

Missile Defense Agency (MDA) Fiscal Year 2013 Budget Outline

1. Executive Summary: The FY 2013 budget request is \$7.750 billion to develop and deploy sensors, interceptors, and command and control systems that constitute the Ballistic Missile Defense System (BMDS) to provide U.S. homeland defense and regional missile defense for deployed forces, allies, and friends. These resources and planned funding across the Future Years Defense Program (FYDP) will continue maintaining and improving the Ground-based Midcourse Defense (GMD) system for homeland defense. Resources and funding will also continue development and testing elements of the Phased Adaptive Approach (PAA) to deliver regional missile defense systems.

2. FY 2011 Major Achievements: MDA delivered additional capabilities to the Warfighter for homeland and regional defense:

- Thule Upgraded Early Warning Radar (UEWR) certified for operational use for missile warning, missile defense, and space surveillance missions
- Upgraded 3 emplaced Ground-Based Interceptors (GBIs) at Fort Greely, AK (FGA) as part of the GMD fleet refurbishment and upgrade program
- Fielded improved GMD Fire Control software and installed second Fire Control Node at FGA
- Completed FTG-06a Failure Review Board evaluation, a critical step toward the successful return to GMD flight testing in FY 2012
- Completed Missile Field-2 major construction
- Deployed one Aegis 3.6.1 Ballistic Missile Defense (BMD) ship, EUCOM Command and Control Battle Management and Communications (C2BMC) Spiral 6.4 and a AN/TPY-2 forward based radar in Turkey as part of European PAA (EPAA) Phase 1 capabilities to protect NATO populations and territories in Europe in 2011
- Supported negotiations for host nation agreements to deploy an AN/TPY-2 radar to Turkey and Aegis Ashore batteries to Romania and Poland
- Demonstrated NATO Active Layer Theater Ballistic Missile Defense (ALTBMD) interoperability with EUCOM C2BMC Spiral 6.4 for NATO Situational Awareness (SA) of populations and territories in Europe.
- Delivered 11 Terminal High Altitude Area Defense (THAAD) interceptors for THAAD batteries #1 and #2 and started production of THAAD batteries #3 and #4
- Converted three ships to Aegis BMD 3.6.1, completed installation of Aegis BMD 4.0.1 on one ship, second Aegis BMD 4.0.1 ship installation underway
- Manufactured 19 SM-3 Block IAs.
- Continued SM-3 Block IIA system and component Preliminary Design Reviews
- Delivered C2BMC Spiral 6.2 in CENTCOM and Spiral 6.4 to NORTHCOM, STRATCOM, and PACOM

In FY 2011 MDA completed Integrated Master Test Plan version 11.1 (February) and version 11.2 (August) and conducted several key flight tests:

- Japan Aegis BMD used SM-3 IA to intercept a Short Range Ballistic Missile (SRBM) separating payload (JFTM-04 Event 3)

- First Aegis Launch on Remote test used SM-3 IA and sensor data provided by a forward – based AN/TPY -2 radar to intercept an Intermediate Range Ballistic Missile (IRBM) (FTM-15)
- First intercept test using SM-3 Block IB failed to intercept an SRBM separating payload; successful operation of Aegis BMD 4.0.1 weapon system (FTM-16 E2)
- Initial Operational Test & Evaluation test demonstrated first simultaneous intercept of two SRBM targets by THAAD (FTT-12)

