Avionics				1,500		0			0
(U)	Aging Aircraft Analysis				0		1,930			1,075
(U)	Cross-Cutting Aging Aircraft Technology				0		3,958			3,296
(U)	Aging Aircraft Knowledge Management Tools				0		1,901			3,000
(U)	Aging Landing Gear Life Extension				10,000		10,398			0
(U)	Aging Wiring and Corrosion Treatment for Aging Aircraft				0		6,932			0
(U)	Aging Propulsion Systems Life Extension				0		1,981			0
(U)	Aging Aircraft Knowledge Portal				0		1,981			0
(U)	Total				24,659		41,211			19,871
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
ARINC/Boeing	T&M	Mar 01	N/A	N/A	0	487	0		0	487
Boeing	T&M	Apr 01	N/A	N/A	0	770	1,100	950	0	2,820
Lockheed Martin	T&M	Feb 01	N/A	N/A	0	467	0		0	467
Southwest Research	T&M	Mar 01	N/A	N/A	0	350	250	1,190	0	1,790
SAIC/Boeing	FFP	Mar 01	N/A	N/A	0	600	300	400	0	1,300
SAIC	T&M	Mar 01	N/A	N/A	0	980	300	300	0	1,580
Project 4685					Page 6 of 8 Pages			Exhibit R-3 (PE 0605011F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2002	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
05 - Engineering and Manufacturing Development					0605011F RDT&E For Aging Aircraft					4685	
(U) <u>Performing Organizations Continued:</u>											
<u>Product Development Organizations</u>											
UDRI/S&K Tech	TBD	Mar 01	N/A	N/A	0	1,380	0	9,920	0	11,300	
S&K Tech		Various	N/A	N/A	0		5,200		0	5,200	
UDRI	T&M	Mar 01	N/A	N/A	0	1,500	0		0	1,500	
UDRI/Anteon	T&M	Apr 01	N/A	N/A	0	450	0		0	450	
UDRI/NASA	T&M	Mar 01	N/A	N/A	0	1,330	1,190		0	2,520	
General Atomics	TBD	TBD	N/A	N/A	0	10,000	0		0	10,000	
Illinois Institute of Tech	T&M	Jan 01	N/A	N/A	0	1,500	0		0	1,500	
Aging Landing Gear Life Extension	TBD	TBD	N/A	N/A	0	0	10,398		0	10,398	
Aging Wiring and Corrosion Treatment for Aging Aircraft	TBD	TBD	N/A	N/A	0	0	6,932		0	6,932	
Aging Propulsion Systems Life Extension	TBD	TBD	N/A	N/A	0	0	1,981		0	1,981	
Aging Aircraft Knowledge Portal	TBD	TBD	N/A	N/A	0	0	1,981		0	1,981	
Numerous	Various	Various	N/A	N/A	0	4,845	11,579	7,111	Continuing	TBD	
<u>Support and Management Organizations</u>											
In House											
<u>Test and Evaluation Organizations</u>											
(U) <u>Government Furnished Property:</u>											
	<u>Contract</u>										
	<u>Method/Type</u>	<u>Award or</u>									
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Property</u>											
None											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 2002				
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT				
05 - Engineering and Manufacturing Development	0605011F RDT&E For Aging Aircraft	4685				
(U) <u>Government Furnished Property Continued:</u>						
<u>Support and Management Property</u>						
None						
<u>Test and Evaluation Property</u>						
None						
	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	0	24,659	41,211	19,871	TBD	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project	0	24,659	41,211	19,871	TBD	TBD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0604256F Threat Simulator Development					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	32,939	37,775	30,351	38,596	39,283	39,376	40,150	Continuing	TBD
2907 Electronic Combat Intel Support	1,864	1,874	1,919	2,035	2,051	2,090	2,130	Continuing	TBD
3321 Electronic Warfare Ground Test Resources	25,270	28,901	21,224	29,252	29,742	29,652	30,242	Continuing	TBD
7500 Foreign Material Acquisition/Exploitation	5,805	7,000	7,208	7,309	7,490	7,634	7,778	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 This PE provides funding for the elements necessary to support the Air Force Electronic Warfare (EW) Test Process. This test process provides a scientific methodology to ensure the effective disciplined and efficient testing of EW and avionics systems. Each capability or facility improvement is pursued in concert with the others so as to avoid duplicate capabilities while at the same time producing the proper mix of test resources needed to support the AF EW Test Process and testing of EW systems which can be used in any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. This PE provides funding for the management and technical oversight of implementation activities, development and improvement of digital EW models, measurement facilities operation and improvements, hardware in the loop test facilities operation and improvements, installed system test facility improvements, and development and improvement of open air threat simulators for flight testing. This PE also provides funding for planning, management budgetary, and technical support of the Air Force for corporate-level implementation of the Electronic Warfare (EW) Test Process, improvement and modernization (I&M) activities and application of the test and evaluation (T&E) infrastructure. Support includes requirements definition and analysis, project planning, programming and budgeting, technical oversight, and application of T&E facility I&M. Products include studies, analyses, and related documentation. This PE provides funding to support the acquisition and exploitation efforts of the Foreign Materiel Program as well as to support EW intelligence efforts.

(U) **B. Budget Activity Justification**
 This Program Element is in Budget Activity 6, Management Support, because it is a Research and Development (R&D) effort for Improvement and Modernization of T&E capabilities at Air Force Test Centers.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE			
BUDGET ACTIVITY		PE NUMBER AND TITLE			
06 - Management and Support		0604256F Threat Simulator Development			
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U)	Previous President's Budget	34,785	38,153	40,198	
(U)	Appropriated Value	34,785	38,153		
(U)	Adjustments to Appropriated Value				
	a. Congressional/General Reductions	-244			
	b. Small Business Innovative Research	-1,258			
	c. Omnibus or Other Above Threshold Reprogram	-268			
	d. Below Threshold Reprogram				
	e. Rescissions	-76			
(U)	Adjustments to Budget Years Since FY 2002 PBR			-9,772	
(U)	Current Budget Submit/FY 2003 PBR	32,939	38,153	30,426	TBD
(U)	<u>Significant Program Changes:</u>				
	FY03: AFEWES -\$1.1M; DIADS -\$1.7M; ITIP \$-3.1M; AWMS - \$2.2M; EW T&E M&S -\$1.7M; Delays EW Warfare Ground Test efforts.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development	PROJECT 2907
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2907 Electronic Combat Intel Support	1,864	1,874	1,919	2,035	2,051	2,090	2,130	Continuing	TBD

(U) **A. Mission Description**
 This project provides funding to support Foreign Materiel Operational Test and Evaluation (FMOT&E), which ensures the ability of operational commands to test and develop effective Electronic Attack/Electronic Protection (EA/EP) techniques and tactics. Funds are required for: deployment of blue systems to test facilities, travel for personnel to the test sites to evaluate and validate test results real-time, range and laboratory costs; costs for instrumentation of blue systems; and contracted engineering support for the conduct of tests and subsequent reporting. Funding for this program is required to prevent future aircraft losses due to improper and inaccurate aircrew tactics (e.g., lack of evasive action or proper tactics training to avoid missile attack).

(U) **FY 2001 (\$ in Thousands)**

(U) \$1,499 Funds fighter and bomber testing for foreign material operational exploitation. Extensive evaluations and reporting of blue system effectiveness to be accomplished.

(U) \$300 Funds transport aircraft testing for foreign material operational exploitation. Extensive evaluations and reporting of blue system effectiveness to be accomplished.

(U) \$65 Funds classified operational assessments for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished.

(U) \$1,864 Total

(U) **FY 2002 (\$ in Thousands)**

(U) \$1,496 Funds fighter and bomber testing for foreign material operational exploitation. Extensive evaluations and reporting of blue system effectiveness to be accomplished.

(U) \$322 Funds transport aircraft testing for foreign material operational exploitation. Extensive evaluations and reporting of blue system effectiveness to be accomplished.

(U) \$75 Funds classified operational assessments for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished.

(U) \$1,893 Total

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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$1,474 Funds fighter and bomber testing for foreign material operational exploitation. Extensive evaluations and reporting of blue system effectiveness to be accomplished.</p> <p>(U) \$400 Funds transport aircraft testing for foreign material operational exploitation. Extensive evaluations and reporting of blue system effectiveness to be accomplished.</p> <p>(U) \$50 Funds classified operational assessments for foreign material operational exploitation. Extensive evaluations and reporting to be accomplished.</p> <p>(U) \$1,924 Total</p> <p>(U) <u>B. Project Change Summary</u> None</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td colspan="9">None</td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> Not applicable.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th colspan="4" style="width:40%;"><u>FY 2001</u></th> <th colspan="4" style="width:40%;"><u>FY 2002</u></th> <th colspan="4" style="width:40%;"><u>FY 2003</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U)</td> <td colspan="12">Not applicable. Discrete tasks vary depending on availability of Foreign Material Acquisition (FMA) hardware and exploitation schedules. The annual budget is based on supporting up to eight opportunities for operational units to conduct quick look assessments of available FMA.</td> </tr> </tbody> </table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN											None										<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U)	Not applicable. Discrete tasks vary depending on availability of Foreign Material Acquisition (FMA) hardware and exploitation schedules. The annual budget is based on supporting up to eight opportunities for operational units to conduct quick look assessments of available FMA.											
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Project 2907			Page 4 of 11 Pages			Exhibit R-2A (PE 0604256F)																																																																																											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604256F Threat Simulator Development	PROJECT 3321
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
3321 Electronic Warfare Ground Test Resources	25,270	28,901	21,224	29,252	29,742	29,652	30,242	Continuing	TBD

(U) A. Mission Description

The AF requires a comprehensive set of test facilities to implement the Air Force Electronic Warfare (EW) Test Process in order to test EW systems. To manage program risk effectively throughout the weapons system acquisition process, and conduct test and evaluation (T&E) effectively and efficiently, a broad multi-spectrum, integrated set of T&E capabilities for modeling and simulation (M&S) through open-air ranges is required. The EW Test Process Support task provides for investment management, coordinated technical oversight, and application of EW T&E facilities, including studies, analyses, and related documentation. The EW T&E M&S program will lead correlation, verification and validation activities of integrated simulations of validated models across the EW test facilities using the Silver Bullet measurement capability. The National Radar Cross Section (RCS) Test Facility - NRTF (formerly Radar Target Scatter (RATSCAT)) upgrades provide improvements to the NRTF at Holloman AFB, NM, to support radar cross section (RCS) measurement requirements of DoD and commercial customers, with either conventional or stealth systems. The Air Force Electronic Warfare Evaluation Simulator (AFEWES) and the Digital Integrated Air Defense System (DIADS), provide the ability to realistically evaluate hardware components and simulated weapon systems against manned hardware threat representations throughout the acquisition process. AFEWES provides simulations of advanced Infrared (IR) & Radio Frequency (RF) Surface-to-Air Missiles (SAMs) and Air-to-Air Missiles (AAMs), IR/ Ultra-violet (UV) and RF missile warning, end-to-end testing of the missile warning/IR and Laser countermeasure function; integration of actual threat hardware and ground clutter into advanced threat RF and IR missile simulations. DIADS provides algorithm based enemy command and control (C2) capabilities plus early warning radar detection and limited ground control intercept features and also allows man-in-the-loop interaction for the enemy C2 positions. The Electronic Combat Integrated Test (ECIT) project upgrades the AF Hardware-In-The-Loop (HITL), System Integration Labs (SILs), and Installed System Test Facility (ISTF) at Edwards AFB, CA. The HITL and SILs at Edwards allow for the stimulation of real aircraft avionics with the benefit of a laboratory environment. The AF ISTF consists of a large, instrumented, anechoic chamber which provides for evaluation of EW systems when installed on its host aircraft, both prior to and throughout the flight test program. The goal of the ECIT upgrade is to integrate coherent EW threat simulators into the ground test facilities at Edwards and modernize instrumentation/test operation capabilities. In FY 99 ECIT began a 3-year effort to fund the purchase of EW equipment in support of the F-22's Integrated Hardware-In-The-Loop Avionics Test (IHAT) capability. The IHAT capability is being transferred to Edwards AFB, CA from Marietta, GA. In FY 02, the Air Warfare Mission Simulator (AWMS) program will begin development of an electronic warfare capability with high fidelity reconfigurable cockpits. This program will also provide the capability to link to high fidelity cockpits into the information battlespace via High Level Architecture (HLA). In FY 03, the Installed Test Integration Program (ITIP) begins development of a multi-spectral synthetic battlespace with virtual and constructive modeling and simulation test and evaluation capabilities within Edwards AFB, CA.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0604256F Threat Simulator Development	3321
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$846	EC Test Process Support. Conducted requirements analyses and other studies in support of Air Force investments in EW test infrastructure. Provided systems engineering/technical assistance (SETA) support for Air Force implementation of the EW Test Process, including improvement and modernization (I&M) of the EW test infrastructure.	
(U) \$3,626	EW test and Evaluation Modeling and Simulation (EW T&E M&S). Continued development of verification and validation process for integrated simulations configured to support development and operational testing. Continued correlation process development and correlation implementation between EW test facilities being supported by Silver Bullet. Began study of requirements to migrate realistic sensor information from the EC environment into cockpit simulators in support of the Air Warfare Mission Simulator (AWMS) program.	
(U) \$1,592	NRTF Upgrades. Enhanced efficiency of operations and accuracy of measurements. Expanded partnerships with major industry EW suppliers. Completed update of range characterization effort. Continued main site UHF/VHF upgrade.	
(U) \$5,123	AFEWES. Continued operation in support of DoD and non-DoD test customers to include initiation of upgrades to the IR laboratory and continue validation & verification (V&V) effort on all threat simulators. Began development of SAM-D semi-active simulator. Completed development of Advanced Simulator modification (SAM-C), and continued development of capability to produce semi-active missile miss distance results using Open Air Range flight test data. Completed integration of second IR air-to-air missile and development of Missile Warning System Lab. Completed first iteration of IR Lab and SAM-B V&V.	
(U) \$3,183	DIADS. Continued providing mission level simulation for evaluating the survivability of aircraft penetrating an enemy air defense system by updating the IADS scenario with current intelligence data. Continued verification and validation efforts and began development of external linking with Blue IADS capabilities, in support of AF, Army, Navy and non-DoD test customers.	
(U) \$10,900	ECIT. Continued Infrastructure and Generic Test Capability (I>C) that provides RF stimulation capability and infrastructure support for the CTEIP-funded Generic Radar Target Generator (GRTG), Infrared Sensor Stimulator (IRSS), and Communications-Navigation-Identification (CNI) simulator, to support F-22 and other advanced weapon system requirements and to support IOC in FY 02. Completed purchase of EW equipment in support of the F-22's Integrated Hardware-in-the-loop Avionics Test (IHAT) capability.	
(U) \$25,270	Total	
Project 3321	Page 6 of 11 Pages	Exhibit R-2A (PE 0604256F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0604256F Threat Simulator Development	3321
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$916	EC Test Process Support. Conduct requirements analyses and other studies in support of Air Force investments in EW test infrastructure. Provide systems engineering/technical assistance (SETA) support for Air Force implementation of the EW Test Process, including improvement and modernization (I&M) of the EW test infrastructure.	
(U) \$3,303	EW Test and Evaluation Modeling and Simulation (EW T&E M&S). Continue development and deployment of the Verification and Validation (V&V) process for scalable integration with simulations to support development and operational testing. Continue to integrate correlation process development and correlation implementation between EW T&E and training facilities being supported by Silver Bullet.	
(U) \$2,065	NRTF Upgrades. Continue to improve communication and controls for precise RCS measurements at RAMS. Upgrade security measures. Continue to mitigate the impact of consolidation on our current resources. Begin initial studies, analysis, and related documentation to effectively manage risk associated with Low Frequency Bistatic measurements.	
(U) \$5,260	AFEWES. Continue operation in support of DoD and non-DoD test customers to include upgrades to the IR laboratory, enhancements of the Missile Warning System Lab, and validation & verification effort on all threat simulators. Complete development of SAM-G and SAM-E semi-active simulators, and continue development of SAM-D. Continue development of capability to produce semi-active missile miss distance results using Open Air Range flight test data. Begin development of SAM-F and start transition of IR flyout models to PC-based software. Complete first iteration of SAM-A and SAM-C V&V. Develop IR background scene environment. Begin integration of advanced IR SAM.	
(U) \$5,070	DIADS. Continue providing mission level simulation for evaluating the survivability of aircraft penetrating an enemy air defense system by updating the IADS scenario with current intel data. Continue verification and validation efforts to support DIADS customers. Integrate DIADS with other Avionics Test and Integration Complex (ATIC) components. If additional funding becomes available, continue integration of Real Time SAM models. Complete IOC requirements.	
(U) \$10,612	ECIT. Complete FOC of Infrastructure and Generic Test Capability (I>C) that provides RF stimulation capability and infrastructure support for the CTEIP-funded Generic Radar Target Generator (GRTG), Infrared Sensor Stimulator (IRSS), and Communications-Navigation-Identification (CNI) simulator, to support F-22 and other advanced weapon system requirements. Complete requirement definition and acquisition planning to fully integrate the suite of simulators/stimulators into a coherent multi-spectral test environment.	
(U) \$1,964	AWMS. Complete requirements study and develop acquisition strategy to provide realistic EC sensor information into cockpit simulators. Begin development of two high fidelity cockpit simulators.	
(U) \$29,190	Total	
Project 3321	Page 7 of 11 Pages	Exhibit R-2A (PE 0604256F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support	0604256F Threat Simulator Development	February 2002 3321
(U)	<u>A. Mission Description Continued</u>	
(U)	<u>FY 2003 (\$ in Thousands)</u>	
(U)	\$926	EC Test Process Support. Continue to conduct requirements analyses and other studies in support of Air Force investments in EW test infrastructure. Continue to provide systems engineering/technical assistance (SETA) support for Air Force implementation of the EW Test Process, including improvement and modernization (I&M) of the EW test infrastructure.
(U)	\$1,774	EW Test and Evaluation Modeling and Simulation (EW T&E M&S). Continue development and deployment of the Verification and Validation (V&V) process for scalable integration with simulations to support DT&E, OT&E and training. Begin development of simulation based EW T&E tools and methodologies in support of EW test engineer's implementation of the EW test process. Continue integration and correlation process between EW T&E and training facilities being supported by Silver Bullet.
(U)	\$2,146	NRTF Upgrades. Continue to enhance efficiency of operations and accuracy of measurements. Complete infrastructure requirements supporting industry partners. Begin to assess advanced target support systems. Improve secure test program capability. Transition the new Low Frequency Bistatic Upgrade Project to CTEIP.
(U)	\$4,106	AFEWES. Continue operation in support of DoD and non-DoD test customers to include upgrades to the IR laboratory, enhancements of the Missile Warning System Lab, and validation & verification effort on all threat simulators. Complete integration and initial V&V of SAM-G and SAM-E. Continue development of SAM-D capability to produce semi-active missile miss distance results and complete first iteration of SAM-D validation using Open Air Range flight test data. Continue development of SAM-F and transition IR flyout models to PC-based software. Begin integration of Joint Research and Assessment Center (JRAAC) semi-active radar simulation with AFEWES semi-active suite.
(U)	\$2,460	DIADS. Continue providing mission level simulation for evaluating the survivability of aircraft penetrating an enemy air defense system by updating the IADS scenario with current intelligence data. Continue integrating DIADS with other Avionics Test and Integration Complex (ATIC) components. Continue efforts to perform parametric validation comparisons and OAR side-by-side correlation. Upgrade and maintain HLA and DIS capability to support current and future users: F-22, JSF, VSWE and other exercises.
(U)	\$9,528	ITIP. Begins Installed Test Integration Program (ITIP) that will integrate multiple RF and IR stimulators to replicate an electronic warfare battlespace to support testing of advanced weapons systems such as the F-22, JSF, and Compass Call. Includes upgrade of existing stimulators (Generic Radar Target Generator, Infrared Sensor Stimulator, RF Threat Simulators, and Communications-Navigation-Identification simulator) and integration of those upgrades into the electronic battlespace. Includes integration with the Digital Integrated Air Defense System (DIADS).
(U)	\$336	AWMS. Continue integrating EW capabilities into FSM reconfigurable cockpits 1 and 2. Begin requirements study for the completion of phase 2 of site preparation and cockpits 3 and 4.
(U)	\$21,276	Total
Project 3321		Exhibit R-2A (PE 0604256F)

