

Fiscal Year (FY) 2019 President's Budget
Missile Defense Agency (MDA)



February 2018

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<u>Appropriation Summary</u>	<u>FY 2017 Actuals</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2018 Estimate</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2019 Estimate</u>
O&M, Defense-Wide	\$459.6	\$8.1	\$36.4	\$504.1	\$9.0	\$-13.3	\$499.8

Description of Operations Financed:

All MDA BMD operations and maintenance support are funded through the O&M Defense-wide appropriation. Operations include Aegis BMD that provides a wide range of support activities for deployed Aegis BMD ships and Aegis Ashore facilities including Standard Missile-3 (SM-3) Sustainment, BMD Aegis Weapon System (AWS) Sustainment, and sustainment for Aegis Ashore sites; Ground-Based Midcourse for the maintenance, repair, training, supply support, sustaining engineering, network operations, integrated logistics support, configuration control, scheduling, execution control, system transitioning and performance reporting. Additionally, funding provides Base Operations Support (BOS) for facility sustainment and maintenance at the various GMD sites; Ballistic Missile Defense System (BMDS) AN/TPY-2 Radars for sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 radars including forward-based radars and Terminal High Altitude Area Defense configured radars to include supply support, repair, maintenance, modernization, transportation, parts storage, Special Tools and Test Equipment, recurring and delta training, training device maintenance, engineering support, Interactive Electronic Technical Manual (IETM) updates, software user guide updates, software revision certification and depot-level maintenance for the Forward Based Mode (FBM) missile defense unique equipment; and Terminal High Altitude Area Defense (THAAD) which supports MDA's responsibility for the sustainment of the THAAD missile defense unique or developmental items, while the U.S. Army is responsible for the operations and sustainment of the common items.

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	<u>FY 2017</u> <u>Actuals</u>	<u>FY 2018</u> <u>Estimate</u>	<u>FY 2019</u> <u>Estimate</u>
4. Administrative and Servicewide Activities	459,556	504,058	499,817
Aegis BMD Program	66,540	96,346	83,837
BMDS Radars Program	192,873	191,055	176,143
Ground-Based Midcourse Program	131,081	137,896	147,229
THAAD Program	69,062	78,761	92,608
Total Operation and Maintenance, Defense-Wide	459,556	504,058	499,817

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	<u>FY 2017</u> <u>Actuals</u>	<u>FY 2018</u> <u>Estimate</u>	<u>FY 2019</u> <u>Estimate</u>
4. Administrative and Servicewide Activities	459,556	504,058	499,817
Aegis BMD Program	66,540	96,346	83,837
BMDS Radars Program	192,873	191,055	176,143
Ground-Based Midcourse Program	131,081	137,896	147,229
THAAD Program	69,062	78,761	92,608
Total Operation and Maintenance, Defense-Wide	459,556	504,058	499,817

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	<u>FY 2017</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2018</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2019</u>
	<u>Program</u>	<u>Growth</u>	<u>Growth</u>	<u>Growth</u>	<u>Program</u>	<u>Growth</u>	<u>Growth</u>	<u>Growth</u>	<u>Program</u>
		<u>Percent</u>				<u>Percent</u>			
<u>Travel</u>									
308 Travel of Persons	192	1.70%	3	146	341	1.80%	6	-342	5
399 Total Travel	192		3	146	341		6	-342	5
<u>Supplies & Materials</u>									
401 DLA Energy (Fuel Products)	1,079	11.53%	124	-96	1,107	-0.40%	-4	-1,103	0
499 Total Supplies & Materials	1,079		124	-96	1,107		-4	-1,103	0
<u>Transportation</u>									
771 Commercial Transport	5,542	1.70%	94	-3,693	1,943	1.80%	35	3,920	5,898
799 Total Transportation	5,542		94	-3,693	1,943		35	3,920	5,898
<u>Other Purchases</u>									
912 Rental Payments to GSA (SLUC)	244	1.70%	4	-1	247	1.80%	4	6	257
913 Purchased Utilities (Non-Fund)	3,019	1.70%	51	-106	2,964	1.80%	53	-324	2,693
914 Purchased Communications (Non-Fund)	0	1.70%	0	1,243	1,243	1.80%	22	-673	592
915 Rents (Non-GSA)	238	1.70%	4	2	244	1.80%	4	-248	0
917 Postal Services (U.S.P.S)	0	1.70%	0	5	5	1.80%	0	-5	0
920 Supplies & Materials (Non-Fund)	28,693	1.70%	488	-6,038	23,143	1.80%	417	17,880	41,440
922 Equipment Maintenance By Contract	262,751	1.70%	4,467	-77,555	189,663	1.80%	3,414	131,827	324,904
923 Facilities Sust, Rest, & Mod by Contract	27,578	1.70%	469	110,541	138,588	1.80%	2,495	-108,350	32,733
925 Equipment Purchases (Non-Fund)	1,513	1.70%	26	14,646	16,185	1.80%	291	-12,764	3,712
930 Other Depot Maintenance (Non-Fund)	28,930	1.70%	492	2,969	32,391	1.80%	583	-13,731	19,243
932 Mgt Prof Support Svcs	10,807	1.70%	184	1,169	12,160	1.80%	219	-11,366	1,013
933 Studies, Analysis & Eval	0	1.70%	0	5,243	5,243	1.80%	94	-4,867	470
934 Engineering & Tech Svcs	0	1.70%	0	2,588	2,588	1.80%	47	9,656	12,291