3. FY 2012 Plans: In the area of homeland defense in FY 2012, MDA intends to:

- Execute CTV-01, non-intercept GMD test, to prove out Failure Review Board findings and problem mitigations and then perform the FTG-06b intercept test as our highest priority after incorporating Failure Review Board recommendations
- Restart CE-II Exo-atmospheric Kill Vehicle (EKV) manufacturing after successful CTV-01 and begin incorporating Return to Intercept resolution findings into the GBI fleet
- Maintain 30 operational GBIs
- Complete the acquisition of ten additional GBIs on contract (above current 47 GBIs on contract) and continue GBI Fleet Upgrade program
- Complete FGA power plant integration into power grid
- Complete final integration of 14 GBI silos in Missile Field-2 at FGA
- Deploy a second Fire Direction Center Node at FGA to allow testing or exercises to be conducted while simultaneously maintaining an operational capability
- Purchase long-lead items for a new communications terminal, or GBI In-Flight Interceptor Communication System (IFCS) Data Terminal (IDT), on the east coast (Fort Drum, New York) of the United States for more effective defense against threats to the eastern United States
- Continue operations and sustainment of the Sea-based X-band (SBX) radar and develop algorithms to improve discrimination between countermeasures and reentry vehicles
- Continue operations and sustainment of Cobra Dane radar and UEWRs at Fylingdales, Thule, and Beale AFB
- Continue operations and sustainment of two forward-based AN/TPY-2 radars (Japan and Turkey)
- Begin upgrade of Clear Early Warning Radar in Alaska

For EPAA phase 1, in FY 2012 MDA intends to:

- Complete European Phased Adaptive Approach – Phase 1 (EPAA-1) missile defenses (Aegis BMD 3.6. 1 weapons system with SM-3 IA interceptors; forward-based AN/TPY -2 and SPY-1 radars; and the C2BMC Spiral 6.4 system at Ramstein AFB in Germany) capability to protect NATO populations and territories in Europe
- Execute the first simultaneous intercept of three targets by Aegis, THAAD and PATRIOT interceptors
- Deliver C2BMC Spiral 6.4 upgrade to CENTCOM
- Continue manufacture of SM-3s to maintain industrial base pending flight tests
- Deliver six Defense-Wide Procurement funded SM-3 IA interceptors and 15 Research, Development, Test and Evaluation (RDT&E) funded SM-3 IBs

MDA is developing and deploying regional missile defenses in four phases over ten years. With completion of EPAA Phase 1 missile defenses, deliveries in the next three EPAA phases will:

- Enhance medium-range missile defense by 2015 (phase 2 includes Aegis Ashore in Romania with SM-3 IB interceptors)
- Enhance intermediate-range missile defense by 2018 (phase 3 includes Aegis Ashore in Poland with SM-3 IIA interceptors), and
- Deploy early intercept capabilities against intermediate-, and non-advanced intercontinental range ballistic missiles by the 2020 timeline (phase 4 includes SM-3 IIB interceptors)

For EPAA phase 2, in FY 2012 MDA intends to:

- Continue development of Aegis BMD 5.0, which will integrate the Aegis BMD 4.0.1 capability and SM-3 IB into the Navy-developed Open Architecture computing environment and ensure Aegis BMD remains compatible with the Navy as ship modernization plans are executed
- Deliver Aegis Ashore Test Facility equipment to New Jersey for initial testing
- Acquire long lead material for the Aegis Ashore battery in Romania
- Procure 42 THAAD interceptors, six launchers and two Tactical Station Groups
- Procure two AN/TPY-2 radars for use with THAAD batteries
- Deliver 41 THAAD interceptors for THAAD batteries #1 and #2
- Operate and sustain two THAAD batteries (if necessary, may be deployed outside of the U.S.)
- Continue development of C2BMC Spiral 8.2, which will integrate BMDS Overhead Architecture (BOA) space sensors into the C2BMC Global Engagement Manager (GEM) rehosted on a new computing environment
- Award the first Foreign Military Sales contract to the United Arab Emirates for two THAAD batteries, completed in December 2011