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<p>(U) <u>B. Project Change Summary</u> FY03 Reductions: AFEWES -\$1.1M; DIADS -\$1.7M; ITIP -\$3.1M; AWMS - \$2.2M; EWT&E M&S -\$1.7M. Delays EW Warfare Ground Test efforts.</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Related RDT&E:</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) PE 0604759F, Major T&E Investment</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) PE 0604940D, Central T&E Investment Program</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>(U) <u>D. Acquisition Strategy</u> Contracts funded from this program are predominately awarded on the basis of full and open competition.</p> <p>(U) <u>E. Schedule Profile</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <td></td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> <td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td> </tr> </thead> <tbody> <tr> <td>(U) This BPAC contains multiple schedule profiles which are available upon request.</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN										(U) Related RDT&E:										(U) PE 0604759F, Major T&E Investment										(U) PE 0604940D, Central T&E Investment Program											<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	(U) This BPAC contains multiple schedule profiles which are available upon request.												
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BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0604256F Threat Simulator Development				PROJECT 7500	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
7500 Foreign Material Acquisition/Exploitation	5,805	7,000	7,208	7,309	7,490	7,634	7,778	Continuing	TBD
<p>(U) <u>A. Mission Description</u> This project is established for the specific purpose of supporting the USAF requirements for the Foreign Materiel Program through the acquisition and exploitation of foreign materiel. Items considered for these Foreign Materiel Acquisition and Exploitation (FMA&E) funds are included in the prioritized Air Force Foreign Materiel Acquisition (FMA) list established each year. Each MAJCOM prepares and approves a Foreign Materiel - Mission Need Statement for each requirement. Annually, the MAJCOM commanders establish a list of their top 20 requirements. The MAJCOM's requirements lists are then integrated into an Air Force requirement list. Each MAJCOM then approves the AF list and requirements, and final validation comes from the Air Force Vice Chief of Staff. Exploitations are based on and driven by acquisitions. The list is classified secret. The USAF is tasked by OSD to be the DoD Executive Agent for all threat aircraft, air-to-air missiles, and early warning radars. As the Executive Agent, the AF is tasked to acquire, exploit and provide data to all DoD components.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$2,805 Funds the acquisition of Foreign Materials IAW the prioritized Air Force Foreign Material Acquisition list; subject to assets availability. (U) \$2,447 Funds the exploitation of acquired Foreign Materials IAW prioritized lists and specific exploitation plans. (U) \$553 Funds the operations and maintenance of the specialized Foreign Material assets. (U) \$5,805 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$3,040 Funds the acquisition of Foreign Materials IAW the prioritized Air Force Foreign Material Acquisition list; subject to assets availability. (U) \$3,394 Funds the exploitation of acquired Foreign Materials IAW prioritized lists and specific exploitation plans. (U) \$636 Funds the operations and maintenance of the specialized Foreign Material assets. (U) \$7,070 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$3,100 Funds the acquisition of Foreign Materials IAW the prioritized Air Force Foreign Material Acquisition list; subject to assets availability. (U) \$3,600 Funds the exploitation of acquired Foreign Materials IAW prioritized lists and specific exploitation plans. (U) \$526 Funds the operations and maintenance of the specialized Foreign Material assets. (U) \$7,226 Total</p>									
Project 7500			Page 10 of 11 Pages				Exhibit R-2A (PE 0604256F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002																																																																																																							
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0604256F Threat Simulator Development				PROJECT 7500																																																																																																						
<p>(U) <u>B. Project Change Summary</u> None</p> <p>(U) <u>C. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="width:10%;"><u>FY 2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY 2006</u></th> <th style="width:10%;"><u>FY 2007</u></th> <th style="width:10%;"><u>Cost to</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: center;"><u>Actual</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Estimate</u></td> <td style="text-align: center;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) AF RDT&E</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>(U) Other APPN</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="10">None.</td> </tr> <tr> <td colspan="10">(U) <u>D. Acquisition Strategy</u> Not applicable.</td> </tr> <tr> <td colspan="10">(U) <u>E. Schedule Profile</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;"><u>FY 2001</u></td> <td></td> <td></td> <td style="text-align: center;"><u>FY 2002</u></td> <td></td> <td style="text-align: center;"><u>FY 2003</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td colspan="10">(U) Not applicable. Details are classified and are reported through other channels.</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		(U) AF RDT&E										(U) Other APPN										None.										(U) <u>D. Acquisition Strategy</u> Not applicable.										(U) <u>E. Schedule Profile</u>														<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>				1	2	3	4	1	2	3	4	(U) Not applicable. Details are classified and are reported through other channels.									
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Project 7500			Page 11 of 11 Pages				Exhibit R-2A (PE 0604256F)																																																																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604759F Major T&E Investment	PROJECT 4597
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4597 Air Force Test Investments	64,635	62,272	46,338	54,231	63,245	63,148	65,112	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY 2003, Project 4597, Air Force Test Investments, includes new start efforts.

(U) A. Mission Description

This program element provides planning, improvements, and modernization for test capabilities at three Air Force test organizations: 46 Test Wing of the Air Armament Center (AAC) (to include 46 Test Group at Holloman), Arnold Engineering Development Center (AEDC), and Air Force Flight Test Center (AFFTC). The purpose is to help test organizations keep pace with emerging weapon system technologies. For example, advances in missile seeker technology and capabilities drive the requirement for improvement in missile seeker test capabilities such as the Scene Characterization and Reconstruction for Advanced Munitions (SCRAM) project; advances in the Global Positioning System (GPS), providing greater time-space-position accuracy, will be integrated into the ranges at Eglin and Edwards Air Force Bases; and advances in computer capabilities, which will enhance efficiencies in data collection, analysis, and distribution, will be exploited in the Data Processing Multi-Stage Improvement Program (DPMSIP). Test investment activities are also funded for activities supporting the Test and Evaluation (T&E) Board of Directors and for the Technology Insertion & Risk Reduction (TIRR), formerly the Test Technology Development (TTD), Program. The TIRR program will provide funds to initiate studies of new technologies and test methodologies to determine their feasibility for future T&E investment. The intent is to reduce the cost and risk associated with new technologies and methodologies using short term (1-3 years) limited funding studies prior to investing in larger projects. The first TIRR sub-project is Flight Safety System (FSS), which will develop and demonstrate a prototype miniature, over the horizon flight safety system to command, control and monitor next generation unmanned vehicles.

The fluctuations in the funding at these locations are due to changing priorities in the improvement and modernization requirements as defined through the AF Test Investment Planning & Programming Process. Also, all projects have been reviewed through the tri-Service Reliance effort (to communicate AF efforts to the other Services and avoid unwarranted duplication of effort) and are documented in Reliance Area Capability Summaries (RACS). Further, each project has its own planning, development, equipment acquisition/facility construction, equipment installation, and checkout phases which often requires significant differences in funding from one year to the next. As such, the changes in funding from year to year do not necessarily indicate program growth but rather a planned phasing of improvement and modernization efforts. The test capabilities at these locations enable testing through all phases of weapon system acquisition from system concept exploration through component and full scale integrated weapon system testing to operational testing. These test organizations have over \$10 billion worth of unique

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604759F Major T&E Investment	PROJECT 4597
<p>(U) <u>A. Mission Description Continued</u> test facilities/capabilities. They are a national asset operated and maintained by the Air Force for DoD test and evaluation missions, but they are available to others having a requirement for their unique capabilities.</p> <p>46 TW, located at Eglin AFB, FL, conducts and supports developmental test and evaluation and operational test and evaluation of non-nuclear air armaments, Command, Control, Communications, Computers and Intelligence (C4I) systems, and target acquisition and weapon delivery systems; navigation systems; provides a climatic simulation capability; and determines target/test item spectral signatures. Advanced Airborne Instrumentation Integration (AAIL) provides standardized airborne test instrumentation to enhance interoperability and commonality. C4I Advanced Simulation and Test Environment (CASTE) will provide connectivity to existing capabilities and add needed networks and hardware to develop a C4I test bed. Operational Facilities (OPFACs) for Link-16 Weapon-Platform Integration (formerly Link-16 Support) will provide a host platform simulator for C4I testing. Scene Characterization and Reconstruction for Advanced Munitions (SCRAM) will measure, characterize, and reconstruct high fidelity multispectral target scenes that will be integrated into the Guided Weapon Evaluation Facility (GWEF). Weapon Integration/Compatibility Support (WICS) will provide upgrades to support post System Development and Demonstration (SDD) F-22 weapons integration and certification. Climatic Lab Upgrades will provide upgrades to instrumentation and climatic simulation equipment. Test Control & Visualization will upgrade telemetry systems and network infrastructure to handle higher data rates. Advanced GPS/Hybrid Simulation (AGHS) capability will support laboratory testing with the new GPS signal structure and provide digital modeling of modernized GPS equipment. Armament and Munitions Digital Modeling and Simulation will develop, verify, and validate a standard set of reusable models and simulations to support armament and munitions T&E. These projects ensure test center technology is compatible with weapon systems to be tested such as AMRAAM, JDAM, ASRAAM, AGM-130, JTIDS, JSTARS, Combat Talon, etc.</p> <p>AEDC, located at Arnold AFB, TN, provides ground environmental test support for DoD aeronautical, missile, and space programs. The center has 53 test facilities providing: aerodynamic testing of scale model aircraft, missile, and space systems; testing of large and full-scale satellites, sensors, and space vehicles in a simulated space environment; altitude environmental testing for aircraft, missile, and spacecraft propulsion systems; and testing of large-scale models such as space boosters together with their propulsion systems. The Propulsion Wind Tunnel (PWT) Upgrades project sustains long-term operation of tunnels 16T and 16S to meet transonic/supersonic test needs. The Improve Turbine Engine Structural Integrity project will provide new state-of-the-art structural test monitoring and data analysis systems to support turbine engine structural tests to detect and analyze high cycle fatigue. Real-Time Display and Analysis System will provide upgraded displays and analysis systems to several key test facilities to help achieve a portion of AEDC's vision of integrating test/plant/utilities operations. The Enhanced Turbine Engine Installation and Productivity (formerly JSF STOVL Engine Test Cells Upgrade) will modernize the sea level test cell 3 (SL3) transferred from Trenton NAS under BRAC and installed at AEDC. This cell will be utilized for environmental and structural endurance testing of the Joint Strike Fighter (JSF) and other aircraft engines, F119/F120 derivatives. The cell will be upgraded for the size of the JSF engines and for the testing of the STOVL features of the engines.</p>		
Project 4597	Page 2 of 11 Pages	Exhibit R-2 (PE 0604759F)