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	FY 2017	Price			FY 2018	Price			FY 2019
	<u>Program</u>	<u>Growth</u>	<u>Price</u>	<u>Program</u>	<u>Program</u>	<u>Growth</u>	<u>Price</u>	<u>Program</u>	<u>Program</u>
		<u>Percent</u>	<u>Growth</u>	<u>Growth</u>		<u>Percent</u>	<u>Growth</u>	<u>Growth</u>	
937 Locally Purchased Fuel (Non-Fund)	1,510	11.53%	174	-164	1,520	-0.40%	-6	-494	1,020
987 Other Intra-Govt Purch	47,247	1.70%	803	-26,541	21,509	1.80%	387	21,935	43,831
989 Other Services	11,102	1.70%	189	13,686	24,977	1.80%	450	-15,712	9,715
990 IT Contract Support Services	29,111	1.70%	495	-1,609	27,997	1.80%	504	-28,501	0
999 Total Other Purchases	452,743		7,846	40,078	500,667		8,978	-15,731	493,914
Total	459,556		8,067	36,435	504,058		9,015	-13,256	499,817

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	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Change FY 2018/2019</u>
Contractor FTEs (Total)	964	986	1,014	28

Personnel Summary Explanations:

The FY 2017 to FY 2018 growth provides for maintenance of increasing quantity of in-service missiles and computer programs, and installation of upgrades and reliability improvements such as SM-3 IB Threat Upgrade (TU), G-switch and Third Stage Rocket Motor (TSRM) upgrades; Increased maintenance and sustainment of ten additional GBIS fielded at Fort Greely, AK; and transition of the 7th THAAD battery to an operational status which increases operational tempo. In addition, the Army Global Posture Strategy requires a deployment of a second OCONUS THAAD battery, increasing costs to support the Army mission.

The FY 2018 to FY 2019 growth reflects the increase in sustainment of the GMD operational system to address the implementation and sustainment of DoD cybersecurity mandates, which include the transition to cyber security Risk Management Framework (RMF), continuous monitoring, equipment obsolescence upgrades, and device hardening. Seventeen additional contractor FTEs are required for this Cyber effort. The increase also provides an increase of five FTEs in sustainment and maintenance of THAAD system software.

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FY 2018 President's Budget Request (Amended, if applicable)	<u>TOTAL</u> 504,058
1. Congressional Adjustments	
a. Distributed Adjustments	
b. Undistributed Adjustments	
c. Adjustments to Meet Congressional Intent	
d. General Provisions	
FY 2018 Appropriated Amount	504,058
2. War-Related and Disaster Supplemental Appropriations	
3. Fact-of-Life Changes	
FY 2018 Baseline Funding	504,058
4. Reprogrammings (Requiring 1415 Actions)	
Revised FY 2018 Estimate	504,058
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings	
FY 2018 Normalized Current Estimate	504,058
6. Price Change	9,015
7. Functional Transfers	
8. Program Increases	
a. Annualization of New FY 2018 Program	
b. One-Time FY 2019 Increases	
c. Program Growth in FY 2019	
1) THAAD Program	12,441
2) Ground-Based Midcourse Defense Program	6,854
9. Program Decreases	

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	<u>TOTAL</u>
a. Annualization of FY 2018 Program Decreases	
b. One-Time FY 2018 Increases	
c. Program Decreases in FY 2019	
1) BMDS Radars Program	-18,322
2) Aegis BMD SM-3 Program	-8,505
3) Aegis BMD Program	-5,724
FY 2019 Budget Request	499,817

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**Operation and Maintenance, Defense-Wide Summary (\$ in thousands)
Budget Activity (BA) 1: Operating Forces
Subactivity Group 11A**

	FY 2017	Price	Program	FY 2018	Price	Program	FY 2019
	<u>Actuals</u>	<u>Change</u>	<u>Change</u>	<u>Estimate</u>	<u>Change</u>	<u>Change</u>	<u>Estimate</u>
MDA	459,556	8,067	36,435	504,058	9,015	-13,256	499,817

I. Description of Operations Financed: Provides the following Ballistic Missile Defense (BMD) operations and maintenance support:

A. Aegis Ballistic Missile Defense (BMD). Funding provides a wide range of support activities for deployed Aegis BMD ships and Aegis Ashore facilities including Standard Missile (SM-3) sustainment, BMD Aegis Weapons System (AWS) sustainment, and sustainment for Aegis Ashore sites.