In EPAA phase 3, MDA will supplement the Aegis Ashore site in Romania by deploying the SM-3 IIA interceptor at sea and at an Aegis Ashore site in Poland. System improvements include expanded shooter coordination and improved radar discrimination. The initial Precision Tracking Space System (PTSS) sensors in space will detect and track hostile missiles and enable earlier intercepts. In EPAA phase 4, MDA will deploy advanced discrimination technologies and the higher velocity land-based SM-3 IIB and enhanced command and control to intercept large raids of Medium Range Ballistic Missiles (MRBMs), IRBMs, and non-advanced Intercontinental Ballistic Missiles (ICBMs) early in flight. FY 2012 goals for successful progress on these latter two phases include:

- Continue development of the SM-3 IIA
- Conduct Software Systems Safety Technical Review Panel and Weapon System Explosives Safety Review Board meetings
- Conduct SM-3 Block IIA system Preliminary Design Review and component design reviews
- Continue development of Aegis BMD 5.1 and conduct first system design review
- Complete shock and vibration testing of the SM-3 IIA Mark 29 missile canister

- Complete conceptual designs and engineering models for satellite bus, optical payload and communications payload for PTSS
- Continue concept definition for the SM-3 IIB interceptor by three aerospace industry teams and prepare for source selection process to support product development beginning in FY 2014

MDA continues support and fully participates in the Israeli Cooperative Programs. During FY 2012, MDA will conduct the first intercept flight test of the SRBM Defense System, David's Sling, and will conduct our first Arrow-3 interceptor fly out to demonstrate the hardware design and functionality.

4. FY 2013 Plans: In the area of homeland defense in FY 2013, MDA intends to:

- Maintain 30 GBIs and continue GBI Fleet Upgrade program
- Deliver 5 operational GBIs
- Continue sustainment and operations of GBI missile fields: 38 total GBI silos (34 at Fort Greely, 4 at Vandenberg AFB)
- Initiate manufacturing of five additional GBIs for enhanced testing, stockpile reliability, and spares for a total of 57 GBIs
- Continue interceptor and ground systems software builds
- Initiate Fort Drum IDT construction
- Operate and maintain two forward-based AN/TPY-2 radars (Shariki, Japan and Site K, Turkey)
- Continue upgrade of Clear Early Warning Radar in Alaska to a UEWR by 2016
- Place the SBX in a limited test and contingency operations status

For regional defense, MDA plans to continue developing and deploying capabilities for the next three phases. For EPAA phase 2, MDA intends to do the following in FY 2013:

- Conduct a fully operational test to simultaneously intercept medium range and short range ballistic missiles with the Aegis, THAAD and PATRIOT interceptor systems.
- Continue to develop and build the Aegis Ashore Test Facility and Aegis Ashore battery #1
- Operate and sustain C2BMC at fielded sites
- Continue communications support for AN/TPY-2 radars and PAA C2BMC upgrades
- Operate and maintain a forward-based AN/TPY-2 radar at Site 512, Israel
- Sustain AN/TPY-2 radars with fielded THAAD batteries
- Deliver one AN/TPY-2 radar for use with THAAD battery
- Continue development of AN/TPY-2 radar software capabilities
- Sustain missile defense unique equipment
- Continue research, development, test and evaluation of the SM-3 IIA
- Procure 29 Aegis SM-3 IB interceptors
- Deliver 9 Aegis SM-3 IB interceptors
- Procure 36 THAAD interceptors
- Deliver 36 THAAD interceptors

For EPAA phases 3 and 4, in FY 2013 MDA plans to:

- Continue development of the SM-3 IIA and conduct the Critical Design Review
- Complete the Preliminary Design Review of the PTSS
- Complete preliminary designs for the PTSS spacecraft bus, optical payload and communications payload
- Complete risk reduction of critical components, continue development of the Request for Proposal package and begin source selection for the SM-3 IIB Product Development Phase to begin in early FY 2014

MDA will continue to support and fully participate in the Israeli Cooperative Programs. During FY2013 MDA will conduct a David's Sling flight test to demonstrate end game and mid-course algorithms and initiate David's Sling and Arrow-3 Low Rate Initial Production.