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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0604759F Major T&E Investment	PROJECT 4597
<p>(U) <u>A. Mission Description Continued</u> AFFTC, located at Edwards AFB, CA, conducts and supports developmental test and evaluation and operational test and evaluation of aircraft and aircraft systems, aerospace research vehicles, unmanned aerial vehicles, cruise missiles, parachutes delivery/recovery systems, and cargo handling systems. The Flight Simulation Modernization (FSM) project will upgrade the Test and Evaluation Modeling and Simulation (TEMS) facility to meet future man-in-the loop simulator requirements. The Modeling and Simulation T&E Resources (MASTER) program is a joint development effort between the Air Force Flight Test Center (AFFTC) and Arnold Engineering Development Center (AEDC). The goal is for the two Centers to integrate modeling and simulation (M&S) more closely to ground and open-air range flight test to reduce the cost and time of developmental testing. MASTER has been divided into five separate development efforts to meet this goal: the Consolidated Model and Data Repository; the development of a Configuration Management, scheduling and asset tracking system; the Propulsion Data Validation and Analysis System; the Store Separation Simulation Capability and the Fluid Structural Interaction Capability project will provide the TEMS facility with subsystem models to build future simulations and the tools to validate real-time modeling with ground tests and open-air range flight test. The Linked Interactive T&E Networking (LITENING) project will provide the network infrastructure to support inter-range simulations and support the efficient transmission of flight test data to various facilities at Edwards for processing and analysis. The Advanced Range Telemetry (ARTM) Integration project will procure and integrate improved range telemetry systems to provide greater efficiencies in telemetry frequency utilization. The Next Generation Test Instrumentation is required to modernize existing test instrumentation laboratories, aircraft instrumentation suites, and ground support systems. It also provides a quick reaction capability for future weapon systems and subsystems testing. The Advanced GPS Range Sensors (AGRS) project will provide increased Time, Space, Position Information (TSPI) accuracy and data link enhancements required by AFFTC customers. The GPS and data link instrumentation will also be miniaturized and modularized in order to meet customer size constraints for internal mount configurations. These objectives will be accomplished by a) integrating state of the art GPS and data transfer COTS equipment, b) upgrading software to provide near-real-time data filtering and kinematic GPS processing and c) utilizing the Enhanced Range Application Program (EnRAP) standardized equipment contracts. The Data Processing Multi-Stage Improvement Program (DPMSIP) will focus on providing IT tools to increase the number of test points cleared in the control room and to facilitate next day flight clearance decisions. DPMSIP will provide a common system for real-time data display, near-real-time analysis, and post-test analysis. DPMSIP will also be compliant with current modeling and simulation data interface standards.</p>		
<p>(U) <u>FY 2001 (\$ in Thousands)</u></p>		
(U) \$0	46 Test Wing, Air Armament Center	
(U) \$2,640	CAIS Integration. Completed integration and required support equipment acquisition.	
(U) \$1,660	C4I Upgrade. Completed the acquisition of workstations, connectivity, HW/SW upgrades, and JTIDS OPFAC upgrades. Acquired test analysis equipment and M&S tools.	
(U) \$2,350	GWEF. Completed the multispectral man-in-the-loop and imaging IR developments. Continued aircraft/munition M&S efforts.	
(U) \$1,699	GPS Range Integration. Completed acquisition of ARDS pods, S/W improvements, and ground vehicle instrumentation.	
(U) \$1,680	PRIMES. Completed the aircraft/munitions interface simulations and the off-board sensor simulator. Acquired a synthetic aperture radar target	
Project 4597	Page 3 of 11 Pages	Exhibit R-2 (PE 0604759F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support	0604759F Major T&E Investment	February 2002 4597
(U)	<u>A. Mission Description Continued</u>	
(U)	<u>FY 2001 (\$ in Thousands) Continued</u>	
	simulator.	
(U) \$1,500	ASTE Range Systems. Completed acquisition of instrumentation/equipment for infrastructure upgrades in such areas as TSPI, microwave, TM, fiber optics/communications, arena test, gun ranges, high speed video, and fuze test.	
(U) \$1,392	Mission Control/Data Analysis. Completed procurement of data acquisition equipment, near real-time data processing equipment, and a 3-D terrain generation/visualization capability.	
(U) \$800	Seeker T&E. Completed upgrades to the MMW measurement system and acquired a high speed digital data recorder and a long wavelength FPA imaging radiometer.	
(U) \$6,486	Eglin Range Upgrades. Supported Armament Systems Test Environment (ASTE) Infrastructure Upgrades: improved several subsystems by integrating latest technology to support the T&E of modern weapon systems. Began integration of the 3-DATA system.	
(U) \$0	Arnold Engineering Development Center	
(U) \$2,300	CMP. Procured and installed increment six worksystems. Completed Product Data Manager integration with application software packages. Upgraded older worksystems to the state-of-the-art PC hardware configuration. FOC of CMP systems.	
(U) \$20,133	PWT Upgrades. Completed installation of 16S wind tunnel data acquisition and processing system. Completed installation of plant control systems in 16T/16S wind tunnels. Initiated procurements for electric motor upgrades. Began design of flow quality improvements.	
(U) \$850	Improve Turbine Engine Structural Integrity. Completed installation of the dynamic data acquisition and processing system and the Non-Intrusive Stress Measurement System (NSMS). Began planning/design of the Structural Dynamic Response Analysis Capability.	
(U) \$3,492	Hypersonic Capability Development. Continued requirements definition contracts. Conducted experiments to prove enabling technologies for the wind tunnel concept.	
(U) \$1,098	Laser Induced Surface Induction (LISI). Developed LISI prototype processing facility for selected DoD target applications.	
(U) \$0	Air Force Flight Test Center	
(U) \$2,300	CAIS I&S. Completed the development and integration of an internet-based instrumentation management system. Completed development of CAIS Bus to NextGen Bus (Fibre Channel) Bridge. Continued to provide the capability to support new airborne instrumentation capabilities including: on-board processing innovations, on-board smart sensors, and high data rate decommutation and recording.	
(U) \$2,340	ADAPS. Completed development of near real-time and post test analysis capabilities to include the Combined Test Force (CTF) level. Completed the installation of common data systems throughout the Flight Test Center. Upgraded and installed control room workstations.	
(U) \$3,647	Flight Simulation Modernization. Completed upgrade to the TEMS Facility with the first of two aircraft specific configuration cockpits to be integrated with the generic reconfigurable cockpit.	
Project 4597	Page 4 of 11 Pages	Exhibit R-2 (PE 0604759F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0604759F Major T&E Investment	4597
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
(U) \$1,990	LITENING. Continued the extension of the ATM backbone network to critical Range Support buildings and CTFs. Developed the Network Operations Center to monitor and manage network traffic loads. Expanded the secure network links to allow classified test data to be transferred between integrated secret, compartmentalized facilities.	
(U) \$1,400	MASTER. Developed and established propulsion, weapons, and airframe interaction models. Began design and development of the model/data repository.	
(U) \$710	Advanced Range Telemetry (ARTM) Integration. Began integration of RCC FQPSK modulation/demodulation technology into telemetry transmitters/receivers. Began integration of PCM data compression and forward error correction technology into the range infrastructure (includes airborne and ground segments). Began improvement and modernization of telemetry ground stations. Began to migrate telemetry users, who are presently in S-Band, to L-Band.	
(U) \$499	X-15 Rocket Test Stand. Began design, restoration and modification of the existing X-15 rocket engine test stand and control bunker. Studied the relocation of the AFFTC LOX maintenance facility away from the test stand, located at Edwards AFB, CA.	
(U) \$2,594	Multi-Axis Thrust Stand. Began redesign, retrofit and relocation of the existing Overhead Support System (OSS) from NASA Ames Research Center to the existing outdoor engine test cell facility at Edwards AFB, CA. Initiated modification of existing control rooms, support systems, and data acquisition systems.	
(U) \$0	Space & Missile Systems Center, Detachment 12	
(U) \$870	Combined Space Test Task Force. Continued development and evaluation of expert systems to support operations and testing of future technology R&D satellites. Implemented lessons learned and transition technical advancements to operational users.	
(U) \$0	Other Projects	
(U) \$205	Joint Project Office for T&E support.	
(U) \$64,635	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	46 Test Wing Air Armament Center	
(U) \$938	Advanced GPS Hybrid Simulation (AGHS). Begin procurement of hardware and software required to simulate the new GPS signal structure.	
(U) \$2,157	Weapon Systems Integration Test Capability (WICS). Begin F-22 flutter, loads, stability and control M&S. Begin Eglin-Edwards high-speed data link for near real-time data analysis.	
(U) \$1,173	Advanced Airborne Instrumentation Integration (AAIL). Begin acquisition and integration of state-of-the-art airborne instrumentation such as	
Project 4597	Page 5 of 11 Pages	Exhibit R-2 (PE 0604759F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0604759F Major T&E Investment	4597
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$4,221	Advanced CAIS and CTEIP developed ARTM. Acquire ground support equipment to support pre/post flight operations SCRAM. Begin acquisition of instrumentation to support scene characterization and reconstruction for T&E of EO/IR, RF/MMW, and GPS seeker/sensors.	
(U) \$888	Test Control & Visualization. Begin upgrades to TM systems and network infrastructure to handle higher data rates. Acquire real time computing servers, data recorders, and video displays.	
(U) \$1,485	C4I Advanced Simulation and Test Environment (CASTE). Acquisition of equipment, instrumentation, hardware, software, and connectivity.	
(U) \$2,175	OPFACs for Link 16 Weapon-Platform Integration (formerly Link-16 Support). Begin acquisition of platform simulators and related datalink equipment.	
(U) \$791	Climatic Lab Upgrade. Begin upgrades to instrumentation systems, climatic simulation equipment and facility equipment.	
(U) \$991	Airborne Separation Video. Begin procurement of video systems to support Seek Eagle munitions test requirements.	
(U) \$2,477	Holloman High Speed Test Track Upgrade. Validate magnetic levitation concept. Construct/install partial guideway. Design/fabricate cryogenics. Design/fabricate magnet system instrumentation and control. Conduct limited test of sled.	
(U) \$0	Air Force Flight Test Center	
(U) \$2,120	Flight Simulation Modernization. Begin fabrication of second aircraft configuration cockpits to be integrated with the generic high fidelity reconfigurable cockpit and associated visual system and support equipment.	
(U) \$2,598	LITENING. Complete expansion of ATM Network to range support buildings and new CTF facilities. Expand Multi-media capabilities for flight testing and modeling and simulation. Monitor and manage network traffic loads. Expand secure network links to allow classified test data to be transferred between integrated secret, compartmentalized facilities.	
(U) \$2,315	MASTER. Incorporate engine propulsion rule-based techniques, engine manufacturer techniques, statistical logic, trending algorithms, and sensor characterization to detect operational non-conformance events and an information archival system to archive test information for ground and flight test systems. Develop Initial Operating Capability of the automated tracking and scheduling system for Avionics Test & Integration Complex (ATIC) assets. Will provide the ATIC with automated services to support additional ground testing at the ATIC. Provide for the storage and version control of tools obtained from such sources.	
(U) \$2,903	Advanced Range Telemetry (ARTM) Integration. Continue to integrate Tier I modulation (FQPSK) developed by ARTM into telemetry infrastructure. Continue the migration of telemetry users from S-band to L-band. Begin upgrading telemetry support infrastructure (includes airborne and ground segments) to fully utilize real-time data compression, error correction, standardized solid-state data recorders, and frequency and bandwidth reuse, deconfliction, and reallocation.	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0604759F Major T&E Investment	4597
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$495	Advanced GPS Range Sensors (AGRS). Begin to plan GPS range equipment upgrade to reflect enhanced capabilities made to GPS constellations. Begin development of Inertial Measure Unit (IMU) to be integrated into next generation range GPS instrumentation equipment. Provide AFFTC inputs to the Range Instrumentation Systems Program Office (RISPO) for GPS and datalink equipment to be developed under the Enhanced Range Applications Program (EnRAP).	
(U) \$1,103	Data Processing Multi-Stage Improvement Program (DPMSIP). Upgrade range telemetry data processing systems to support multiple data streams at higher data rates. Start work on a new control room data distribution network. Deploy a prototype mission control room with a new data display system. Start work on new post-test analysis workflow enhancements.	
(U) \$972	Next Generation Test Instrumentation. Integrate next generation test instrumentation systems into multiple aircraft. Provide enhancements and improvements to the Internet based Instrumentation Management Information Systems. Expand the capabilities of Instrumentation Support Systems to program and preflight test vehicles. Develop airborne instrumentation components to address new sensor interfaces. Continue to purchase instrumentation components to upgrade obsolete and unreliable instrumentation components. Integrate on-board data processing devices into data acquisition systems. Conduct test of NexGenBus devices.	
(U) \$0	Arnold Engineering Development Center	
(U) \$16,332	PWT Upgrades. Continue procurement of and begin installation and checkout of electric motor upgrades. Continue installation of plant control systems in 16T/16S wind tunnels. Begin acquisition planning of flow quality improvements.	
(U) \$1,870	Improve Turbine Engine Structural Integrity. Continue dynamic data system upgrades in the turbine test cells and further development of Non-Intrusive Stress Measurement System (NSMS) algorithms. Upgrade recording systems from analog to digital.	
(U) \$2,263	Real-Time Display and Analysis System. Begin the planning and design phases for upgrading the data acquisition and control systems of the turbine test unit supervisory system and the turbine/wind tunnel test operations centers and initiate the procurement for the long lead time equipment.	
(U) \$1,313	Enhanced Turbine Engine Installation and Productivity (formerly JSF STOVL Engine Test Cells Upgrade). Begin design and procurement of hardware for sea level (SL3) test cell upgrades for JSF, F-22, F-15, F-16, F-18 and other programs.	
(U) \$991	Laser Induced Surface Induction (LISI). Develop LISI prototype processing facility for selected DoD target applications.	
(U) \$8,421	Hypersonic Capability Development (also called MARIAH 2). Continue requirements definition contracts. Conduct experiments to prove enabling technologies for the wind tunnel concept.	
(U) \$0	Space & Missile Systems Center, Detachment 12	
(U) \$479	Combined Space Test Task Force. Complete CTF tasks including final installation, test, and activation.	
Project 4597	Page 7 of 11 Pages	Exhibit R-2 (PE 0604759F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support		4597
PE NUMBER AND TITLE		
0604759F Major T&E Investment		
(U)	<u>A. Mission Description Continued</u>	
(U)	<u>FY 2002 (\$ in Thousands) Continued</u>	
(U)	\$0	Other Projects
(U)	\$300	T&E Board of Directors for T&E support.
(U)	\$501	Technology Insertion & Risk Reduction (TIRR). Initiate first TIRR sub-project: Flight Safety System (FSS). Assess flight safety technology and begin development of a prototype flight safety system. Modify aircraft to conduct test.
(U)	\$62,272	Total
(U)	<u>FY 2003 (\$ in Thousands)</u>	
(U)	\$0	46 Test Wing, Air Armament Center
(U)	\$1,002	Advanced GPS Hybrid Simulation (AGHS). Continue procurement of hardware and software required to simulate the new GPS signal structure.
(U)	\$2,101	Weapon Systems Integration Test Capability (WICS). Continue F-22 flutter, loads, stability and control M&S. Continue Eglin-Edwards high-speed data link for near real-time data analysis.
(U)	\$1,334	Advanced Airborne Instrumentation Integration (AAII). Continue acquisition and integration of state-of-the-art airborne instrumentation such as Advanced CAIS and CTEIP developed ARTM. Acquire ground support equipment to support pre/post flight operations
(U)	\$4,291	SCRAM. Continue acquisition of instrumentation to support scene characterization and reconstruction for T&E of EO/IR, RF/MMW, and GPS seeker/sensors.
(U)	\$1,291	Test Control & Visualization. Continue upgrades to TM systems and network infrastructure to handle higher data rates. Acquire real time computing servers, data recorders, and video displays.
(U)	\$1,456	C4I Advanced Simulation and Test Environment (CASTE). Continue acquisition of equipment, instrumentation, hardware, software, and connectivity.
(U)	\$2,534	OPFACs for Link 16 Weapon-Platform Integration (formerly Link-16 Support). Continue acquisition of platform simulators and related datalink equipment.
(U)	\$975	Climatic Lab Upgrade. Continue upgrades to instrumentation systems, climatic simulation equipment and facility equipment.
(U)	\$505	Armament and Munitions Digital Modeling and Simulation. Begin development and coordination of Modeling and Simulation Master Plan.
(U)	\$0	Air Force Flight Test Center
(U)	\$1,875	Flight Simulation Modernization (FSM). Complete fabrication of second and third console sets (Joint Strike Fighter), provide multiple simulation networking hardware and linking software. Provide capability to simulate flight of two-ship configuration in performance and
Project 4597		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support	0604759F Major T&E Investment	February 2002 4597
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2003 (\$ in Thousands) Continued</u>		
	flying quality testing, and capability to upgrade simulation to link live and simulated avionics and Electronic Warfare software and hardware into simulation environment. Fabricate fourth console set of a new aircraft configuration, or provide enhancements to either the previous three sets provided, or the reconfigurable simulator. Complete capability to provide separable simulations in a secure (Secret or higher) facility over a secure network.	
(U) \$3,115	MASTER. Develop On-line comparisons of predictions with flight trajectories and resolve anomalies between predictions and flight. Document result of F-22 simulation and re-usable code validation. Develop 4th generation information distribution interface and automated model-based fault detection and diagnostic capability for ground and flight test. Provide enhanced fluid-structural technology. Develop facility, configuration and data management capabilities, providing control of pre-test, test, and post test operations. Develop initial operational capability enabling collaboration between AFFTC and AEDC.	
(U) \$2,808	Advanced Range Telemetry (ARTM) Integration. Begin integration of ARTM's Multi-H Continuous Phase Modulation (CPM) into telemetry infrastructure. Continue the migration of telemetry users from S-band to L-band. Continue upgrading telemetry support infrastructure (includes airborne and ground segments) to adapt to new bandwidth efficient modulation schemes.	
(U) \$1,267	Advanced GPS Range Sensors (AGRS). Continue development and integration of the Inertial Measurement Unit (IMU) into next generation range GPS internal mount instrumentation equipment. Initiate high-accuracy kinematic GPS TSPI processing software upgrade. Initiate low cost real-time GPS integration effort. Continue to provide AFFTC inputs to the Range Instrumentation System Program Office (RISPO) for GPS and datalink equipment to be developed under their Enhanced Range Applications Program (EnRAP).	
(U) \$1,406	Data Processing Multi-Stage Improvement Program (DPMSIP). Study methods to increase range telemetry processor throughput. Complete work on a new control room data distribution network. Start work on an enhanced T&E data fusion processor. Complete the first operational mission control room with an enhanced data display system. Continue work on new post-test analysis workflow enhancements. Provide a prototype high level architecture (HLA) compliant engineering data display system to EW.	
(U) \$1,532	Next Generation Test Instrumentation. Continue to integrate next generation test instrumentation systems into multiple aircraft. Provide enhancements and improvements to the Internet based Instrumentation Management Information Systems. Expand the capabilities of Instrumentation Support Systems to program and preflight test vehicles. Develop airborne instrumentation components to address new sensor interfaces. Continue to purchase instrumentation components to upgrade obsolete and unreliable instrumentation components. Integrate on-board data processing devices into data acquisition systems.	
(U) \$0	Arnold Engineering Development Center	
(U) \$10,718	PWT Upgrades. Continue installation and checkout of electric motor upgrades. Continue installation and checkout of plant control systems	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT
06 - Management and Support		0604759F Major T&E Investment		4597
(U) <u>A. Mission Description Continued</u>				
(U) <u>FY 2003 (\$ in Thousands) Continued</u>				
		in 16T/16S wind tunnels. Begin installation and checkout of flow quality improvements.		
(U)	\$1,800	Improve Turbine Engine Structural Integrity. Continue the development of the Non-Intrusive Stress Measurement System (NSMS) software and hardware systems.		
(U)	\$2,283	Enhanced Turbine Engine Installation and Productivity (formerly JSF STOVL Engine Test Cells Upgrade). Continue design and procurement efforts. Initiate fabrication activities for sea level (SL3) upgrades for JSF, F-22, F-15, F-16, F-18, and other programs.		
(U)	\$2,866	Real Time Display and Analysis System. Install, check-out and validate the TUSS system in J2. Design, release procurement and begin installation of TUSS system in SL3. Continue design, release procurement and begin fabrication and installation of 4T Test Article Control System (TACS), Test System and Network. Begin validation of TACS and Network.		
(U)	\$0	Other Projects		
(U)	\$305	T&E Board of Directors for T&E support.		
(U)	\$324	Technology Insertion & Risk Reduction (TIRR). Complete first TIRR sub-project: Flight Safety System (FSS). Integrate and conduct flight test of the prototype flight safety system. Perform analysis and evaluation of the system performance.		
(U)	\$550	Multi-Service Target Control System Early Success Risk Mitigation (MSTCS ES RM). Develop, procure, and integrate the MSTCS Early Success Data Link Transponder, Vehicle Interface Unit, and GPS Instrumentation into four QF-4 Drone aircraft in support of air-to-air DT/OT&E.		
(U)	\$46,338	Total		
(U) <u>B. Budget Activity Justification</u>				
This Program Element is in Budget Activity 6, Management and Support, because it is a Research and Development (R&D) effort for Improvement and Modernization of T&E capabilities at Air Force Test Centers.				
(U) <u>C. Program Change Summary (\$ in Thousands)</u>				
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
(U)	Previous President's Budget	64,635	49,857	50,230
(U)	Appropriated Value	68,257	62,857	
(U)	Adjustments to Appropriated Value			
	a. Congressional/General Reductions	-148	-585	
	b. Small Business Innovative Research	-2,470		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002								
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT							
06 - Management and Support				0604759F Major T&E Investment				4597							
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>															
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>			<u>Total Cost</u>						
c. Omnibus or Other Above Threshold Reprogram															
d. Below Threshold Reprogram				-526											
e. Rescissions				-478											
(U) Adjustments to Budget Years Since FY 2002 PBR						-3,892									
(U) Current Budget Submit/FY 2003 PBR				64,635	62,272	46,338				TBD					
(U) <u>Significant Program Changes:</u>															
Congressional Action, FY02 plus up of 13,000: Holloman High Speed Test Track Upgrade (2,500), Airborne Separation Video (1,000), Laser Induced Surface Improvement (LISI) (1,000), Hypersonic Capability Development (8,500)															
FY03 reduction to fund other Air Force requirements.															
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>															
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>				
				<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Cost to Complete</u>				
(U) AF RDT&E															
(U) Other APPN															
Related RDT&E: PE 0604256F, Threat Simulator Development and PE 0604940D, Central Test and Evaluation Investment Program															
(U) <u>E. Acquisition Strategy</u>															
This program element uses several different contracting strategies to provide the most cost effective T&E investment solutions. The main acquisition strategy is to use full and open competition wherever possible to improve and modernize existing test capabilities.															
(U) <u>F. Schedule Profile</u>															
				<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
				1	2	3	4	1	2	3	4	1	2	3	4
(U) Air Force Test Investments															
This PE contains multiple schedule profiles which are available upon request.															
Project 4597				Page 11 of 11 Pages				Exhibit R-2 (PE 0604759F)							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605101F RAND Project Air Force	PROJECT 1110
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
1110 Project Air Force	25,877	25,098	25,462	25,916	26,393	26,823	27,416	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

(U) This program provides for continuing analytical research across a broad spectrum of aerospace issues and concerns. The Project AIR FORCE (PAF) research agenda is focused primarily on mid- to long-term problems; in addition, PAF provides quick response assistance for senior Air Force officials on high priority, near-term issues. Results and analytical findings directly impact senior management deliberations on major issues. The Air Force Steering Group, chaired by the Vice Chief of Staff, reviews, monitors, and approves PAF annual research efforts. Each project is initiated, processed, and approved IAW PAF Sponsoring Agreement which requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis.