The SM-3 sustainment program includes the recertification/repair of missiles, installation of software and hardware updates, demilitarization of SM-3 missiles, modeling and simulation and logistics efforts. Also provides missile first destination transportation, transportation ballistic barrier maintenance, spares replenishment and operational fleet support.

The BMDS AWS sustainment program provides technical and engineering services for in-service BMD ships and sites, along with infrastructure maintenance for BMDS platforms executing BMD test missions, to ensure the in-service BMD AWS baselines maintain the directed operational availability. BMD AWS sustainment includes: BMD Engineering Agent technical support and operational analysis for BMD units; engineering reach-back services supporting casualty correction, issues, and improvements; maintenance, certification, and delivery of BMD AWS computer program updates to the Fleet; Aegis software maintenance corrections in the common source library; test site infrastructure and maintenance; integrated logistics support of BMD unique parts and technical documentation; review and

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I. Description of Operations Financed (cont.)

implementation of updated maintenance concepts; diminishing manufacturing sources (DMS) and obsolete materiel surveillance, identification, and resolution; maintenance actions on BMD ships and sites participating in MDA sponsored test missions.

Provides engineering services for Aegis Ashore Host Nation repairs and rework required post construction activities in support of site transition. Includes Host Nation planning yard activities to track modernization, update the Aegis Ashore technical data package to ensure core Aegis Ashore Deckhouse attributes are maintained, development of required test procedures to support on-site installation and checkout (INCO) and system operations verification testing (SOVT) and provides updates to training, warfighter technical publications, and the initial outfitting requirements for maintenance and logistics materiel.

B. Ground Based Midcourse. Funding provides maintenance, repair, training, supply support, sustaining engineering, network operations, integrated logistics support, configuration control, scheduling, execution control, system transitioning, and performance reporting. Additionally, funding provides Base Operations Support (BOS) for facility sustainment and maintenance at the various GMD sites.

C. Ballistic Missile Defense Systems (BMDS) Radars. Sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Forward-Based and Terminal High Altitude Area Defense (THAAD) configured Terminal Mode radars to include supply support, repair, maintenance, modernization, transportation, parts, storage, special tools and test equipment, recurring and delta training, technical interface, training device maintenance, engineering support, interactive electronic technical manual (IETM) updates, software user guide updates, software revision certification, and depot-level maintenance for missile defense unique equipment. Funding also provides Electronic

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I. Description of Operations Financed (cont.)

Equipment Unit (EEU) retrofits at Letterkenny Army Depot to replace obsolete equipment, incorporate updates to upgrade servers, and enhance radar capabilities. Additionally, funding provides sustainment unique to the Missile Defense mission for the Upgraded Early Warning Radar (UEWR)/COBRA DANE Radar, which MDA sustains and operates in conjunction with the U.S. Air Force.

D. Terminal High Altitude Area Defense (THAAD). MDA is responsible for the sustainment for the THAAD missile defense unique or development items, while the U.S. Army is responsible for the operations and sustainment of the common items. MDA funding provides sustainment for all fielded THAAD Batteries, ensures THAAD assets are properly maintained and crews are trained to meet Combatant Commanders needs including:

1. Field and sustainment level supply, maintenance, modernization, hazardous materials/waste disposal, and depot-level maintenance for THAAD missile defense unique equipment.
2. Spares, Interceptor spares, repair parts, and maintenance capability at the location of each THAAD battery.
3. Engineering support for the THAAD missile defense unique equipment.
4. Deployment software support for fielded software, to include deficiency report review, error correction, incremental capability improvements, and hardware/system interface compatibility maintenance.
5. Missile transportation and handling from the missile storage location to the site of the THAAD launchers.

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I. Description of Operations Financed (cont.)

6. IETM updates software users' guide updates, and software revision certification.
7. Maintenance and upkeep for all THAAD training devices.
8. Supply, maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades.
9. Special tools and test equipment for the organic depot.
10. RESET program.