5. MDA Funding & Buy / Delivery Schedule:

FY2013 Appropriation Summary (\$ in millions)

Appropriation	PE#	PE Title	FY12	FY13	FY14	FY15	FY16	FY17	FY13-17
MILCON	MILCON	Aegis Ashore EPAA Phase II	0.000	157.900	0.000	0.000	0.000	0.000	157.900
		Aegis Ashore EPAA Phase III	0.000	0.000	0.000	0.000	144.452	0.000	144.452
		Clear AFS UEWR Upgrade	0.000	0.000	14.500	0.000	0.000	0.000	14.500
		Fort Drum IDT	0.000	25.900	0.000	0.000	0.000	0.000	25.900
		Planning & Design/Minor	8.368	4.548	9.806	10.825	10.109	10.454	45.742
		Von Braun Complex Phase IV	58.800	0.000	0.000	0.000	0.000	0.000	0.000
MILCON Total			67.168	188.348	24.306	10.825	154.561	10.454	388.494
Procurement	0208866C	THAAD	709.150	460.728	565.938	447.427	490.197	463.739	2428.029
		Aegis BMD	565.393	389.626	767.031	844.349	822.096	1049.430	3872.532
		BMDs AN/TPY-2 Radars	380.195	227.421	0.000	38.648	0.000	0.000	266.069
		Aegis Ashore Phase III			86.400	290.199	50.400	20.600	447.599
Procurement Total			1654.738	1077.775	1419.369	1620.623	1362.693	1533.769	7014.229
O&M	O&M	THAAD	50.405	55.679	77.932	84.550	83.745	97.242	399.148
		Aegis BMD	1.937	12.163	7.457	11.361	5.404	5.853	42.238
		BMDs Radars	151.937	192.133	212.160	234.940	249.311	247.427	1135.971
O&M Total			202.342	259.975	297.549	330.851	338.460	350.522	1577.357
RDT&E	0603175C	BMD Technology	74.920	79.975	81.388	115.427	133.742	136.654	547.186
	0603274C	Special Programs	61.371	36.685	39.736	42.726	46.310	47.213	212.670
	0603881C	BMD Terminal Defense	290.076	316.929	313.212	338.353	249.475	279.758	1497.727
	0603882C	BMD Midcourse Defense	1159.456	903.172	914.603	954.069	948.650	862.884	4583.378
	0603884C	BMD Sensors	222.075	347.012	327.342	362.520	341.780	326.095	1704.749
	0603888C	BMD Test & Targets	85.569	0.000	0.000	0.000	0.000	0.000	0.000
	0603890C	BMD Enabling Programs	415.048	362.711	339.197	373.346	395.350	394.085	1864.689
	0603891C	Special Programs	296.145	272.387	321.450	345.263	354.503	348.602	1642.205
	0603892C	BMD Aegis	988.928	992.407	960.870	950.097	1030.201	958.680	4892.255
	0603893C	STSS	96.232	51.313	45.355	32.423	34.195	35.087	198.373
	0603895C	BMDs Space Program	7.940	6.912	6.576	6.610	7.219	7.371	34.688
	0603896C	BMD C2BMC	363.640	366.552	376.116	383.055	358.431	364.725	1848.879
	0603898C	BMD Joint Warfighter	41.174	55.550	53.139	53.718	59.291	60.540	282.238
	0603901C	Directed Energy Research	49.943	46.944	47.865	47.357	52.519	54.513	249.198
	0603902C	SM-3 BLK IIB	13.443	224.077	295.248	455.373	508.356	430.239	1913.293
	0603904C	MDIOC	69.249	63.043	54.299	55.409	54.693	55.844	283.288
	0603906C	Regarding Trench	15.775	11.371	10.369	5.050	1.769	1.809	30.368
	0603907C	Sea Based X-Band Radar	176.831	9.730	9.725	9.739	9.725	9.728	48.647
	0603913C	Israeli Cooperative	235.700	99.836	95.782	96.803	103.940	106.020	502.381
	0603914C	BMD Test	487.699	454.400	420.357	446.542	373.395	421.632	2116.326
	0603915C	BMD Targets	454.357	435.747	475.175	505.591	406.931	485.950	2309.394
	0604880C	Land-Based SM-3	306.185	276.338	127.235	113.677	47.718	56.193	621.161
	0604881C	Aegis SM-3 Blk IIA	473.843	420.630	273.926	200.699	185.007	46.103	1126.365
	0604883C	Precision Tracking Space System	80.723	297.375	267.505	285.529	326.073	354.190	1530.672
	0604884C	Airborne Infrared (ABIR)	0.000	0.000	0.000	0.000	0.000	(0.000)	0.000
	0604886C	Advanced Remote Sensor Technology	0.000	58.742	35.159	18.899	18.884	18.883	150.567
	0901585C	Pentagon Reservation	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0901598C	Management Headquarters	28.908	34.855	25.473	30.838	31.482	32.798	155.446
RDT&E Total			6495.230	6224.693	5917.102	6229.113	6079.639	5895.596	30346.143
PB 2013 President's Budget Controls			8419.478	7750.791	7658.326	8191.412	7935.353	7790.341	39326.223