(U) PAF is organized in four primary research program areas: strategy and doctrine; aerospace force development; manpower, personnel and training; and resource management. Integrative research projects are also conducted at the division level with direct support assistance provided through the most applicable program. Research programs address organizational crosscutting issues as defined by specific research themes approved by the Air Force Steering Group. These research themes encompass a wide spectrum of topics including external challenges to national security, integrating the ISR mix, terrorism and homeland defense, tailoring and reducing infrastructure to meet new force requirements, and improved weapon system costing.

(U) In FY00, principal research efforts included studies on the evolving Asian security environment, aerospace operations against elusive ground targets, lessons learned from the Air War over Serbia, Operations of U.S. forces in space, fighter and bomber force mix options, Command and control and battle management in future aerospace operations, use of commercial space capabilities, Shaping the Air Force workforce 2005, relating mission and training requirements to ranges and airspace, evaluating the aging aircraft fleet, strategic sourcing and the use of best commercial practices, agile combat support options for the Air expeditionary force, and managing readiness.

(U) In FY01, research undertaken by PAF was driven by specific focus areas developed through the USAF strategic planning process, force modernization initiatives, and enduring management and resource areas of concern to USAF leadership, in addition to extending work initiated in FY00. Work was defined in support of research themes which focused on major external challenges and opportunities affecting USAF operations, institutionalization of the USAF vision and strategic plan,

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002										
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605101F RAND Project Air Force PROJECT 1110											
<p>(U) <u>A. Mission Description Continued</u> implementation of the Air Expeditionary Force concept, integration of air and space operations, power projection forces, and force mix and infrastructure. Of particular note in FY01, PAF completed an assessment of Kosovo lessons learned, examined a common replacement aircraft for the C2ISR mission, examined and integrated aerospace and land forces in a joint expeditionary concept, assessed India's emerging nuclear posture, studied ways to implement flex-basing to enhance global presence for the AEF concept, and performed a strategic appraisal of future aerospace forces.</p> <p>(U) FY02 research themes were modified to achieve greater focus on transformation efforts, counter-terrorism and homeland defense Research efforts will concentrate on topics such as an integrated mix of on- ISR and strike forces, continued integration of air and space assets, issues associated with pursuing a common wide-body aircraft frame, establishment and sustainment of space capabilities, how to best develop Air Force leaders, officer and enlisted retention issues, command and control architecture for agile combat support, improved spares management and improved depot maintenance capability and managing a global consolidated aerospace industry.</p> <p>(U) Looking to the future, the FY03 research program will build on the initial steps taken in FY02 to better understand the role of aerospace power within Homeland Security and in conjunction with the other services explore the military role in the broader homeland security arena that is evolving. Also continue efforts aimed at helping the Air Force achieve the greatest impact from its transformation efforts and in response to the recent QDR changes in national security strategy and objectives.</p> <p>(U) PAF research spans functional and organization boundaries and is managed in a manner to facilitate independence and freedom from organizational bias thereby providing perspectives and insights to senior Air Force leaders free from parochial spins not necessarily in the best interest of the Air Force at large.</p> <p>(U) Benefits of independent non-Department of Defense analysis of complex present day and emerging issues are shared beyond the immediacy of the Air Force. PAF study results are given wide dissemination within the DOD on a routine basis and are deposited with the Defense Technical Information Center available to a broad range of qualified government and commercial individuals and activities.</p>												
<p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <table border="0"> <tr> <td>(U) \$3,600</td> <td>Strategy and Doctrine</td> </tr> <tr> <td>(U) \$6,800</td> <td>Aerospace Force Development</td> </tr> <tr> <td>(U) \$5,600</td> <td>Manpower, Personnel and Training</td> </tr> <tr> <td>(U) \$7,800</td> <td>Resource Management</td> </tr> <tr> <td>(U) \$2,077</td> <td>Integrative Research / Direct Support</td> </tr> </table>			(U) \$3,600	Strategy and Doctrine	(U) \$6,800	Aerospace Force Development	(U) \$5,600	Manpower, Personnel and Training	(U) \$7,800	Resource Management	(U) \$2,077	Integrative Research / Direct Support
(U) \$3,600	Strategy and Doctrine											
(U) \$6,800	Aerospace Force Development											
(U) \$5,600	Manpower, Personnel and Training											
(U) \$7,800	Resource Management											
(U) \$2,077	Integrative Research / Direct Support											
Project 1110	Page 2 of 4 Pages	Exhibit R-2 (PE 0605101F)										

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
06 - Management and Support	0605101F RAND Project Air Force	1110			
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2001 (\$ in Thousands) Continued</u>					
(U) \$25,877	Total				
(U) <u>FY 2002 (\$ in Thousands)</u>					
(U) \$3,800	Strategy and Doctrine				
(U) \$6,747	Aerospace Force Development				
(U) \$5,400	Manpower, Personnel and Training				
(U) \$7,200	Resource Management				
(U) \$1,951	Integrative Research / Direct Support				
(U) \$25,098	Total				
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U) \$3,900	Strategy and Doctrine				
(U) \$6,700	Aerospace Force Development				
(U) \$5,500	Manpower, Personnel, and Training				
(U) \$7,238	Resource Management				
(U) \$2,124	Integrative Research/Direct Support				
(U) \$25,462	Total				
(U) <u>B. Budget Activity Justification</u>					
This program is in budget activity 6 - Management and Support, because it funds RAND Project AIR FORCE (PAF), the only Air Force Federally Funded Research and Development Center for studies and analyses.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		24,080	25,098	25,524	
(U) Appropriated Value		22,080	25,098		TBD
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions		-155			
b. Small Business Innovative Research					
Project 1110	Page 3 of 4 Pages	Exhibit R-2 (PE 0605101F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE		
							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
06 - Management and Support				0605101F RAND Project Air Force			1110		
(U) C. Program Change Summary (\$ in Thousands) Continued									
				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>		
	c. Omnibus or Other Above Threshold Reprogram								
	d. Below Threshold Reprogram			4,000					
	e. Rescissions			-48					
(U)	Adjustments to Budget Years Since FY 2002 PBR					-62			
(U)	Current Budget Submit/FY 2003 PBR			25,877	25,098	25,462		TBD	
(U)	<u>Significant Program Changes:</u>								
	N/A								
(U) D. Other Program Funding Summary (\$ in Thousands)									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
(U)	Not Applicable								
(U) E. Acquisition Strategy									
	A comprehensive review of RAND/Project AIR FORCE has been completed and a new, 5-year (FY01-FY05) Cost Plus / Fixed Fee contract was awarded on 30 Sep 00.								
(U) F. Schedule Profile									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1	2	3	4	1	2
					2	3	4	1	2
								3	4
(U)	Adjust FY01 Research Plan			X					
(U)	Annual Evaluation FY01				X				
(U)	Draft FY02 Research Plan				X				
(U)	Approve FY02 Research Plan				*				
(U)	Adjust FY02 Research Plan						*		
(U)	Annual Evaluation FY02							*	
(U)	Draft FY03 Research Plan							*	
(U)	Approve FY03 Research Plan							*	
(U)	Adjust FY03 Research Plan								*

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605306F Ranch Hand II Epidemiology Study	PROJECT 2767
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2767 Ranch Hand II Epidemiology Study	4,184	10,849	11,029	4,834	4,950	4,312	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 As a result of Presidential direction, PE 0605306F was established to conduct a 20-year epidemiology investigation of approximately 1,200 Air Force personnel who were involved with aerial spraying of herbicides in Vietnam from 1962 to 1971 (Operation Ranch Hand). The objective of this investigation is to determine whether long-term health effects exist and can be attributed to occupational exposure to phenoxy herbicides and their associated dioxins.

This project involves a 20-year study, which was initiated in 1982, that compares United States Air Force (USAF) Ranch Hand personnel to a control group of USAF crew members and support personnel who were not exposed to herbicides while serving in Southeast Asia. Approximately 20,000 individuals (exposed personnel group plus control group) are participating in the annual mortality study, with approximately 2,200 (exposed personnel group plus control group) of these participating in the detailed morbidity study during each physical examination cycle. The detailed physical examination cycle includes follow-up health examinations at the 3-, 5-, 10-, 15-, and 20-year time periods. The study includes examination of the possible occurrence of birth defects in children as determined from children's medical records and family medical histories. The Congressionally-established Ranch Hand Advisory Committee has directed that all study findings be reported to the scientific community as peer-reviewed journal articles. Note: This program is comprised of six cycles and each cycle consists of participant physical examinations followed by data analysis and report generation. The largest expenditure of funds occurs during the physical exam cycles such as in 1997-1998 and 2002-2003. The program is currently in the preparation phase for physical exam cycle 6; therefore, significantly more funds will be required in FY 2002 and FY 2003 than were required in FY 2000 and FY 2001.

(U) **FY 2001 (\$ in Thousands)**

(U) \$1,307 Conducted analyses as directed by the Congressionally-established Ranch Hand Advisory Committee. Conducted process review prior to final examination cycle to determine potential participation rates, requirements for in-house or regional examination sites, and statistical, schedule, and cost implications of the aging study population.

(U) \$1,430 Conducted other agency/university studies supporting scientific effort. Completed Center for Disease Control study to test for the presence of other forms of dioxin than found in Agent Orange. Completed morbidity and mathematical modeling. Completed dioxin half-life and serum dioxin analyses. Started semen DNA study.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support		2767
PE NUMBER AND TITLE		
0605306F Ranch Hand II Epidemiology Study		
(U)	<u>A. Mission Description Continued</u>	
(U)	<u>FY 2001 (\$ in Thousands) Continued</u>	
(U)	\$1,447 Processed and documented examination data to include updating of the participant database. Conducted medical records coding. Performed the annual mortality analysis of approximately 1,200 Ranch Hand personnel and 19,000 comparison personnel. Conducted data analysis for articles to be submitted to peer-reviewed journals as directed.	
(U)	\$4,184 Total	
(U)	<u>FY 2002 (\$ in Thousands)</u>	
(U)	\$7,799 Initiate the sixth and final cycle of physical examinations, questionnaires, and participant database.	
(U)	\$1,642 Continue to process and document examination data to include continuing to verify the physical examination database. Conduct new coding and verify the coding of existing medical records. Perform the annual mortality analysis of approximately 1,200 Ranch Hand personnel and 19,000 comparison personnel. Conduct data analysis for articles to be submitted to peer-reviewed journals as directed. Process and document Cycle 6 examination data to include updating of the participant database. Continue to conduct medical records coding.	
(U)	\$1,408 Process and document examination data. Continue archiving previous cycles' examination data and digitize and archive the Cycle 6 data as received. Conduct medical records coding and verification of examination database and Cycles 1 through 6 coding. Perform annual mortality analysis. Conduct data analysis for journals and reports.	
(U)	\$10,849 Total	
(U)	<u>FY 2003 (\$ in Thousands)</u>	
(U)	\$9,811 Complete the sixth and final cycle of physical examinations, questionnaires, and participant database.	
(U)	\$1,018 Continue to process and document examination data to include continuing to verify the physical examination database. Conduct new coding and verify the coding of existing medical records. Perform the annual mortality analysis of approximately 1,200 Ranch Hand personnel and 19,000 comparison personnel. Conduct data analysis for articles to be submitted to peer-reviewed journals as directed. Process and document Cycle 6 examination data to include updating of the participant database. Continue to conduct medical records coding.	
(U)	\$200 Continue to process and document examination data. Continue archiving previous cycles' examination data and digitize and archive the Cycle 6 data as received. Conduct medical records coding and verification of examination database and Cycles 1 through 6 coding. Perform annual mortality analysis. Conduct data analysis for journals and reports. Continue maintenance of Ranch Hand LAN.	
(U)	\$11,029 Total	
Project 2767		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002																																																								
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605306F Ranch Hand II Epidemiology Study			PROJECT 2767																																																								
<p>(U) <u>B. Budget Activity Justification</u> This program is in Budget Activity 6, Management and Support, since it includes research and development efforts directed towards support of installations or operations required for general research and development use.</p>																																																															
<p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">4,315</td> <td style="text-align: right;">10,952</td> <td style="text-align: right;">11,338</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">4,356</td> <td style="text-align: right;">10,952</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td></td> <td style="text-align: right;">-103</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td style="text-align: right;">-131</td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td style="text-align: right;">-41</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: right;">-309</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">4,184</td> <td style="text-align: right;">10,849</td> <td style="text-align: right;">11,029</td> <td style="text-align: right;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> None. The increase in FY 2002 and FY 2003 funding is due to the physical exams scheduled in these years. The increase is a normal part of the cyclical nature of funding in this program.</p>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	4,315	10,952	11,338	TBD	(U) Appropriated Value	4,356	10,952			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions		-103			b. Small Business Innovative Research	-131				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions	-41				(U) Adjustments to Budget Years Since FY 2002 PBR			-309		(U) Current Budget Submit/FY 2003 PBR	4,184	10,849	11,029	TBD
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Project 2767			Page 3 of 4 Pages			Exhibit R-2 (PE 0605306F)																																																									

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002						
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605306F Ranch Hand II Epidemiology Study				PROJECT 2767					
(U) <u>F. Schedule Profile Continued</u>													
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
		1	2	3	4	1	2	3	4	1	2	3	4
(U) Not Applicable.													
Project 2767			Page 4 of 4 Pages				Exhibit R-2 (PE 0605306F)						

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation	PROJECT 0191
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0191 Initial Operational Test & Eval	32,677	33,179	27,070	27,529	28,073	28,559	29,155	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

Initial Operational Test and Evaluation (IOT&E) is conducted to determine the operational effectiveness and suitability of systems undergoing research and development (R&D) efforts. It is an evaluation of a system's performance when the complete system is tested and evaluated against operational criteria by personnel with the same qualifications as those who will operate, maintain and support the system when deployed. In general, IOT&E is performed on new systems in development, major modifications and other systems as directed. This PE funds Congressionally mandated IOT&E to support major weapon system acquisition decisions beyond Low-Rate Initial Production (LRIP), Milestone III, fielding, and declaration of Initial Operational Capability (IOC). For major systems designated for use in combat, the law requires IOT&E be completed under realistic field conditions before proceeding beyond Low Rate Initial Production. IOT&E will be planned to completely and unambiguously answer all critical operational issues (COI) as thoroughly as possible. This PE funds the OT participation in Combined Developmental/Operational Test (DT)/OT, the Air Force participation in Multiservice Operational Test and Evaluation (MOT&E), and Follow-on Operational Test and Evaluation (FOT&E) when it is the continuation of IOT&E activities past the Milestone III decision. FOT&E answers specific questions about unresolved COIs and test issues, or completes areas not finished during the IOT&E. This PE also funds related operational test and evaluation (OT&E) activities such as, Operational Utility Evaluations (OUE), Early Operational Assessments (EOA) and Operational Assessments (OA), and independent IOT&E which support major milestones and decision points prior to Milestone III, fielding, or declaration of IOC. IOT&E programs are identified in several system categories: Air; Space; Weapons; Command, Control, Communications, Computers, and Intelligence (C4I); Combat Support; and Test Support. Air Force Operational Test and Evaluation Center (AFOTEC) obtains general support services from contracts awarded after employing full and open competition contracting strategies.

(U) FY 2001 (\$ in Thousands)