II. Force Structure Summary:

N/A

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III. Financial Summary (\$ in thousands)

	FY 2018						
			Congressional Action				
	FY 2017	Budget				Current	FY 2019
A. BA Subactivities	Actuals	Request	Amount	Percent	Appropriated	Estimate	Estimate
4. Administrative and Servicewide Activities	459,556	504,058	0	0.0	0	504,058	499,817
Aegis BMD Program	66,540	96,346	0	0.0	0	96,346	83,837
BMDS Radars Program	192,873	191,055	0	0.0	0	191,055	176,143
Ground-Based Midcourse Program	131,081	137,896	0	0.0	0	137,896	147,229
THAAD Program	69,062	78,761	0	0.0	0	78,761	92,608
Total	459,556	504,058	0	0.0	0	504,058	499,817

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III. Financial Summary (\$ in thousands)

	Change <u>FY 2018/FY 2018</u>	Change <u>FY 2018/FY 2019</u>
B. <u>Reconciliation Summary</u>		
Baseline Funding	504,058	504,058
Congressional Adjustments (Distributed)		
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	504,058	
Fact-of-Life Changes (2018 to 2018 Only)		
Subtotal Baseline Funding	504,058	
Supplemental		
Reprogrammings		
Price Changes		9,015
Functional Transfers		
Program Changes		-13,256
Current Estimate	504,058	499,817
Less: Wartime Supplemental		
Normalized Current Estimate	504,058	

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III. Financial Summary (\$ in thousands)

<u>C. Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
FY 2018 President's Budget Request (Amended, if applicable)		504,058
1. Congressional Adjustments		
a. Distributed Adjustments		
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2018 Appropriated Amount		504,058
2. War-Related and Disaster Supplemental Appropriations		
3. Fact-of-Life Changes		
FY 2018 Baseline Funding		504,058
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2018 Estimate		504,058
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings		
FY 2018 Normalized Current Estimate		504,058
6. Price Change		9,015
7. Functional Transfers		
8. Program Increases		19,295
a. Annualization of New FY 2018 Program		
b. One-Time FY 2019 Increases		
c. Program Growth in FY 2019		
1) THAAD Program	12,441	
+\$6,142 Growth reflects the transition of sustainment and maintenance of THAAD system software and THAAD Portable Planner from RDT&E to O&M for the systems transitioned to sustainment.		
+\$3,753 Growth reflects increased OCONUS sustainment requirements to meet the increased THAAD operating		

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III. Financial Summary (\$ in thousands)

C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
tempo required for the current Army Global Posture Strategy.		
+ \$2,104 Growth reflects the increase in interceptor recertifications (required every 10 years after initial delivery) for interceptors to remain operationally available. The recertification extends the service life of the aging interceptor inventory.		
+ \$442 Growth reflects increased sustainment for THAAD interceptor and peculiar hardware transportation to support program missions. (FY 2018 Baseline: \$78,761 thousand; +0 FTEs)		
2) Ground-Based Midcourse Defense Program	6,854	
+ \$3,603 Growth reflects the increase in GMD operational weapon system sustainment to implement and sustain DoD cybersecurity mandates, including equipment obsolescence upgrades and device hardening.		
+ \$3,251 Growth addresses critical GMD weapon system Facility Sustainment, Restoration, and Modernization (FSRM) projects at GMD sites to include Fort Greely, AK, Vandenberg AFB, CA, Eareckson Air Station, AK, and Fort Drum, NY. (FY 2018 Baseline: \$137,896 thousand; +0 FTEs)		
9. Program Decreases		-32,551
a. Annualization of FY 2018 Program Decreases		
b. One-Time FY 2018 Increases		
c. Program Decreases in FY 2019		

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III. Financial Summary (\$ in thousands)

C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
1) BMDs Radars Program	-18,322	
-\$8,164 Decrease due to completion of one-time FY 2018 COBRA DANE sustainment costs to redesign and purchase obsolete or unreliable components to extend the service life of the radar.		
-\$10,158 Decrease reflects reduction in TPY-2 spares requirements resulting from reduced component level failure rates and improved reliability. (FY 2018 Baseline: \$191,055 thousand; +0 FTEs)		
2) Aegis BMD SM-3 Program	-8,505	
Decrease reflects fewer required SM-3 missile recertifications due to ship and missile availability, and also FY 2018 completion of non-recurring engineering efforts for the Third Stage Rocket Motor Nozzle replacement. (FY 2018 Baseline: \$59,713 thousand; +0 FTEs)		
3) Aegis BMD Program	-5,724	
Decrease reflects less software maintenance requirements in FY 2019 based on the accelerated certification of Aegis BMD 4.1. (FY 2019 budget supports 100 software corrections biennially vice the FY 2018 request for 200 software corrections annually.) (FY 2018 Baseline: \$32,237 thousand; +0 FTEs)		
FY 2019 Budget Request		499,817

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IV. Performance Criteria and Evaluation Summary:

	FY 2017 <u>Estimate</u>	FY 2018 <u>Estimate</u>	FY 2019 <u>Estimate</u>
1. Operational Support	459,556	504,058	499,817
Aegis Program	66,540	96,346	83,837
Ground Base Midcourse	131,081	137,896	147,229
BMDS Radars	192,873	191,055	176,143
THAAD Program	69,062	78,761	92,608
Total Operations and Maintenance, Defense Wide	459,556	446,975	499,817

The MDA Ballistic Missile Defense (BMD) mission is to deliver an enduring, operationally effective and supportable BMD capability to defend the nation, deployed forces, friends and allies.