		PB 2013 Buy / Delivery		Prior	FY11	FY12	FY13	FY14	FY15	FY16	FY17	Total
GBI	Interceptors	RDT&E	Buy	47			5	5				57
		Delivery	36	0	2	5	4	0	4	1	52	
		Cumulative Deliveries		36	36	38	43	47	47	51	52	52
THAAD	Interceptors	RDT&E	Buy	50								50
		Delivery	1	11	38							50
	Procurement	Buy	26	22	42	36	36	36	36	36	36	270
		Delivery			3	36	24	45	36	36	36	180
		Cumulative Delivery		1	12	53	89	113	158	194	230	230
Battery Delivery	RDT&E / Procurement	Delivery	1	1		1	1	1	1	1		6
		Cumulative Delivery		1	2	2	3	4	5	6	6	6
AN/TPY-2	Radars	RDT&E / Procurement	Buy	8		2	1					11
		Delivery	7			1	2	1				11
		Cumulative Delivery		7	7	7	8	10	11	11	11	11
SM-3 Block I / IA Missiles	Interceptors	RDT&E	Buy	71								71
		Delivery	71									71
	Procurement	Buy	42	26								68
		Delivery	17	19	6		26					68
		Cumulative I/IA Deliveries		88	107	113	113	139	139	139	139	139
SM-3 Block IB Missiles	Interceptors	RDT&E	Buy	25								25
		Delivery		1	15	9						25
	Procurement	Buy			46	29	69	82	77	72	375	
		Delivery					36	39	69	82	226	
		Cumulative IB Deliveries		0	1	16	25	61	100	169	251	251
SM-3 Block IIA Missiles	Interceptors	RDT&E	Buy						22			22
		Delivery									7	7
	Procurement	Buy									12	12
		Delivery									0	0
		Cumulative IIA Deliveries								7	7	
SM-3 Block IIB Missiles	Interceptors	RDT&E	Buy									TBD
		Delivery										TBD
		Cumulative IIB Deliveries										TBD
Aegis SM-3	Interceptors	Cumulative SM-3 Deliveries		88	108	129	138	200	239	308	397	397
Aegis BMD Ships	BMD Capable Ships	RDT&E	BMD 3.6.1	20	22	24	23	19	17	16	13	13
			BMD 4.0.1		2	4	6	9	9	9	9	9
	Cumulative Ship Conversions	BMD 5.0			1	3	4	6	7	10	10	
			20	24	29	32	32	32	32	32	32	32
Aegis Ashore	Battery Delivery	RDT&E								1	1	
		Cumulative Delivery								1	1	

Aegis Ashore battery deployed by 4th quarter 2015