(U) \$22,136 (U) CATEGORY: AIR SYSTEMS. Planned, executed, and reported IOT&E activities, to include: Airborne Laser (ABL); Advanced Strategic & Tactical IR Expendable (ASTE); B-1B Conventional Mission Upgrade Program (CMUP) BLK E; B-1B CMUP BLK F; B-52 Avionics Midlife Improvement (AMI); Compass Call; CV-22; F-15 Fiber Optic Towed Decoy (F-15 FOTD); F-16 Common Configuration Improvement Program (CCIP); F-22; Global Hawk High Altitude Vehicle (HAV) UAV; Joint Helmet Mounted Cueing System (JHMCS); Joint Strike Fighter (JSF); and other systems.
- ABL: Continued detailed planning for and conduct EOA2. Advance planning for OA and IOT&E.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605712F Initial Operational Test & Evaluation	0191
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
	<ul style="list-style-type: none"> - ASTE: Detailed planning for incremental IOT&E; began incremental IOT&E. - B-1B CMUP Block E: Conducted combined DT/OT. Completed detailed planning for IOT&E. - B-1B CMUP Block F: Conducted combined DT/OT. Completed detailed planning for IOT&E. - B-52 AMI: Planned and conducted OA; advance planning for IOT&E. - Compass Call: Conducted IOT&E - CV-22: Conducted combined DT/OT. Detailed planning for CV-22 IOT&E. - F-15 FOTD: Early involvement and advance planning for combined DT/OT and IOT&E. - F-16 CCIP: Detailed Planning of IOT&E. - F-22: Conducted combined DT/OT. Detailed planning for IOT&E. - Global Hawk HAV UAV: Advance Planning for IOT&E and started combined DT/OT. - JHMCS: Completed detailed planning and began IOT&E. - JSF: Completed EOA and wrote report. Completed detailed planning - began combined DT/OT and OA. 	
(U) \$2,205	<p>U) CATEGORY: SPACE SYSTEMS. Planned, executed, and reported IOT&E activities, to include: Advanced EHF Satellite Communications (Advanced EHF); Evolved Expendable Launch Vehicle (EELV); Global Broadcast System (GBS); Global Positioning Satellite (GPS); MILSTAR II; National Polar-Orbit Ops Environment Satellite System (NPOESS); Space Based InfraRed System (SBIRS); Wideband Gap Filler System (WGS); and other systems.</p> <ul style="list-style-type: none"> - Advanced EHF: Completed detailed planning and conducted EOA; wrote final report. - EELV: Planned and started OA II. - GBS: Planned, conducted, and reported on OA. - GPS: Executed combined DT/OT. Planning for OA1 and OA2 - MILSTAR II: Combined DT/OT. Ongoing MOD/SIM efforts. - NPOESS: Planned OA1. - SBIRS: Combined DT/OT on Increment 1; planned and conducted Increment 1 IOT&E. - WGS: Planned and began execution for OA. 	
(U) \$3,843	<p>(U) CATEGORY: WEAPONS. Planned, executed, and reported IOT&E activities, to include: AIM-9X Air-to-Air Missile; Hard Target Smart Fuse (HTSF); Joint Air-to-Surface Standoff Missile (JASSM); Joint Standoff Weapon (JSOW); and other systems.</p> <ul style="list-style-type: none"> - AIM-9X: Conducted second phase of combined DT/OT. Detailed planning for MOT&E. 	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605712F Initial Operational Test & Evaluation	0191
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
	- HTSF: Planned and conducted OUE. - JASSM: Conducted OA. Detailed planning for IOT&E.	
(U) \$1,828	- JSOW: Planned and conducted MOT&E and wrote final report. (U) CATEGORY: COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, and INTELLIGENCE (C4I). Planned, executed, and reported IOT&E activities, to include; Deliberate Crisis Action Planning and Execution System (DCAPES); DOD National Airspace System (DOD NAS); Global Air Traffic Management (GATM); Integrated Broadcast System (IBS); ICBM Minuteman MEECN Program (ICBM MMP); Joint STARS Block 30; Mobile Approach Control System (MACS); Theater Battle Management - Core Systems (TBM-CS); TRANSCOM Regulating and Command and Control Evacuation System (TRAC2ES); and other systems. - DCAPES: Conducted Increment 1 OA. - DOD NAS: Executing MOT&E. - GATM: Conducted IOT&E on C-17 platform. Advance planning for IOT&E on KC-135 and KC-10 platforms. - IBS: Planning for OA. - ICBM MMP: Planned IOT&E. - Joint Stars Blk 30: Prepared OT&E Plan. - MACS: OIA Development and OT Planning. - TBM-CS: Conducted DT/OT Versions 1.0.2 and 1.1. - TRAC2ES: Conducted IOT&E.	
(U) \$2,655	(U) CATEGORY: COMBAT SUPPORT. Planned, executed, and reported IOT&E activities, to include: Common Aircraft Portable Re-Prog Equipment(CAPRE); Common Low Observable Verification System (CLOVerS); Combat Survivor Evader Locator (CSEL); Integrated Logistics System - Supply (ILS-S); Joint Computer Aided Acq and Log Systems (JCALS); Joint Mission Planning System (JMPS); Joint Precision Approach & Landing system (JPALS); Joint Service Electronic Combat System Tester (JSECST); Joint Simulation System (JSIMS); Next Generation Small Loader (NGSL); Range Standardization Automation (RSA); and other systems. - CAPRE: Planned and Conducted IOT&E. - CLOVerS: Completed detailed planning and conducted OUE. - CSEL: Planned, executed, and reported on OA. Detailed planning for MOT&E.	
Project 0191	Page 3 of 10 Pages	Exhibit R-2 (PE 0605712F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605712F Initial Operational Test & Evaluation	0191
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2001 (\$ in Thousands) Continued</u></p> <ul style="list-style-type: none"> - ILS-S: Conducted CTF events. Advance planning for IOT&E. - JCALS: Detailed planning for IOT&E on software package 3.1 - JMPS: Conducted EOA. Detailed planning for IOT&E. - JPALS: Planning for EOA. - JSECST: Completed IOT&E and wrote final report. - JSIMS: Data collection and advance planning for MOT&E. - NGSL: Executed IOT&E and wrote final report. - RSA: Conducted and reported phase II OA. <p>(U) \$10 U) CATEGORY: TEST SUPPORT. Provide test capabilities infrastructure to support OT.</p> <ul style="list-style-type: none"> - Joint Modeling and Simulation System (JMASS): Planned and executed OUE. <p>(U) \$32,677 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$19,194 (U) CATEGORY: AIR SYSTEMS. Plan, execute, and report IOT&E activities, to include: Airborne Laser (ABL); Advanced Strategic & Tactical IR Expendable (ASTE); B-1B Conventional Mission Upgrade Program (CMUP) BLK E; B-1B CMUP BLK F; B-52 Avionics Mid-Life Improvement (AMI); C-17 GATM; Compass Call; CV-22; F-15 Fiber Optic Towed Decoy (F-15 FOTD); F-16 Common Configuration Improvement Program (CCIP); F-22; Global Hawk High Altitude Vehicle (HAV) UAV; Large Aircraft IRCM (LAIRCM); Joint Helmet Mounted Cueing System (JHMCS); Joint Strike Fighter (JSF); Mobile Approach Control System (MACS); and other systems.</p> <ul style="list-style-type: none"> - ABL: Complete EOA2 and issue final report. Continue advance planning for OA and IOT&E. - ASTE: Conduct incremental IOT&E and write final report. - B-1B CMUP Block E: Conduct IOT&E and write final test report. - B-1B CMUP Block F: Complete OA and detailed planning for IOT&E. - B-52 AMI: Detailed planning for IOT&E. - C-17 GATM: Conduct Block 13 OA - Compass Call: Advance planning for Blk 35 IOT&E. - CV-22: Continue combined DT/OT. Complete detailed planning for and conduct CV-22 IOT&E. - F-22: Pilot training; complete detailed planning for and begin IOT&E. 		
Project 0191	Page 4 of 10 Pages	Exhibit R-2 (PE 0605712F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605712F Initial Operational Test & Evaluation	0191
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
	<ul style="list-style-type: none"> - F-16 CCIP: Detailed Planning and conduct IOT&E. - F-15 FOTD: Publish OA; advanced planning for IOT&E. - Global Hawk HAV UAV: Participation in real-world events; detailed planning for IOT&E. - LAIRCM: Plan for IOT&E; conduct combined DT/OT. - JHMCS: Complete IOT&E and write final report. - JSF: Conduct EAO; advanced planning for IOT&E. - MACS: Detailed planning for IOT&E. 	
(U) \$1,987	(U) CATEGORY: SPACE SYSTEMS. Plan, execute, and report IOT&E activities, to include: Advanced EHF Satellite Communications (Advanced EHF); Evolved Expendable Launch Vehicle (EELV); Global Broadcast System (GBS); Global Positioning Satellite (GPS); MILSTAR II; National Polar-Orbit Ops Environment Satellite System (NPOESS); Space Based InfraRed System (SBIRS); Wideband Gap Filler System (WGS); and other systems. <ul style="list-style-type: none"> - Advanced EHF: Advance planning for IOT&E. - EELV: Complete OA report. - GBS: Complete MOT&E and write final report. Advance planning for FOT&E. - GPS: Advance planning for OA1. - MILSTAR II: Conduct MOT&E. - NPOESS: Complete detailed planning for and begin OA1. - SBIRS: Complete increment 1 IOT&E; Plan Increment 2 IOT&E; Conduct OUE. - WGS: Complete OA and conduct combined DT/OT. 	
(U) \$9,159	(U) CATEGORY: WEAPONS. Plan, execute, and report IOT&E activities, to include: AIM-9X Air-to-Air Missile; Hard Target Smart Fuse (HTSF); Joint Air-to-Surface Standoff Missile (JASSM); Joint Direct Attack Munition (JDAM) MK 82; Joint Stand-off Weapon (JSOW) Blu-97, and other systems. <ul style="list-style-type: none"> - AIM-9X: Complete DT/OT events; conduct MOT&E and begin writing final report. - HTSF: Complete OUE and write final report. - JASSM: Conduct IOT&E. - JDAM MK 82: Conduct combined DT/OT; advanced planning for IOT&E. - JSOW BLU-97: Conduct FOT&E and write report. 	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605712F Initial Operational Test & Evaluation	0191
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$1,865	(U) CATEGORY: COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE (C4I). Plan, execute, and report IOT&E activities, to include: Deliberate Crisis Action Planning and Execution System (DCAPES); Integrated Broadcast System (IBS); ICBM Minuteman MEECN Program (MMP); Joint STARS Block 30; NORAD_USSPACECOM Warning Surveillance System Air Mission Evolution (N_UWSS-AME); Theater Battle Management - Core Systems (TBM-CS); and other systems.	
	- DCAPES: Conduct Increment 2 IOT&E.	
	- IBS: Conduct OA.	
	- ICBM MMP: Conduct and report IOT&E.	
	- JOINT STARS BLK 30: Conduct and OT.	
	- N_UWSS-AME: Advanced planning for OA and IOT&E.	
	- TBM-CS: Complete testing of Increment 1.1 and MOT&E of version 2.0.	
(U) \$964	(U) CATEGORY: COMBAT SUPPORT. Plan, execute, and report IOT&E activities, to include: Common Aircraft Portable Reprog Equipment (CAPRE); Common Low Observable Verification System (CLOVerS); Combat Survivor Evader Locator (CSEL); Integrated Logistics System - Supply (ILS-S); Joint Computer Aided Acq and Log Systems (JCALS); Joint Mission Planning System (JMPS); Joint Precision Approach & Landing system (JPALS); Joint Tactical Combat Training System (JTCTS); and other systems.	
	- CAPRE: Complete IOT&E and write final report.	
	- CLOVerS: Combined DT/OT; Complete OUE and write final report.	
	- CSEL: Conduct MOT&E and write final report; plan for FOT&E.	
	- ILS-S: Conduct CTF events. Advance planning for IOT&E.	
	- JCALS: Conduct IOT&E on software packages 3.1 and 3.3.	
	- JMPS: Conduct OA and participate in combined DT/OT events.	
	- JPALS: Participate in Combined DT/OT events; detailed planning for MOT&E.	
	- JTCTS: Complete OA and write report. Detailed planning for MOT&E.	
(U) \$10	(U) CATEGORY: TEST SUPPORT. Provide test capabilities infrastructure to support OT.	
	Joint Modeling and Simulation System (JMASS): Complete OUE; write final report.	
(U) \$33,179	Total	
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605712F Initial Operational Test & Evaluation	0191
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$21,325 (U) CATEGORY: AIR SYSTEMS. Plan, execute, and report IOT&E activities, to include: Airborne Laser (ABL); ALR-69 RWR Capability Improvement (ALR-69 RWR CI); B-1B Conventional Mission Upgrade Program (CMUP) BLK E; B-1B CMUP BLK F; B-52 Avionics Mid-Life Improvement (AMI); C-17 GATM; Compass Call; CV-22; F-15 Fiber Optic Towed Decoy (F-15 FOTD); F-16 Common Configuration Improvement Program (CCIP); F-22; Global Hawk High Altitude Vehicle (HAV) UAV; Large Aircraft IRCM (LAIRCM); Joint Strike Fighter (JSF); Mobile Approach Control System (MACS); and other systems.</p> <ul style="list-style-type: none"> - F-22: Conduct IOT&E - ABL: Write OA plan; continue advance planning IOT&E. - ALR-69 RWR: Conduct IOT&E. - B-1B CMUP Block E: Complete final test report. - B-1B CMUP Block F: Detailed planning for IOT&E. - B-52 AMI: Plan and conduct IOT&E. - C-17 GATM: Conduct Block 14 IOT&E. - Compass Call: Advance planning for Blk 35 IOT&E. - CV-22: Plan for and conduct CV-22 IOT&E. - F-15 FOTD: Brief OA Results; advanced planning for IOT&E. - F-16 CCIP: Conduct IOT&E. - Global Hawk HAV UAV: Participation in real-world events; detailed planning for IOT&E. - JSF: Advanced planning for IOT&E. - LAIRCM: Plan and conduct IOT&E. - MACS: Plan and conduct IOT&E. <p>(U) \$1,039 (U) CATEGORY: SPACE SYSTEMS. Plan, execute, and report IOT&E activities, to include: Advanced EHF Satellite Communications (Advanced EHF); Global Broadcast System (GBS); Global Positioning Satellite (GPS); MILSTAR II; National Polar-Orbit Ops Environment Satellite System (NPOESS); Space Based InfraRed System (SBIRS); Wideband Gap Filler System (WGS); and other systems.</p> <ul style="list-style-type: none"> - Advanced EHF: Advance planning for IOT&E. - GBS: Plan and conduct FOT&E. 		
Project 0191	Page 7 of 10 Pages	Exhibit R-2 (PE 0605712F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605712F Initial Operational Test & Evaluation	0191
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2003 (\$ in Thousands) Continued</u>		
	<ul style="list-style-type: none"> - GPS: Plan and conduct OA2. - MILSTAR II: Complete MOT&E; write Final Report. - NPOESS: Planning for OA2 and IOT&E. - SBIRS: Perform OUEs to support Increment 2 ground system upgrades; participate in MP3 MOT&E. - WGS: Participate in combined DT/OT. 	
(U) \$2,939	<p>(U) CATEGORY: WEAPONS. Plan, execute, and report IOT&E activities, to include: AIM-9X Air-to-Air Missile; Joint Air-to-Surface Standoff Missile (JASSM); Joint Direct Attack Munition (JDAM) MK 82, Joint Stand-Off Weapon (JSOW), and other systems.</p> <ul style="list-style-type: none"> - AIM-9X: Complete MOT&E and write final report. - JASSM: Complete MOT&E and write final report. - JDAM MK 82: Conduct combined DT/OT; advanced planning for IOT&E. - JSOW (BLU-108): Complete MOT&E and FOT&E. 	
(U) \$1,149	<p>(U) CATEGORY: COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE (C4I). Plan, execute, and report IOT&E activities, to include: Deliberate Crisis Action Planning and Execution System (DCAPES); Integrated Broadcast System (IBS); Joint STARS Block 30; Joint Tactical Terminal (JTT); NORAD_USSPACECOM Warning Surveillance System (N_UWSS); Theater Battle Management – Core Systems (TBM-CS); and other systems.</p> <ul style="list-style-type: none"> - DCAPES: Complete Increment 2 IOT&E. - IBS: Complete OA and participate in CTF activities. - JOINT STARS BLK 30: Conduct OA and continue Test Planning. - JTT: Complete IOT&E. - N_UWSS: Planning for OA and IOT&E. - TBM-CS: Complete MOT&E of version 2.0. 	
(U) \$618	<p>(U) CATEGORY: COMBAT SUPPORT. Plan, execute, and report IOT&E activities, to include: Common Low Observable Verification System (CLOVeRS); Combat Survivor Evader Locator (CSEL); Integrated Logistics System – Supply (ILS-S); Joint Computer Aided Acquisition and Logistics Support (JCALS); Joint Mission Planning System (JMPS); Joint Precision Approach & Landing system (JPALS); Joint Tactical Combat Training System (JTCTS); and other systems.</p> <ul style="list-style-type: none"> - CLOVeRS: Conduct IOT&E. 	
Project 0191	Page 8 of 10 Pages	Exhibit R-2 (PE 0605712F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002																																																							
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605712F Initial Operational Test & Evaluation																																																								
		PROJECT 0191																																																							
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands) Continued</u></p> <ul style="list-style-type: none"> - CSEL: Plan and conduct FOT&E. - ILS-S: Conduct CTF events. Advance Planning for IOT&E. - JCALS: Conduct SWP 3.3 OT. - JMPS: Conduct IOT&E on release 1.0. - JPALS: Participate in Combined DT/OT events; detailed planning for MOT&E. - JTCTS: Detailed Planning for MOT&E. <p>(U) \$27,070 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program element is in Budget Activity 6, RDT&E Management Support, because it funds weapon system IOT&E tests conducted to evaluate a system's operational effectiveness and suitability and to identify any operational deficiencies or need for modifications in support of the acquisition process.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;"></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">32,933</td> <td style="text-align: center;">28,998</td> <td style="text-align: center;">29,253</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">33,238</td> <td style="text-align: center;">33,498</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td style="text-align: center;">-233</td> <td style="text-align: center;">-304</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td style="text-align: center;">-256</td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td style="text-align: center;">-72</td> <td style="text-align: center;">-15</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">-2,183</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">32,677</td> <td style="text-align: center;">33,179</td> <td style="text-align: center;">27,070</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u> Congressional Action, FY02 plus up of \$4.5M FY03 reduction to fund higher Air Force requirements.</p>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	32,933	28,998	29,253	TBD	(U) Appropriated Value	33,238	33,498			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-233	-304			b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-256				e. Rescissions	-72	-15			(U) Adjustments to Budget Years Since FY 2002 PBR			-2,183		(U) Current Budget Submit/FY 2003 PBR	32,677	33,179	27,070	TBD
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Project 0191	Page 9 of 10 Pages	Exhibit R-2 (PE 0605712F)																																																							

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
06 - Management and Support				0605712F Initial Operational Test & Evaluation				0191		
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
(U) N/A										
(U) <u>E. Acquisition Strategy</u>										
N/A										
(U) <u>F. Schedule Profile</u>										
				<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>	
				1 2 3 4		1 2 3 4			1 2 3 4	
(U) IOT&E is not an acquisition program.										