A. Aegis BMD. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U. S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy short-range, medium-range, and intermediate-range ballistic missiles in the midcourse phase of flight and shorter range missile in terminal phase. Aegis BMD also provides a long range surveillance and track (LRS&T) capability to the BMDS. By the end of FY 2019, there will be 42 BMDS capable ships.

B. Ground-Based Midcourse (GMD). The GMD fielded weapon system is under the command of U.S. Northern Command (NORTHCOM) and is operated by Soldiers from the 100th Missile Defense Brigade (five crews) headquartered at Colorado Springs, Colorado, and its 49th Missile Defense Battalion (five crews) at Fort Greely, Alaska (FGA). In FY 2019, MDA

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IV. Performance Criteria and Evaluation Summary:

will support 44 operationally deployed GBIs located at FGA (40 GBIs) and Vandenberg Air Force Base, California (VAFB) (4 GBIs). Each GBI delivers a single Exoatmospheric Kill Vehicle (EKV) to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GMD Fire Control System consists of redundant fire control nodes at FGA (two each) and the Missile Defense Integration and Operations Center (MDIOC) (two each). In-Flight Interceptor Communications System (IFICS) Data Terminals (IDTs) are currently located at FGA; VAFB; Eareckson Air Station, Alaska (EAS); and Fort Drum, New York.

C. Ballistic Missile Defense Systems (BMDS) Radars Program. MDA sustains 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars. Five Forward-Based radars at fixed radar sites operate continuously 24 hours a day, 7 days a week, 365 days a year. Seven radars operate in Terminal Mode when integrated with the THAAD battery. The operational tempo is met utilizing military personnel and contractor logistics support (CLS) to operate and maintain the radar.

D. Terminal High Altitude Area Defense (THAAD). Army force structure for THAAD is currently set at seven batteries with six launchers operated by 95 Soldiers. The battery is organized to conduct 120-day deployments (45 days of entry operations and 75 days of 17-hour/day combat operations). During actual deployments, batteries have been operating at a 365-day, 24/7 operational tempo, with increased CLS costs. This increased tempo has been sustained through the increase of appropriate attachments and support.

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V. <u>Personnel Summary</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Change FY 2017/ FY 2018</u>	<u>Change FY 2018/ FY 2019</u>
<u>Contractor FTEs (Total)</u>	<u>964</u>	<u>986</u>	<u>1,014</u>	<u>22</u>	<u>28</u>

The FY 2018 to FY 2019 growth reflects the increase in sustainment of the GMD operational system to address the implementation and sustainment of DoD cybersecurity mandates, which include the transition to cyber security Risk Management Framework (RMF), continuous monitoring, equipment obsolescence upgrades, and device hardening. Seventeen additional contractor FTEs are required for this Cyber effort. The increase also provides an increase of five FTEs in sustainment and maintenance of THAAD system software. The FY 2018 FTE number was erroneously under-reported and did not include +6 FTEs associated with the Aegis BMD Program.

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VI. OP 32 Line Items as Applicable (Dollars in thousands):

		Change			Change		
<u>OP 32 Line</u>	<u>FY 2017</u>	<u>FY 2017/FY 2018</u>		<u>FY 2018</u>	<u>FY 2018/FY 2019</u>		<u>FY 2019</u>
	<u>Actuals</u>	<u>Price</u>	<u>Program</u>	<u>Estimate</u>	<u>Price</u>	<u>Program</u>	<u>Estimate</u>
308 Travel of Persons	192	3	146	341	6	-342	5
399 Total Travel	192	3	146	341	6	-342	5
401 DLA Energy (Fuel Products)	1,079	124	-96	1,107	-4	-1,103	0
499 Total Supplies & Materials	1,079	124	-96	1,107	-4	-1,103	0
771 Commercial Transport	5,542	94	-3,693	1,943	35	3,920	5,898
799 Total Transportation	5,542	94	-3,693	1,943	35	3,920	5,898
912 Rental Payments to GSA (SLUC)	244	4	-1	247	4	6	257
913 Purchased Utilities (Non-Fund)	3,019	51	-106	2,964	53	-324	2,693
914 Purchased Communications (Non-Fund)	0	0	1,243	1,243	22	-673	592
915 Rents (Non-GSA)	238	4	2	244	4	-248	0
917 Postal Services (U.S.P.S)	0	0	5	5	0	-5	0
920 Supplies & Materials (Non-Fund)	28,693	488	-6,038	23,143	417	17,880	41,440
922 Equipment Maintenance By Contract	262,751	4,467	-77,555	189,663	3,414	131,827	324,904
923 Facilities Sust, Rest, & Mod by Contract	27,578	469	110,541	138,588	2,495	-108,350	32,733
925 Equipment Purchases (Non-Fund)	1,513	26	14,646	16,185	291	-12,764	3,712
930 Other Depot Maintenance (Non-Fund)	28,930	492	2,969	32,391	583	-13,731	19,243
932 Mgt Prof Support Svcs	10,807	184	1,169	12,160	219	-11,366	1,013
933 Studies, Analysis & Eval	0	0	5,243	5,243	94	-4,867	470
934 Engineering & Tech Svcs	0	0	2,588	2,588	47	9,656	12,291
937 Locally Purchased Fuel (Non-Fund)	1,510	174	-164	1,520	-6	-494	1,020
987 Other Intra-Govt Purch	47,247	803	-26,541	21,509	387	21,935	43,831
989 Other Services	11,102	189	13,686	24,977	450	-15,712	9,715
990 IT Contract Support Services	29,111	495	-1,609	27,997	504	-28,501	0
999 Total Other Purchases	452,743	7,846	40,078	500,667	8,978	-15,731	493,914
Total	459,556	8,067	36,435	504,058	9,015	-13,256	499,817

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* OP-32 lines were realigned in FY 2019 to correct classification categories that were inaccurately reported in FY 2018 and more accurately reflect planned expenditures. The following breakout provides further traceability to OP-5 program increases and decreases to their affected OP-32 lines.

-\$111,000 thousand from line 923 Facilities, Sustainment, Restoration, and Modernization by Contract was realigned to line 922

Equipment Maintenance by Contract to correct the FY 2018 coding error.

-\$13,731 thousand from line 930 Depot Maintenance was realigned to line 922 Equipment Maintenance by Contract to properly reflect the correct level of maintenance.

-\$13,237 thousand from line 989 Other Services and -\$14,000 thousand from line 990 IT Services were realigned to line 987 Intra-Govt Purchase to properly capture items in the right OP-32 line.

-\$12,764 thousand from 925 Equipment Purchases was realigned to 920 Supplies to properly capture items in the right OP-32 line.

-\$14,501 thousand from line 990 IT Services was realigned to +9,000 thousand line 922 Equipment Maintenance by Contract and +5,501 thousand to line 920 Supplies to properly capture the work effort in the right OP-32 line.

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CONTRACT SERVICES FUNDING
(\$ in Millions)

Line	By PB/OP-32 Inflation Category Code	FY 2017	FY 2018	FY 2018	FY 2019	FY 2019
		Base & OCO	Base	OCO	Base	OCO
		<u>Actual</u>	<u>Request</u>	<u>Request</u>	<u>Request</u>	<u>Request</u>
914	Purchased Communications (Non-Fund)	0	1	0	1	0
	Total 23.1 - Communications, Utilities, and Misc. Charges	0	1	0	1	0
932	Mgmt and Professional Support Services	11	12	0	1	0
933	Studies, Analysis, and Evaluation Services				1	
934	Engineering and Technical Services	0	3	0	12	0
	Total 25.1 - Advisory and Assistance Services	11	15	0	14	0
989	Other Contracts	11	25	0	10	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	11	25	0	10	0
987	Other Intra-Government Purchases	47	25	0	43	0
	Total 25.3 - Other Goods and Services from Federal Sources	47	25	0	43	0
923	Facility Maintenance	28	139	0	33	0
	Total 25.4 - Operation and Maintenance of Facilities	28	139	0	33	0
985	Research and Development Contracts					
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	263	190	0	325	0
930	Other Depot Maintenance (Non-Fund)	29	32	0	19	0
990	IT Contract Support Services	29	28	0	0	0
	Total 25.7 - Operation and Maintenance of Equipment	321	250	0	344	0
964	Subsistence Contracts					
	Total 25.8- Subsistence and Support of Persons	0	0	0	0	0
	Total	418	455	0	445	0

Source: Program Resources Collection Process as of 2 Jan 2018

Numbers may not add due to rounding

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Contractor Full-Time Equivalents