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002																															
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605807F Test and Evaluation Support																																			
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost																														
Total Program Element (PE) Cost	380,227	392,453	398,266	406,485	466,509	468,847	469,081	Continuing	TBD																														
06TG 46 Test Group	20,392	21,097	22,287	22,959	26,673	24,608	24,611	Continuing	TBD																														
06TS Test and Evaluation Support	359,835	371,356	375,979	383,526	439,836	444,239	444,470	Continuing	TBD																														
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0																														
<p>(U) <u>A. Mission Description</u> Test facilities, capabilities and resources operated through this program include wind tunnels, rocket and jet engine test cells, limited space environmental simulation chambers, armament test ranges, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, maintenance and repair of test facilities, civilian payroll, and contractor services. It also provides resources for maintaining Air Force Materiel Command (AFMC) assigned test and test support coded aircraft. No acquisition contracts are funded from this program; test support contracts for services and supplies and equipment are predominantly awarded on the basis of full and open competition.</p> <p>(U) <u>B. Budget Activity Justification</u> This program element is in Budget Activity 6, RDT&E Management Support, because it funds institutional infrastructure resources (civilians, aircraft, facilities and ranges) to operate the Air Force test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB).</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td>382,663</td> <td>398,570</td> <td>378,880</td> <td>TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td>386,205</td> <td>394,570</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td>-2,701</td> <td>-2,117</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td>0</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	382,663	398,570	378,880	TBD	(U) Appropriated Value	386,205	394,570			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-2,701	-2,117			b. Small Business Innovative Research	0			
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>																																			
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		
06 - Management and Support		February 2002		
BUDGET ACTIVITY	PE NUMBER AND TITLE			
06 - Management and Support	0605807F Test and Evaluation Support			
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
c. Omnibus or Other Above Threshold Reprogram	100			
d. Below Threshold Reprogram	-2,538			
e. Rescissions	-839			
(U) Adjustments to Budget Years Since FY 2002 PBR			19,386	
(U) Current Budget Submit/FY 2003 PBR	380,227	392,453	398,266	TBD
(U) <u>Significant Program Changes:</u>	FY02 Congressional Add of \$1.0M for Enhanced Flight Termination System (EFTS). FY03 increase to fund maintenance and repair.			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002			
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605807F Test and Evaluation Support				PROJECT 06TG			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
06TG	46 Test Group	20,392	21,097	22,287	22,959	26,673	24,608	24,611	Continuing	TBD	
<p>(U) <u>A. Mission Description</u> This project funds institutional test infrastructure support including: Command and supervisory staffs; supply stocks; upkeep, refurbishment, repair, and replacement of non-repairable or obsolete test equipment; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries, utilities, temporary duty travel, support contract costs for hardware and software engineering and maintenance. Project infrastructure support is provided for the unique capabilities of the 46th Test Group (TG) facilities: Central Inertial Guidance Test Facility (CIGTF/746th Test Squadron), the Holloman High Speed Test Track (HHSTT/846th Test Squadron) and the National Radar Cross Section (RCS) Test Facility (NRTF), the 586th Flight Test Squadron and Detachment 1 (DET 1). CIGTF provides independent assessments of inertial components, aircraft navigation systems, and missile guidance systems. HHSTT capabilities include full-scale testing in flight environments, realistic live-fire simulations, test item and target fragment recovery, and precision trajectory analysis and high speed photography. NRTF provides radar cross section (RCS) monostatic and bi-static amplitude and phase measurements, antenna pattern measurements, glint and near field measurements for low observable targets. The DET 1 provides liason function for coordination of all AF test and training operations at White Sands Missile Range (WSMR). A growing number of the WSMR tests support Directed Energy Systems. The 586th Flight Test Squadron provides flight test support for weapon system, missile, guided bomb and spaceplane test and evaluation. The 46th TG support services contracts are awarded on the basis of full and open competition.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$2,599 Continue institutional test infrastructure support to enable testing for unclassified programs such as Miniaturized Airborne Global Positioning Upgrade, Joint Global Positioning System (GPS) Combat Effectiveness, GPS jamming and electronic countermeasures, Navigational Warfare (NAVWAR), Federal Aviation Authority (FAA), GPS integrated and embedded Inertial Navigation System (INS) programs, aircraft navigation systems including B-2 and F-22, munitions navigation systems such as Joint Air-to-Surface Standoff Missile (JASSM), F-22 ejection seat, Advanced Concept Ejection Seat (ACES) II Cooperative Modification Project (CMP), Standard Missile (SM) -3 Live Fire T&E (LFT&E), Theater High Altitude Area Defense (THAAD) LFT&E, Compact Energy Missile (CKEM) LFT&E, RCS testing, as well as multiple classified programs. Continue GPS-Joint Program Office (JPO) Responsible Test Organization (RTO) responsibilities.</p> <p>(U) \$10,283 Contractor Services (in-house contract support activities)</p> <p>(U) \$7,510 T&E Civilian Pay</p> <p>(U) \$20,392 Total</p>											
Project 06TG				Page 3 of 11 Pages				Exhibit R-2A (PE 0605807F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support	0605807F Test and Evaluation Support	February 2002 06TG
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$2,735	Continue institutional test infrastructure support to enable testing for unclassified programs such as Miniaturized Airborne Global Positioning Upgrade, Joint Global Positioning System (GPS) Combat Effectiveness, GPS jamming and electronic countermeasures, NAVWAR, Federal Aviation Authority (FAA), GPS integrated and embedded Inertial Navigation System (INS) programs, aircraft navigation systems including B-2 and F-22, munitions navigation systems such as Joint Air-to-Surface Standoff Missile (JASSM), F-22 ejection seat, Advanced Concept Ejection Seat (ACES) II Cooperative Modification Project (CMP), SM-3 Live Fire T&E (LFT&E), Theater High Altitude Area Defense (THAAD) LFT&E, Compact Energy Missile (CKEM) LFT&E, RCS testing, as well as multiple classified programs. Continue GPS-Joint Program Office (JPO) Responsible Test Organization (RTO) responsibilities.	
(U) \$11,186	Contractor Services (in-house contract support activities)	
(U) \$7,176	T&E Civilian Pay	
(U) \$21,097	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$2,853	Continue institutional test infrastructure support to enable testing for unclassified programs such as Miniaturized Airborne Global Positioning Upgrade, Joint Global Positioning System (GPS) Combat Effectiveness, GPS jamming and electronic countermeasures, NAVWAR, Federal Aviation Authority (FAA), GPS integrated and embedded Inertial Navigation System (INS) programs, aircraft navigation systems including B-2 and F-22, munitions navigation systems such as Joint Air-to-Surface Standoff Missile (JASSM), F-22 ejection seat, Advanced Concept Ejection Seat (ACES) II Cooperative Modification Project (CMP), SM-3 Live Fire T&E (LFT&E), Theater High Altitude Area Defense (THAAD) LFT&E, Compact Energy Missile (CKEM) LFT&E, RCS testing, as well as multiple classified programs. Continue GPS-Joint Program Office (JPO) Responsible Test Organization (RTO) responsibilities.	
(U) \$438	Maintenance and repair for test unique infrastructure.	
(U) \$11,325	Contractor Services (in-house contract support activities)	
(U) \$7,671	T&E Civilian Pay	
(U) \$22,287	Total	
(U) <u>B. Project Change Summary</u>		
(U) Significant Program Changes: None		
Project 06TG	Page 4 of 11 Pages	Exhibit R-2A (PE 0605807F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605807F Test and Evaluation Support				PROJECT 06TG	
(U) C. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Not Applicable									
(U) Related RDT&E:									
(U) PE 0604759F, Major T&E Investment (Technical capability improvement and modernization)	0	938	1,002	1,095	1,215	299	3,989	Continuing	TBD
(U) PE 0604256F, Threat Simulator Development	1,592	2,065	2,146	1,753	1,987	2,152	2,651	Continuing	TBD
(U) PE 0604940D, Central Test & Evaluation Improvement Program (T&E) (investments for new tri-service test capabilities). Service programs compete for CTEIP funds on a yearly basis. FY2003 through FY2007 are To Be Determined (TBD).	9,125	2,000							TBD
(U) D. Acquisition Strategy									
Not applicable									
(U) E. Schedule Profile									
				<u>FY 2001</u>			<u>FY 2002</u>		<u>FY 2003</u>
			1	2	3	4	1	2	3
							1	2	3
(U) N/A									
46TG infrastructure support operations are continuous and are not driven by discrete start/end dates.									
Project 06TG			Page 5 of 11 Pages				Exhibit R-2A (PE 0605807F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605807F Test and Evaluation Support	PROJECT 06TS
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
06TS Test and Evaluation Support	359,835	371,356	375,979	383,526	439,836	444,239	444,470	Continuing	TBD

(U) A. Mission Description

This project provides resources to operate the Air Force test activities which are included in the Department of Defense (DoD) Major Range and Test Facility Base (MRTFB). Test facilities/capabilities operated through this program include wind tunnels, rocket and jet engine test cells, limited space environmental simulation chambers, armament test ranges, climatic test facilities, avionics test facilities, aircraft testbeds, dry lakebed landing sites, instrumented test ranges, and test aircraft maintenance. Test and Evaluation (T&E) Support funds institutional test infrastructure activities including: Command and supervisory staffs; supply stocks; maintenance, repair, and replacement of worn or obsolete test equipment and facilities; test infrastructure for data collection, transmission, reduction, and analysis; civilian salaries; temporary duty travel; support contract costs for hardware and software engineering and maintenance; and minor improvement and modernization projects. It also funds institutional test aircraft depot level maintenance such as: Programmed Depot Maintenance (PDM), the calendar-based cyclic scheduling of aircraft into depots for update/inspection; modifications and any other depot level repairs required by the aircraft System Program Directors (SPD); engine overhauls; depot-provided area assistance; and assorted ground support equipment overhauls. Three major Air Force test centers are supported by this project: (1) Arnold Engineering and Development Center (AEDC), located at Arnold Air Force Base (AFB), TN, whose institutional test infrastructure supports operations of the largest complex of ground test facilities in the free world (includes transonic, supersonic, and hypersonic wind tunnels; rocket motor and turbine engine test cells; space environmental test chambers, hyperballistic ranges; and other specialized facilities). (2) Air Force Flight Test Center (AFFTC), located at Edwards AFB, CA, whose institutional test infrastructure supports weapons system development and operational test and evaluation for aircraft, aircraft subsystems and aircraft weapon systems, aerospace research vehicles, unmanned miniature vehicles, cruise missiles, parachute delivery/recovery systems, cargo handling systems, and Electronic Warfare (EW) systems for DoD and allied forces. The AFFTC mission includes the United States Air Force (USAF) Test Pilot School. (3) Air Armament Center (AAC) 46th Test Wing (TW) located at Eglin AFB, FL, is comprised of 724 square miles of land area, and approximately 123,000 square miles of water space. AAC 46TW provides the institutional test infrastructure required for the conduct of developmental and operational test and evaluation of non-nuclear air armaments (including aircraft guns, ammunition, bombs, and missiles); Command, Control, Communications, Computers and Intelligence (C4I) systems; target acquisition and weapon delivery systems; a multi-service climatic simulation capability, and determines target/test item spectral signatures for DOD and allied forces. AAC 46TW provides a scientific test process that supports the development and enhancement of munitions systems that support tri-service smart weapons development. AAC 46TW technology is compatible with weapon systems to be tested such as Advanced Medium Range Air-to-Air Missile (AMRAAM), Joint Direct Attack Munition (JDAM), AGM-130, Advanced Short Range Air-to-Air Missile (ASRAAM), Joint Tactical Information Distribution System (JTIDS), Joint Surveillance Target Attack Radar System (JSTARS), Combat Talon, etc. T&E support services contracts are awarded on the basis of full and open competition.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605807F Test and Evaluation Support	06TS
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$0	ARNOLD ENGINEERING AND DEVELOPMENT CENTER (AEDC)	
(U) \$17,425	Continue institutional test infrastructure support to enable ground testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, JSF, B-1B, B-2, X-37, C-130, AMRAAM, AIM 9X, Minuteman, EELV, THAAD, Titan IV, F-18, F404, F414, F100, F119, and Tunnel 9).	
(U) \$20,833	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$92,822	Contractor Services (in-house contract support activities).	
(U) \$11,000	T&E Civilian Pay.	
(U) \$250	NATO Cooperative Research and Development (R&D) efforts in Imaging Spectrometer Development (AEDC/Canada). Continue effort to pool the spatial and spectral advances of both the US and Canada, and develop a high-resolution sensor system capable of characterizing signatures of rockets and aircraft, for drug interdiction, and identifying trace quantities of a broad spectrum of gases in the environment. Previously funded in PE 06063790F, NATO Cooperative R&D.	
(U) \$0		
(U) \$0	AIR FORCE FLIGHT TEST CENTER (AFFTC)	
(U) \$2,361	Continue to provide institutional test infrastructure support enabling testing of the B-1B, B-2, B-52, F-16, F-15, F-15E, F-22, F-117, Advanced Fighter Technology Integration (AFTI)/F-16, C-17, Avionics Test and Integration Center (ATIC), Advanced Range Instrumentation Aircraft (ARIA), Electronic Counter Countermeasures (ECCM), Electronic Warfare (EW) (B-1B ALQ-161, F-16 AN/ASQ-213, C-130 ALQ-172, etc.), and classified programs.	
(U) \$4,898	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$26,562	Contractor Services (in-house contract support activities).	
(U) \$63,194	T&E Civilian Pay.	
(U) \$41,363	Aircraft flying hour costs include: USAF Test Pilot School, pilot proficiency flying for sustained readiness; programmed depot maintenance (PDM); engine overhauls; petroleum, oils, and lubricants (POL); depot level reparables (DLR); fuel and fuel price increases; and related support. Proficiency flying funded at minimum levels to meet AFFTC proficiency flying goals. Includes Omnibus funding for regeneration effort for F-16 (Peace Gate) aircraft.	
(U) \$0		
(U) \$0	AIR ARMAMENT CENTER (AAC) 46th Test Wing (TW)	
(U) \$5,890	Continue institutional test infrastructure support for non-nuclear air armaments (JASSM, SEEK EAGLE, Wind Corrected Munitions Dispenser	
Project 06TS	Page 7 of 11 Pages	Exhibit R-2A (PE 0605807F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605807F Test and Evaluation Support	06TS
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
	(WCMD), Enhanced Guidance, Bomb Unit (GBU) -15, AIM 9X, AMRAAM, ASRAAM, Hellfire, PATRIOT, Directional Intra-Red Countermeasures (DIRCM), Ammunition for Advance Amphibious Assault Vehicle (AAAV), Unmanned Combat Aerial Vehicle (UCAV), etc.); C2 (Theater Battle Management Core System (TMBCS)), Link 16, Base and Installation Security System (BISS), and aircraft software upgrades (Air Force Mission Support System (AFMSS)).	
(U) \$5,843	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$17,740	Contractor Services (in-house contract support activities).	
(U) \$41,352	T&E Civilian Pay.	
(U) \$8,302	Aircraft flying hour costs include: pilot proficiency flying for sustained readiness; programmed depot maintenance (PDM); engine overhauls; petroleum, oils, and lubricants (POL); depot level repairables (DLR); fuel and fuel price increases; and related support. Funds proficiency flying to minimum levels allowing AAC 46TW to meet proficiency flying goals.	
(U) \$359,835	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$0	ARNOLD ENGINEERING AND DEVELOPMENT CENTER (AEDC)	
(U) \$2,915	Continue institutional test infrastructure support to enable ground testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, JSF, B-1B, B-2, X-37, X-38, KC-10, AMRAAM, AIM 9X, Minuteman, Peace Keeper, EELV, THAAD, Hyper-X CTS, Delta IV, F-18, TF39, F404, F405, F414, F100, F110, F415, F118, F119, and Tunnel 9).	
(U) \$26,424	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$95,827	Contractor Services (in-house contract support activities).	
(U) \$12,474	T&E Civilian Pay.	
(U) \$0	No Activity	
(U) \$0	AIR FORCE FLIGHT TEST CENTER (AFFTC)	
(U) \$2,636	Continue to provide institutional test infrastructure support enabling testing of the B-1B, B-2, B-52, F-16, F-15, F-15E, F-22, F-117, AFTI/F-16, C-17, ATIC, ECCM, EW (B-1B ALQ-161, F-16 AN/ASQ-213, C-130 ALQ-172, etc.), and classified programs. Includes effort for Enhanced Flight Termination System.	
(U) \$4,790	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$28,016	Contractor services (in-house contract support activities)	
Project 06TS	Page 8 of 11 Pages	Exhibit R-2A (PE 0605807F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605807F Test and Evaluation Support	06TS
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
(U) \$69,033	T&E Civilian Pay	
(U) \$53,742	Aircraft flying hour costs (to include USAF Test Pilot School) for pilot proficiency for sustained readiness to include programmed depot maintenance (PDM), engine overhauls, petroleum, oils, and lubricants (POL), depot level reparable (DLR) and related support. Flying proficiency funded at minimum levels to meet AFFTC proficiency flying goals. Includes regeneration effort for F-16 (Peace Gate) aircraft.	
(U) \$0	No Activity	
(U) \$0	AIR ARMAMENT CENTER (AAC) 46th Test Wing (TW)	
(U) \$5,675	Continue institutional test infrastructure support for non-nuclear air armaments (JASSM, SEEK EAGLE, WCMD, Enhanced GBU-15, AIM 9X, AMRAAM, ASRAAM, Hellfire, PATRIOT, DIRCM, AAV, UCAV, etc.); C2 (TMBCS, Link 16, BISS, and aircraft software upgrades (AFMSS)).	
(U) \$5,843	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$21,198	Contractor Services (in-house contract support activities).	
(U) \$31,464	T&E Civilian Pay. Civilian authorizations moved due to mission change for Command Support Staff.	
(U) \$11,319	Aircraft flying hour costs include: pilot proficiency flying for sustained readiness; programmed depot maintenance (PDM); engine overhauls; petroleum, oils, and lubricants (POL); depot level reparable (DLR); fuel and fuel price increases; and related support. Funds proficiency flying to minimum levels allowing AAC 46TW to meet proficiency flying goals.	
(U) \$371,356	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$0	ARNOLD ENGINEERING AND DEVELOPMENT CENTER (AEDC)	
(U) \$3,427	Continue institutional test infrastructure support to enable ground testing for classified programs, and unclassified programs (F-22, JDAM, F-15, F-16, JSF, B-1B, B-2, X-37, X-38, KC-10, AMRAAM, AIM 9X, Minuteman, Peace Keeper, EELV, THAAD, Hyper-X CTS, Delta IV, F-18, TF39, F404, F414, F100, F110, F415, F118, F119, and Tunnel 9).	
(U) \$42,345	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$96,147	Contractor Services (in-house contract support activities).	
(U) \$14,314	T&E Civilian Pay.	
(U) \$0	No Activity	
(U) \$0	AIR FORCE FLIGHT TEST CENTER (AFFTC)	
Project 06TS	Page 9 of 11 Pages	Exhibit R-2A (PE 0605807F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	0605807F Test and Evaluation Support	06TS
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2003 (\$ in Thousands) Continued</u>		
(U) \$1,401	Continue to provide institutional test infrastructure support enabling testing of the B-1B, B-2, B-52, F-16, F-15, F-15E, F-22, F-117, AFTI/F-16, C-17, ATIC, ECCM, EW (B-1B ALQ-161, F-16 AN/ASQ-213, C-130 ALQ-172, etc.), and classified programs.	
(U) \$5,442	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$25,566	Contractor services (in-house contract support activities)	
(U) \$77,327	T&E Civilian Pay	
(U) \$37,662	Aircraft flying hour costs (to include USAF Test Pilot School) for pilot proficiency for sustained readiness to include programmed depot maintenance (PDM), engine overhauls, petroleum, oils, and lubricants (POL), depot level repairables (DLR) and related support. Flying proficiency funded at minimum levels to meet AFFTC proficiency flying goals.	
(U) \$0	No Activity	
(U) \$0	AIR ARMAMENT CENTER (AAC) 46th Test Wing (TW)	
(U) \$2,620	Continue institutional test infrastructure support for non-nuclear air armaments (JASSM, SEEK EAGLE, WCMD, Enhanced GBU-15, AIM 9X, AMRAAM, ASRAAM, Hellfire, PATRIOT, DIRCM, AAV, UCAV, etc.); C2 (TMBCS, Link 16, BISS, and aircraft software upgrades (AFMSS)).	
(U) \$6,511	Utilities and maintenance and repair for test unique infrastructure.	
(U) \$19,388	Contractor Services (in-house contract support activities).	
(U) \$32,615	T&E Civilian Pay.	
(U) \$11,214	Aircraft Support (Includes programmed depot maintenance; engine overhauls; petroleum, oils and lubricants (POL); and related support). Fund proficiency flying to minimum levels allowing AAC 46TW to meet proficiency flying goals.	
(U) \$375,979	Total	
(U) <u>B. Project Change Summary</u>		
FY02 Congressional Add of \$1.0M for Enhanced Flight Termination System (EFTS).		
FY03 increase to fund maintenance and repair.		
Project 06TS	Page 10 of 11 Pages	Exhibit R-2A (PE 0605807F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605807F Test and Evaluation Support				PROJECT 06TS	
(U) C. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Not Applicable									
(U) Related RDT&E:									
(U) PE 0604759F, Major T&E Investment (Technical capability improvement and modernization)	63,560	49,857	44,134	51,654	60,224	60,689	58,624	Continuing	TBD
(U) PE 0604256F, Threat Simulator Development	22,832	26,209	18,204	30,816	31,232	31,747	31,986	Continuing	TBD
(U) PE 0604940D, Central Test & Evaluation Improvement Program (T&E) (investments for new tri-service test capabilities). Service programs compete for CTEIP funds on a yearly basis.	31,508	33,268	36,919	32,771	31,049	19,755	6,595	Continuing	TBD
(U) D. Acquisition Strategy									
Not applicable.									
(U) E. Schedule Profile									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1	2	3	4	1	2
								3	4
(U) N/A									
Most T&E test infrastructure overhead requirements are continuous and are not driven by discrete start/end dates.									
Project 06TS			Page 11 of 11 Pages				Exhibit R-2A (PE 0605807F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002			
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605860F Rocket Systems Launch Program (RSLP)				PROJECT 1023			
COST (\$ in Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost	
1023	Rocket System Launch Program (RSLP)	7,292	27,618	16,237	12,369	15,088	19,020	9,421	Continuing	TBD	
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	
<p>(U) <u>A. Mission Description</u> Rocket System Launch Program (RSLP) is tasked to provide Research, Development, Test and Evaluation (RDT&E) launch vehicle support to DoD and other government agencies using excess ballistic missiles assets. The RSLP mission was established by the Secretary of Defense in 1972. It provides mission planning, payload integration, launch support, booster storage and disposition, aging surveillance, maintenance and logistics support for selected DoD RDT&E launches. Costs directly attributable to a specific launch or program are paid by the user (Air Force, Navy, Army, Missile Defense Agency (MDA), etc.). RSLP maintains exclusive control of deactivated Minuteman and Peacekeeper assets used in testing to include refurbishment, transportation and handling, storage, as well as logistics and launch services. The RSLP program also funds general research and development efforts for launch support operations (e.g. Global Positioning System (GPS) Metric Tracking capability integration).</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$6,228 Continued storage and refurbishment of deactivated Minuteman and other missile flight test assets. (U) \$1,064 Continued performing aging surveillance-related activities on stored motors; continued performing analyses/studies to identify and evaluate potential safety-related issues affecting stored motors. (U) \$0 Continued providing launch assets and technical assistance for DoD RDT&E launches. (Funded by users.) (U) \$7,292 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$6,475 Continue storage and refurbishment of deactivated Minuteman and other missile flight test assets and perform research and development support operations as required. (U) \$1,553 Continue performing aging surveillance-related activities on stored motors; continue performing analyses/studies to identify and evaluate potential safety-related issues affecting stored motors. (U) \$500 Begin development of GPS Metric Tracking capability integration for use on RSLP launch vehicles. (U) \$15,300 Provide a mobile suite of Ballistic Missile Range Safety Technology equipment and certifies it for RSLP use.</p>											
Project 1023				Page 1 of 3 Pages				Exhibit R-2 (PE 0605860F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002			
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT			
06 - Management and Support	0605860F Rocket Systems Launch Program (RSLP)	1023			
(U) <u>A. Mission Description Continued</u>					
(U) <u>FY 2002 (\$ in Thousands) Continued</u>					
(U) \$3,790	Provide long-lead and design for a Missile Technology Demonstration launch vehicle.				
(U) \$0	Continue providing launch assets and technical assistance for DoD RDT&E launches. (Funded by users.)				
(U) \$27,618	Total				
(U) <u>FY 2003 (\$ in Thousands)</u>					
(U) \$11,485	Continue storage and refurbishment of deactivated Minuteman, Peacekeeper and other missile flight test assets and perform research and development support operations as required.				
(U) \$4,252	Continue performing aging surveillance-related activities on stored motors; continue performing analyses/studies to identify and evaluate potential safety-related issues affecting stored motors.				
(U) \$500	Continue development of GPS Metric Tracking capability integration for use on RSLP launch vehicles.				
(U) \$0	Continue providing launch assets and technical assistance for DoD RDT&E launches. (Funded by users.)				
(U) \$16,237	Total				
(U) <u>B. Budget Activity Justification</u>					
This program is in Budget Activity 06, Management and Support, since RSLP provides research and development effort and/or operations support for general research and development use.					
(U) <u>C. Program Change Summary (\$ in Thousands)</u>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		7,834	8,538	8,676	TBD
(U) Appropriated Value		7,906	27,838		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions		-55	-220		
b. Small Business Innovative Research		-432			
c. Omnibus or Other Above Threshold Reprogram		-74			
d. Below Threshold Reprogram		-36			
e. Rescissions		-17			
(U) Adjustments to Budget Years Since FY 2002 PBR				7,561	
(U) Current Budget Submit/FY 2003 PBR		7,292	27,618	16,237	TBD
Project 1023	Page 2 of 3 Pages			Exhibit R-2 (PE 0605860F)	

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002		
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605860F Rocket Systems Launch Program (RSLP)			PROJECT 1023		
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>									
(U) <u>Significant Program Changes:</u>									
FY02: \$19.3M Congressional add to fund Ballistic Missile Range Safety Technology (BMRST) program (\$15.3M) and Missile Technology Demonstration (MTD) design (\$4.0M).									
FY03: Funding added for storage, refurbishment, and aging surveillance of deactivated Peacekeeper assets.									
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN									
(U) None									
(U) Related RDT&E, AF									
PE 0604851F, ICBM - EMD, Project 5007, GPS Metric Tracking (BA-05, R-087)									
PE 0604853F, EELV (GPS Metric Tracking) (BA-05, R-088)									
(U) <u>E. Acquisition Strategy</u>									
Not Required.									
(U) <u>F. Schedule Profile</u>									
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>	
				1 2 3 4		1 2 3 4		1 2 3 4	
(U) Not Required									
Project 1023			Page 3 of 3 Pages			Exhibit R-2 (PE 0605860F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0605864F Space Test Program	PROJECT 2617
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2617 Free-Flyer Spacecraft Missions	41,451	49,318	49,882	53,851	55,325	56,347	57,419	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

(U) The Space Test Program (STP) conducts space test missions for the purpose of advancing DoD space technology and enabling future US space superiority. The program flies the maximum number of DoD experiments consistent with priority, opportunity, and funding. STP missions are the most cost effective way to flight test new space system technologies, concepts and designs, providing an inexpensive way to:

- Demonstrate the feasibility of new space systems and technologies
- Improve operational design by characterizing the space environment, event, or sensor physics proposed for an operational system/system upgrade
- Provide early operational capabilities to evaluate usefulness or quickly react to new developments
- Perform operational risk reduction through direct flight test of prototype components
- Develop a knowledge base from which to plan new and improved operational systems and system upgrades
- Develop and test advanced launch vehicle technologies and capabilities

(U) The Secretary of Defense issued a policy statement in November 1995 reaffirming STP's role as the primary provider of spaceflight for the entire DoD space research community. The USAF is the DoD steward, providing spaceflight for experiments with military relevance from the services as well as from MDA, DARPA, DoE and other government organizations. Partnership opportunities with these organizations and with NATO defense organizations further reduce the cost of these space flights to the DoD and the USAF. The Air Force requires a stable funding level and the flexibility necessary to take advantage of whatever means of spaceflight is deemed to be the most cost effective for a given experiment or complement of experiments.

(U) STP has a constantly evolving mission portfolio, whereby space experiments and technology payloads are selected for spaceflight from the most recent list approved by the DoD Space Experiments Review Board (SERB). STP is authorized to initiate new missions from the prioritized, SERB-approved list. Selection of the most appropriate spaceflight mode for a payload is dependent on optimizing the combination of SERB list priority, timing and readiness of experiments, launch opportunity, and availability of funding. STP support for these payloads includes some or all of the following: acquisition of a dedicated satellite and launch vehicle;

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support	0605864F Space Test Program	February 2002 2617
<p>(U) <u>A. Mission Description Continued</u> integration onto a host satellite, launch booster, the shuttle or space station; funding for the launch and initial operations for approximately one year. This flexible approach is essential to take advantage of inexpensive 'target of opportunity' space hardware, including operational spacecraft, and ensures the maximum amount of DoD space research is accomplished with the limited funds available.</p> <p>(U) STP may act as the DoD's office of primary responsibility for non-SERB secondary payload access to space and excess performance margin on DoD launch vehicles, on a reimbursable basis.</p>		
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$8,480	Conducted piggyback/secondary payload, mission planning and risk reduction; provide technical support, mission and program support	
(U) \$2,269	Conducted Space Shuttle payload integration, analysis, pre- and post-launch processing, and on-orbit support	
(U) \$3,851	Initiated space missions (including planning and source selection activities) using experiments from the current SERB list, such as CMEWS & STP EELV	
(U) \$26,850	Continued space experiment missions from current and prior SERB lists - e.g. : CORIOLIS, Kodiak Star, C/NOFS, TSX-5 and MightySat II.1	
(U) \$41,450	Total	
.		
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$8,972	Conduct piggyback/secondary payload, mission planning and risk reduction; provide technical support, mission and program support	
(U) \$3,300	Conduct Space Shuttle payload integration, analysis, pre- and post-launch processing, and on-orbit support	
(U) \$3,709	Initiate space missions (including planning and source selection activities) using experiments from the current SERB list e.g. CFE Sat	
(U) \$33,337	Continue space experiment missions from current and prior SERB lists- e.g.: Coriolis, CNOFS, STP-EELV	
(U) \$49,318	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$7,236	Conduct piggyback/secondary payload, mission planning and risk reduction, provide technical support, mission and program support	
(U) \$3,000	Conduct Space Shuttle payload integration, analysis, pre- and post-launch processing, and on-orbit support	
(U) \$1,258	Initiate space missions (including planning and source selection activities) using experiments from the current SERB list e.g. OMPS-AE	
(U) \$38,388	Continue space missions from current and prior SERB lists - e.g. Coriolis, CNOFS, STP-EELV	
(U) \$49,882	Total	
Project 2617	Page 2 of 4 Pages	Exhibit R-2 (PE 0605864F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE		
							February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT		
06 - Management and Support				0605864F Space Test Program			2617		
(U) B. Budget Activity Justification									
STP is in Budget Activity 6, RDT&E Management and Support, because it supports RDT&E satellite launches.									
(U) C. Program Change Summary (\$ in Thousands)									
			<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		<u>Total Cost</u>		
(U)	Previous President's Budget		46,050	50,523	54,603		TBD		
(U)	Appropriated Value		46,476	50,523					
(U)	Adjustments to Appropriated Value								
	a. Congressional/General Reductions		-325	-1,205					
	b. Small Business Innovative Research		-255						
	c. Omnibus or Other Above Threshold Reprogram		-2,334						
	d. Below Threshold Reprogram		-2,011						
	e. Rescissions		-101						
(U)	Adjustments to Budget Years Since FY 2002 PBR				-4,721				
(U)	Current Budget Submit/FY 2003 PBR		41,450	49,318	49,882		TBD		
(U) Significant Program Changes:									
FY01 funds reprogrammed to fund Spacetrack systems integration and training (-\$531K), to support SMC's long range planning activities for future space systems (-\$1M) and to reimburse Department of Treasury Judgement Fund for Rail Garrison termination costs (-\$480K). Total BTR = -\$2.011M									
FY01 funds were also reduced by (-\$2.334M) omnibus reprogramming to support higher AF priorities.									
FY03 reductions were reprogrammed to support other higher DoD priorities.									
(U) D. Other Program Funding Summary (\$ in Thousands)									
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	
(U)	Related Procurement:								
(U)	MPAF (PE 0305953F, Evolved Expendable Launch Vehicle) (BA-5, P-28)				75,000				
Funds the FY06 dedicated STP EELV flight (experiments will be selected from the SERB list). The STP EELV flight slipped out from FY05 due to procurement delays.									
Project 2617			Page 3 of 4 Pages			Exhibit R-2 (PE 0605864F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002			
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0605864F Space Test Program				PROJECT 2617		
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>	
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>		
Experiments may also be funded in other Science and Technology (S&T) PEs in Air Force, Army, Navy, DARPA, BMDO, DoE, NASA, and other programs.										
(U) <u>E. Acquisition Strategy</u>										
Not Required										
(U) <u>F. Schedule Profile</u>										
		<u>FY 2001</u>				<u>FY 2002</u>			<u>FY 2003</u>	
		1	2	3	4	1	2	3	4	
(U) Not Required										
Project 2617			Page 4 of 4 Pages				Exhibit R-2 (PE 0605864F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 0804731F GENERAL SKILL TRAINING				PROJECT 4980	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4980 Research and Development of Computer Forensic Analyst Tools	0	0	313	318	324	330	336	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> The Deputy Secretary of Defense established both the DoD Computer Forensic Laboratory (DCFL) and Defense Computer Investigations training Program (DCITP) by signing Defense Reform Initiative Directive (DRID #27) on 10 Feb 98. The Air force is designated as executive agency. To achieve this goal the DCFL Research and Development Program has the following objectives: Develop an all-purpose high performance media analysis workstation, develop decryption and password cracking/bypass tools, develop tools to detect and extract hidden (stenographic) information, and develop forensic examiners next generation intrusion analysis tools.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$30 Next Generation Intrusion and Analysis Tools (U) \$141 Next Generation Data Analysis Tools (U) \$142 High Performance Media Analysis Workstations (U) \$313 Total</p> <p>(U) <u>B. Budget Activity Justification</u> This program is in budget activity 6 - Management and Support because the funding is directed toward support of next generation media analysis workstations.</p>									
Project 4980			Page 1 of 2 Pages				Exhibit R-2 (PE 0804731F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
06 - Management and Support					0804731F GENERAL SKILL TRAINING					4980		
(U) <u>C. Program Change Summary (\$ in Thousands)</u>												
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>Total Cost</u>	
(U)	Previous President's Budget						309		313		TBD	
(U)	Appropriated Value						0					
(U)	Adjustments to Appropriated Value											
	a. Congressional/General Reductions											
	b. Small Business Innovative Research											
	c. Omnibus or Other Above Threshold Reprogram											
	d. Below Threshold Reprogram											
	e. Rescissions											
(U)	Adjustments to Budget Years Since FY 2002 PBR											
(U)	Current Budget Submit/FY 2003 PBR						0		313		TBD	
(U)	<u>Significant Program Changes:</u>											
	Established RDT&E program at DCFL											
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>												
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U)	AF RDT&E											
(U)	Other APPN											
	NA											
(U) <u>E. Acquisition Strategy</u>												
	All major contracts were awarded sole source contract due to the sensitivity of the technologies involved.											
(U) <u>F. Schedule Profile</u>												
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>			
					1	2	3	4	1	2	3	4
(U)	NA									X		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 0909980F JUDGEMENT FUND REIMBURSEMENT	PROJECT 0JFR
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
0JFR AC-130U CLAIM	7,206	10,000	20,000	45,000	100,000	0	0	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 Funding is for repayment of the Treasury Judgment Fund for contractor claims against the Air Force for the Rail Garrison and the AC-130U Gunship programs. The Air Force and contractors settled the claims under the Contract Disputes Act of 1978 and the Treasury Judgement Fund paid the judgements. The Air Force repaid the Rail Garrison settlement in FY01 and is repaying the AC-130U settlement annually from FY02 to FY05 from amounts budgeted for that purpose.

(U) **FY 2001 (\$ in Thousands)**
 (U) \$7,206 Reimburse Treasury Judgement Fund for Rail Garrison settlement
 (U) \$7,206 Total

(U) **FY 2002 (\$ in Thousands)**
 (U) \$10,000 Reimburse Treasury Judgement Fund for AC-130U settlement
 (U) \$10,000 Total

(U) **FY 2003 (\$ in Thousands)**
 (U) \$20,000 Reimburse Treasury Judgement Fund for AC-130U settlement
 (U) \$20,000 Total

(U) **B. Budget Activity Justification**
 This program element is in Budget Activity 6, RDT&E Management Support, because it funds infrastructure resources (civilians, aircraft, facilities and ranges)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
06 - Management and Support					0909980F JUDGEMENT FUND REIMBURSEMENT					0JFR		
(U) <u>C. Program Change Summary (\$ in Thousands)</u>												
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>Total Cost</u>	
(U)	Previous President's Budget						10,000		20,000		TBD	
(U)	Appropriated Value						10,000					
(U)	Adjustments to Appropriated Value											
	a. Congressional/General Reductions											
	b. Small Business Innovative Research											
	c. Omnibus or Other Above Threshold Reprogram											
	d. Below Threshold Reprogram				7,206							
	e. Rescissions											
(U)	Adjustments to Budget Years Since FY 2002 PBR											
(U)	Current Budget Submit/FY 2003 PBR				7,206		10,000		20,000		TBD	
(U)	<u>Significant Program Changes:</u>											
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>												
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>		
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U)	AF RDT&E											
(U)	Other APPN											
(U) <u>E. Acquisition Strategy</u>												
	Repayment of Treasury Judgment Fund for contractor claim against the Air Force											
(U) <u>F. Schedule Profile</u>												
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>			
					1	2	3	4	1	2	3	4
(U)	Reimburse Treasury Judgement Fund					*		X		X		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 2002
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BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 1001004F International Activities	PROJECT 4645
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4645 International Cooperative Research & Development	3,574	3,808	3,878	3,945	4,016	4,137	4,216	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**
 The mission of this program is to gain access to our Allies' best defense technologies, eliminate costly duplication of research and development (R&D) efforts, accelerate availability of defense systems, and to deploy and sustain common or interoperable USAF and Allied equipment through international cooperative research and development (ICR&D).