Line	By PB/OP-32 Inflation Category Code	FY 2017 Base & OCO <u>Actual</u>	FY 2018 Base <u>Request</u>	FY 2018 OCO <u>Request</u>	FY 2019 Base <u>Request</u>	FY 2019 OCO <u>Request</u>
914	Purchased Communications (Non-Fund)	0	4	0	4	0
	Total 23.1 - Communications, Utilities and Misc. Charges	0	4	0	4	0
932	Mgmt and Professional Support Services	29	29	0	6	0
933	Studies, Analysis, and Evaluation Services				2	
934	Engineering and Technical Services	0	27		32	
	Total 25.1 - Advisory and Assistance Services	29	56	0	40	0
989	Other Contracts	11	31	0	38	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	11	31	0	38	0
987	Other Intra-Government Purchases	26	1	0	15	0
	Total 25.3 - Other Goods and Services from Federal Sources	26	1	0	15	0
923	Facility Maintenance	376	371	0	101	0
	Total 25.4 - Operation and Maintenance of Facilities	376	371	0	101	0
985	Research and Development Contracts					
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	468	468	0	775	0
930	Other Depot Maintenance (Non-Fund)	22	23		41	
990	IT Contract Support Services	32	32		0	0
	Total 25.7 - Operation and Maintenance of Equipment	522	523	0	816	0
	Total	964	986	0	1,014	0

Source: Program Resources Collection Process as of 2 Jan 2018

Numbers may not add due to rounding

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CONTRACT SERVICES

Defense-Wide Missile Defense Agency
Operation and Maintenance
Justification Narrative

Description of Services Financed:

Provides the following Ballistic Missile Defense (BMD) operations and maintenance support:

A. Aegis BMD. Funding provides a wide range of support activities for deployed Aegis BMD ships and Aegis Ashore facilities including Standard Missile-3 (SM-3) sustainment, BMD Aegis Weapon System (AWS) sustainment, and sustainment for Aegis Ashore sites.

The SM-3 sustainment program includes the recertification/repair of missiles, installation of software and hardware updates, demilitarization of SM-3 missiles, modeling and simulation and logistics efforts. Also provides missile first destination transportation, transportation ballistic barrier maintenance, spares replenishment and operational fleet support.

The BMDS AWS sustainment program provides technical and engineering services for in-service BMD ships and sites, along with infrastructure maintenance for BMDS platforms executing BMD test missions, to ensure the in-service BMD AWS baselines maintain the directed operational availability. BMD AWS sustainment includes: BMD Engineering Agent technical support and operational analysis for BMD units; engineering reach-back services supporting casualty correction, issues, and improvements; maintenance, certification, and delivery of BMD AWS computer program updates to the Fleet; Aegis software maintenance corrections in the common source library; test site infrastructure and maintenance; integrated logistics support of BMD unique parts and technical documentation; review and implementation of updated maintenance concepts;

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diminishing manufacturing sources (DMS) and obsolete materiel surveillance, identification, and resolution; maintenance actions on BMD ships and sites participating in MDA sponsored test missions.

Provides engineering services for Aegis Ashore Host Nation repairs and rework required post construction activities in support of site transition. Includes Host Nation planning yard activities to track modernization, update the Aegis Ashore technical data package to ensure core Aegis Ashore Deckhouse attributes are maintained, development of required test procedures to support on-site installation and checkout (INCO) and system operations verification testing (SOVT) and provides updates to training, warfighter technical publications, and the initial outfitting requirements for maintenance and logistics materiel.

B. Ground-Based Midcourse. Funding provides maintenance, repair, training, supply support, sustaining engineering, network operations, integrated logistics support, configuration control, scheduling, execution control, system transitioning and performance reporting. Additionally, funding provides Base Operations Support (BOS) for facility sustainment and maintenance at the various GMD sites.

C. Ballistic Missile Defense System (BMDS) AN/TPY-2 Radars. Sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Forward-Based and Terminal High Altitude Area Defense (THAAD) configured Terminal Mode radars to include supply support, repair, maintenance, modernization, transportation, parts, storage, special tools and test equipment, recurring and delta training, technical interface, training device maintenance, engineering support, interactive electronic technical manual (IETM) updates, software user guide updates, software revision certification, and depot-level maintenance for missile defense unique equipment. Funding also provides Electronic Equipment Unit (EEU) retrofits at Letterkenny Army Depot to replace obsolete equipment, incorporate updates to upgrade servers, and enhance radar capabilities. Additionally, funding provides sustainment unique to the Missile Defense mission for the Upgraded Early Warning Radar (UEWR)/COBRA DANE Radar, which MDA sustains and operates in conjunction with the U.S. Air Force.

D. Terminal High Altitude Area Defense (THAAD). MDA is responsible for the sustainment of the THAAD missile defense unique or developmental items, while the U. S. Army is responsible for the operations and sustainment of the common items. Funding provides sustainment for all fielded THAAD Batteries, ensures THAAD assets are properly maintained and crews are trained to meet Combatant Commanders needs including:

- 1.) Field and sustainment level supply, maintenance, modernization, hazardous materials/waste disposal, and

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depot-level maintenance for THAAD missile defense unique equipment. 2.) Spares, Interceptor spares, repair parts, and maintenance capability at the location of each THAAD battery. 3.) Engineering support for the THAAD missile defense unique equipment. 4.) Deployment software support for fielded software, to include deficiency report review, error correction, incremental capability improvements, and hardware/systems interface compatibility maintenance. 5.) Missile transportation and handling from the missile storage location to the site of the THAAD launchers. 6.) IETM updates software users' guide updates, and software revision certification. 7.) Maintenance and upkeep for all THAAD training devices. 8.) Supply, maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades. 9.) Special Tools and Test Equipment for the organic depot. 10.) RESET program.