The USAF is party to multiple international cooperative agreements to solve common US and Allied military scientific and technological problems and to develop materiel solutions to harmonize coalition requirements. This program funds the USAF to support, develop, process, negotiate, implement, and manage these international cooperative agreements and projects in compliance with statutory reporting provisions and exacting legal statutes, fiscal constraints, technology transfer controls, intellectual property rights, third party transfer provisions, quid-pro-quo criteria, industrial base factors, and political-military interests. Included in this budget are domestic and international technology assessment teams; specialized working groups; long-term technology project (LTTP) developments; support for cooperative opportunity assessments; developing, processing, negotiating and managing international agreements; oversight of ICR&D projects; overseas R&D liaison and coordination offices; bilateral and multilateral staff talks; Engineering and Scientist Exchange Program (ESEP); and Administrative and Professional Exchange Program (APEP). Funds USAF participation in the NATO Air Force Armaments Group (NAFAG) and NATO Research and Technology Organization (RTO).

(U) **FY 2001 (\$ in Thousands)**

(U) \$100 NATO Command, Control, and Communications Agency (NC3A) - Funded the US R&D Coordination Office and administrative support for the assigned US Engineering and Technical professionals and cooperative R&D activities.

(U) \$170 ESEP/APEP - Funded the USAF execution and the management oversight of ESEP agreements. Funded approximately eight field level military and civilians from Air Force Research Laboratory (AFRL), Product Centers, Test Centers and Air Logistics Centers (ALCs) for two year tours at selected European and Asian government laboratories or other institutions. ESEP agreements are signed with 14 countries and under negotiation with 5 other countries.

(U) \$1,964 ICR&D - Funded USAF overseas R&D liaison offices. Funded management support and oversight of International Affairs Armaments Cooperation Division (SAF/IAPQ), AFMC, FCT and NATO Cooperative R&D Program. Funded USAF participation at the NATO

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
06 - Management and Support	1001004F International Activities	February 2002 4645
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
	Four-Power Forum, NAFAG, and its subgroups to promote NATO harmonization of requirements, standardization, and new cooperative R&D programs. Funded USAF participation at the US-Japan Systems and Technology Forum and Defense Cooperation Committee Meetings with Singapore and South Korea. Funded expanded technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern Europe. Partially funds technical assessments and international agreements negotiation start-up costs associated with promising cooperative R&D programs. Funded upgrades to the DoD International Agreements Management System. Funded continued development of phase 1 of the USAF CPIMS. Funded negotiation and support costs associated with the NATO AWACS Board of Directors. Funded ICOG efforts to harmonize Four-power requirements and initiate agreements to explore these opportunities.	
(U) \$400	Armaments Cooperation - Funded the USAF to process the rapidly increasing number of proposals for ICR&D agreements. Work continued on agreements developed, but not signed, during FY00 and work initiated in the following areas of interest and others resulting from prior year technology assessments: Asia: Unmanned Aerial Vehicles, Early Warning Systems, Theater Missile Defense, Satellites, Command, Control, Communication, Computer, Information and Intelligence, Effects on Global Positioning Systems; Europe: Distributed Simulation Technology, Unmanned Aerial Vehicles, Aging Aircraft, Programmable Integrated Ordinance Suite, Agent Defeat Weapon, Joint Targeting Tool, Satellites, Space, Environmental Issues; Middle East: Intelligence, Sensors, Monitoring of Chemical/Biological Warfare; Central and South America: Monitoring of Chemical/Biological Warfare, Satellites, Space, Environmental Issues.	
(U) \$200	NATO RTO - Funded USAF participation in the NATO RTO panel activities. The FY01 program of work will consist of studies, technical exchanges, and reports in the following areas: (1) Operational and Technical Studies and Analysis, (2) Modeling and Simulation, (3) Advanced System Concepts, Integration and Engineering Techniques Across the Spectrum of Platforms and Operating Environments, (4) Affordable Electronics, (5) Active and Passive Sensors, (6) Information Warfare Systems, (7) Communication and Networks, (8) Improved Performance, Affordability, and Safety of Vehicle, Platform, Propulsion, and Power Systems, (9) Optimize Performance, Health, Well Being and Safety of the Human in Operational Environments with consideration of Affordability. Continues Partnership for Peace initiative through the R&T outreach program with scientists and engineers from the former Soviet Union and Central Europe.	
(U) \$740	Air Force Material Command (AFMC) - Funded AFMC activities to identify, assess, develop, and report International Cooperative Agreements as required by statute for new and existing projects. Supported AFMC activities for the NATO Cooperative R&D Programs. Funded USAF participation in panel meetings of TTCP, Air Standardization Coordinating Committee, and NATO forums. Funded periodic bilateral/multilateral meetings to define new areas of possible cooperation and exploratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new technology exchange projects. Funded the project engineers at centers and AFRL for identifying, creating and staffing new international cooperative agreements. Funded MAJCOM staff to support and promote ICR&D throughout AFMC. Funded	
Project 4645	Page 2 of 7 Pages	Exhibit R-2 (PE 1001004F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY 06 - Management and Support	PE NUMBER AND TITLE 1001004F International Activities PROJECT 4645	
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
(U) \$3,574	support for the USAF Technology Booth at International Airshows. Funded small contracts in support of technology initiatives. Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$100	NC3A - Funds the US R&D Coordination Office and administrative support for the assigned US Engineering and Technical professionals and cooperative Research and Development activities assigned to the NC3A.	
(U) \$200	ESEP/APEP - Funds the USAF execution and the management oversight of ESEP and APEP agreements. Funds approximately eight field level military and civilian from AFMC Facilities, Product Centers, Test Centers, Logistic Centers, and the Academy for two year tours at selected European and Asian government laboratories or other institutions. ESEP agreements will be signed with 14 countries and under negotiation with 6 other countries. 1 APEP agreement will be signed, 2 other countries agreements are under negotiation.	
(U) \$2,183	ICR&D - Funds USAF overseas R&D liaison offices. Funds management support and oversight of International Affairs Armaments Cooperation Division (SAF/IAPQ), AFMC, FCT and NATO Cooperative R&D Program. Funds USAF participation at the NATO Four-Power Forum, NAFAG, and its subgroups to promote NATO harmonization of requirements, standardization, and new cooperative R&D programs. Funds USAF participation at the US-Japan Systems and Technology Forum and Defense Cooperation Committee Meetings with Singapore and South Korea. Funds expanded technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern Europe. Partially funds technical assessments and international agreements negotiation start-up costs associated with promising cooperative R&D programs. Funds upgrades to the DoD International Agreements Management System. Funds phase 1 development of the USAF International Activities Database (IADB). Funds negotiation and support costs associated with the NATO AWACS Board of Directors. Funds ICOG efforts to harmonize Four-power requirements and initiate agreements to explore these opportunities.	
(U) \$400	Armaments Cooperation - Funds the USAF to process the rapidly increasing number of proposals for ICR&D Agreements. Work will continue on agreements developed, but not signed, during FY01 and work will be initiated in the following areas: Asia: Unmanned Aerial Vehicles, Early Warning Systems, Theater Missile Defense, Satellites, Command, Control, Communication, Computer, Information and Intelligence, Effects on Global Positioning Systems; Europe: Distributed Simulation Technology, Unmanned Aerial Vehicles, Aging Aircraft, Programmable Integrated Ordinance Suite, Agent Defeat Weapon, Joint Targeting Tool, Satellites, Space, Environmental Issues; Middle East: Intelligence, Sensors, Monitoring of Chemical/Biological Warfare; Central and South America: Monitoring of Chemical/Biological Warfare, Satellites, Space, Environmental Issues.	
(U) \$175	NATO RTO - Funds USAF participation in the NATO RTO activities. The FY02 program of work will consist of studies, technical	
Project 4645	Page 3 of 7 Pages	Exhibit R-2 (PE 1001004F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	1001004F International Activities	4645
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2002 (\$ in Thousands) Continued</u>		
	exchanges, and reports in the following areas: (1) Vehicle and Platform, (2) Propulsion and Power, (3) Human Protection in Adverse Environments, (4) Operational Medicine, (5) Information Warfare and Assurance, (6) Information and Knowledge, (7) Modeling and Simulation, (8) Systems Architecture/ Mechanization, (9) Mission Management, (10) Phenomenology, and (11) Sensors, Electronics, Processing and Components. Continues Partnership for Peace initiative through the R&T outreach program with scientists and engineers from the former Soviet Union and Central Europe.	
(U) \$750	AFMC - Funds AFMC activities to identify, assess, develop, and report International Cooperative Agreements as required by statute for new and existing projects. Supports AFMC activities for the USAF NATO Cooperative R&D Programs. Funds USAF participation in panel meetings of TTCP, Air Standardization Coordinating Committee, NATO Working Groups, and other NATO forums. Funds periodic bilateral/multilateral meetings to define new areas of possible cooperation and exploratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new technology exchange projects. Funds the project engineers at centers and AFRL for identifying, creating and staffing new international cooperative agreements. Funds MAJCOM staff to support and promote ICR&D throughout AFMC. Funds support for the USAF Technology Booth at International Airshows. Funds small contracts in support of technology initiatives.	
(U) \$3,808	Total	
(U) <u>FY 2003 (\$ in Thousands)</u>		
(U) \$100	NC3A - Funds the US R&D Coordination Office and administrative support for the assigned US Engineering and Technical professionals and cooperative Research and Development activities assigned to the NC3A.	
(U) \$200	ESEP/APEP - Funds the USAF execution and the management oversight of ESEP and APEP agreements. Funds approximately eight field level military and civilian from AFMC Facilities, Product Centers, Test Centers, Logistic Centers, and the Academy for two year tours at selected European and Asian government laboratories or other institutions. ESEP agreements will be signed with 14 countries and under negotiation with 6 other countries. 1 APEP agreement will be signed, 2 other countries agreements are under negotiation.	
(U) \$2,208	ICR&D - Funds USAF overseas R&D liaison offices. Funds management support and oversight of International Affairs Armaments Cooperation Division (SAF/IAPQ), AFMC, FCT and NATO Cooperative R&D Program. Funds USAF participation at the NATO Four-Power Forum, NAFAG, and its subgroups to promote NATO harmonization of requirements, standardization, and new cooperative R&D programs. Funds USAF participation at the US-Japan Systems and Technology Forum and Defense Cooperation Committee Meetings with Singapore and South Korea. Funds expanded technology acquisition contracts and follow-on cooperative opportunities with Russia, Ukraine, and Eastern Europe. Partially funds technical assessments and international agreements negotiation start-up costs associated with promising cooperative	
Project 4645	Page 4 of 7 Pages	Exhibit R-2 (PE 1001004F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE
		February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
06 - Management and Support	1001004F International Activities	4645
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2003 (\$ in Thousands) Continued</u>		
	R&D programs. Funds upgrades to the DoD International Agreements Management System. Funds phase 2 development of the USAF IADB. Funds negotiation and support costs associated with the NATO AWACS Board of Directors. Funds ICOG efforts to harmonize Four-power requirements and initiate agreements to explore these opportunities.	
(U) \$470	Armaments Cooperation - Funds the USAF to process the rapidly increasing number of proposals for ICR&D Agreements. Work will continue on agreements developed, but not signed, during FY02 and work will be initiated in the following areas: Asia: Radar, Munitions, Space and Materials, Unmanned Aerial Vehicles, Early Warning Systems, Electronics, Satellites, Command, Control, Communications, Computer, Information and Intelligence, Distributed Simulation Technology, Aging Aircraft; Europe: Distributed Simulation Technology, Unmanned Aerial Vehicles, Aging Aircraft, Chemical/Biological Warfare Protection, Satellites, Space, Environmental Issues, Laser Technology, Airborne Radar, Human Factors, Interoperability, Command, Control, Communications, Counter Air Weapons; Middle East: Laser Technology, Human Factors; Central and South America: Aircraft Structural Integrity, Wind Tunnel Design, Materials, Environmental Analysis and Space.'	
(U) \$150	NATO RTO - Funds USAF participation in the NATO RTO activities. The FY03 program of work will consist of studies, technical exchanges, and reports in the following areas: (1) Vehicle and Platform, (2) Propulsion and Power, (3) Human Protection in Adverse Environments, (4) Operational Medicine, (5) Information Warfare and Assurance, (6) Information and Knowledge, (7) Modeling and Simulation, (8) Systems Architecture/ Mechanization, (9) Mission Management, (10) Phenomenology, and (11) Sensors, Electronics, Processing and Components. Continues Partnership for Peace initiative through the R&T outreach program with scientists and engineers from the former Soviet Union and Central Europe.	
(U) \$750	AFMC - Funds AFMC activities to identify, assess, develop, and report International Cooperative Agreements as required by statute for new and existing projects. Supports AFMC activities for the NATO Cooperative R&D Program. Funds AFMC participation in panel meetings of TTCP, Air Standardization Coordinating Committee, NATO Working Groups, and other NATO forums (excluding NAFAG and RTO). Funds periodic bilateral/multilateral meetings to define new areas of possible cooperation and exploratory visits to France, Germany, Israel, United Kingdom, Canada, and other countries on new technology exchange projects. Funds the efforts of project engineers at AFMC subordinate units to identify, create and staff new international cooperative agreements. Funds AFMC staff to support and promote ICR&D throughout AFMC and other major commands, to include training, cooperative assistance visits, conferences/workshops, and international agreement reviews. Funds support for the Defense Technology Booth at International Air and Trade shows. Funds small contracts in support of technology initiatives.	
(U) \$3,878	Total	
Project 4645	Page 5 of 7 Pages	Exhibit R-2 (PE 1001004F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)							DATE February 2002																																																																																																																										
BUDGET ACTIVITY 06 - Management and Support				PE NUMBER AND TITLE 1001004F International Activities			PROJECT 4645																																																																																																																										
<p>(U) <u>B. Budget Activity Justification</u> This program is in Budget Activity 6, Management and Support, because it provides for general R&D Management support for all aspects of ICR&D activities in the USAF.</p>																																																																																																																																	
<p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:55%;"></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">3,773</td> <td style="text-align: right;">3,825</td> <td style="text-align: right;">3,878</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">3,773</td> <td style="text-align: right;">3,825</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td style="text-align: right;">-34</td> <td style="text-align: right;">-17</td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td style="text-align: right;">-123</td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td style="text-align: right;">-42</td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">3,574</td> <td style="text-align: right;">3,808</td> <td style="text-align: right;">3,878</td> <td style="text-align: right;">TBD</td> </tr> <tr> <td colspan="9"> <p>(U) <u>Significant Program Changes:</u> N/A</p> </td> </tr> <tr> <td colspan="9"> <p>(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;"></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>FY 2005</u></th> <th style="text-align: right;"><u>FY 2006</u></th> <th style="text-align: right;"><u>FY 2007</u></th> <th style="text-align: right;"><u>Cost to</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> <tr> <td></td> <td style="text-align: right;"><u>Actual</u></td> <td style="text-align: right;"><u>Estimate</u></td> <td style="text-align: right;"><u>Estimate</u></td> <td style="text-align: right;"><u>Estimate</u></td> <td style="text-align: right;"><u>Estimate</u></td> <td style="text-align: right;"><u>Estimate</u></td> <td style="text-align: right;"><u>Estimate</u></td> <td style="text-align: right;"><u>Complete</u></td> <td></td> </tr> </thead> <tbody> <tr> <td>(U) N/A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> </td> </tr> <tr> <td colspan="9"> <p>(U) <u>E. Acquisition Strategy</u> This program element is the only source of USAF funds to identify and initiate opportunities for international armaments cooperation to (a) deploy and support common or interoperable equipment with our allies; (b) leverage USAF resources with our allies through cost sharing and economies of scale; and (c) exploit the best US and allied technologies for equipping coalition forces. We obtain these benefits only after international cooperative opportunities are identified, explored, developed, assessed and after the international agreements are negotiated and concluded. This PE provides funds to execute up-front armaments cooperation responsibilities, rationalize cooperative opportunities, assess allied technologies, and generate sound, cost-effective cooperative programs between the USAF and our international partners. Once these initiatives and programs are started as international efforts they are transferred to the appropriate technology or systems program</p> </td> </tr> <tr> <td colspan="3">Project 4645</td> <td colspan="3">Page 6 of 7 Pages</td> <td colspan="3">Exhibit R-2 (PE 1001004F)</td> </tr> </tbody></table>										<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	3,773	3,825	3,878		(U) Appropriated Value	3,773	3,825			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-34	-17			b. Small Business Innovative Research	-123				c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram	-42				e. Rescissions					(U) Adjustments to Budget Years Since FY 2002 PBR					(U) Current Budget Submit/FY 2003 PBR	3,574	3,808	3,878	TBD	<p>(U) <u>Significant Program Changes:</u> N/A</p>									<p>(U) <u>D. 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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002						
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT						
06 - Management and Support				1001004F International Activities				4645						
(U) <u>E. Acquisition Strategy Continued</u> office and are funded in their own program elements.														
(U) <u>F. Schedule Profile</u>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) -NATO C3 Agency Program Review				*				X				X		
(U) -NATO Research & Technology Board	*		*		X		X		X		X			
(U) -Bilateral Technology R&D Projects MOUs	*	*	*	*	X	X	X	X	X	X	X	X		
(U) -Cooperative R&D Projects	*	*	*	*	*	X	X	X	X	X	X	X		
(U) -FCT Prioritization Board		*				X				X				
(U) -NATO Cooperative R&D Prioritization Board			*				X				X			
(U) -R&D Loans of Defense Equipment	*	*	*	*	*	X	X	X	X	X	X	X		
(U) -Systems & Technology Forum (JA)	*		*		*		X		X		X			
(U) -Other Bilateral forums	*	*	*	*	*	X	X	X	X	X	X	X		
(U) -Data/Information Exchange Annexes	*	*	*	*	*	X	X	X	X	X	X	X		
(U) -Engineer and Scientist Exchanges	*	*	*	*	*	X	X	X	X	X	X	X		
(U) -Administrative and Professional Exchanges				*				X				X		
(U) -NATO Air Force Armaments Group	*		*		*		X		X		X			
(U) -Four-Power Air Senior National Representatives	*		*		*		X		X		X			
(U) -Four-Power Long-Term Technology Working Group		*		*		X		X		X		X		

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