Reporting Limitations:

N/A

Summary of Increases/Decreases:

A. Aegis BMD program decrease reflects fewer required SM-3 missile recertifications due to ship and missile availability, and also FY 2018 completion of non-recurring engineering efforts for the Third Stage Rocket Motor Nozzle replacement and less software maintenance requirements in FY 2019 based on the accelerated certification of Aegis BMD 4.1.

B. Ground-Based Midcourse program growth reflects the increase in sustainment of the GMD operational system to address the implementation and sustainment of DoD cybersecurity mandates, which include the transition to cyber security Risk Management Framework (RMF), continuous monitoring, equipment obsolescence upgrades, and device hardening.

C. Ballistic Missile Defense Systems (BMDS) Radars program decrease is due to completion of COBRA DANE sustainment costs to redesign obsolete or unreliable components to extend

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the service life of COBRA DANE and reduced operations and maintenance spare purchases due to improvements in maintainability.

D. THAAD program growth is due to the transition of sustainment and maintenance of THAAD system software and THAAD Portable Planner to U. S. Army Aviation and Missile Research Development and Engineering Center (AMRDEC) with an increase in staff to cover system level testing.

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<u>Appropriation/Fund</u>	<u>FY 2017</u> <u>Actuals</u>	<u>FY 2018</u> <u>Estimate</u>	<u>FY 2019</u> <u>Estimate</u>
I. Management & Professional Support Services			
FFRDC Work	281	305	305
Non-FFRDC Work	<u>10,526</u>	<u>11,855</u>	<u>708</u>
Subtotal	10,807	12,160	1,013
II. Studies, Analysis & Evaluations			
FFRDC Work	0	0	0
Non-FFRDC Work	<u>0</u>	<u>5,243</u>	<u>470</u>
Subtotal	0	5,243	470
III. Engineering & Technical Services			
FFRDC Work	0	1,367	6,492
Non-FFRDC Work	<u>0</u>	<u>1,221</u>	<u>5,799</u>
Subtotal	0	2,588	12,291
TOTAL			
FFRDC Work	281	1,672	6,797
Non-FFRDC Work	10,526	18,319	6,977
Reimbursable	0	0	0

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Explanation of Funding Changes (FY 2017 to FY 2018):

The FY 2017 to FY2018 growth provides additional deployment software support for THAAD fielded software and delineates sustainment support from all other THAAD software development activities. Further, the growth is attributed to increased engineering and technical services required to sustain new Aegis BMD computer program baseline variants (BMD 5.0CU) after completion of development and operational testing and additional technical assessments, recommendations and assistance to Aegis BMD on all aspects of the SM-3 missile(s) design and performance analysis as missiles process through recertification.

Explanation of Funding Changes (FY 2018 to FY 2019):

The FY 2018 to FY2019 changes reflect a temporary increase required for transition activities to ensure uninterrupted weapon system operations during the four month transition phase from the current Ground-based Midcourse Defense (GMD) Weapons Systems O&S contract (Development and Sustainment Contract) to a new competitively awarded O&S contract; an increase in Lockheed Martin sustainment and maintenance of THAAD system software in preparation for the transition to AMRDEC.

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Missile Defense Agency

(Dollars in Thousands)

ropriation/Fund: RDT&E (0400)		FY 2017	FY 2018	FY 2019
Management & Professional Support Services				
FFRDC Work	932	7,206	7,843	6,837
Non-FFRDC Work	932	<u>217,676</u>	<u>236,922</u>	<u>221,069</u>
Sub-Total		224,882	244,765	227,906
Studies, Analysis & Evaluations				
FFRDC Work	933	3,348	3,200	3,095
Non-FFRDC Work	933	<u>6,436</u>	<u>6,150</u>	<u>6,008</u>
Sub-Total		9,784	9,350	9,103
Engineering & Technical Services				
FFRDC Work	934	115,877	115,845	92,136
Non-FFRDC Work	934	<u>151,862</u>	<u>151,820</u>	<u>122,134</u>
Sub-Total		267,739	267,665	214,270
TOTAL		502,405	521,780	451,279
FFRDC Work		126,431	126,888	102,068
Non-FFRDC Work		375,974	394,892	349,211

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MISSILE DEFENSE AGENCY

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2017 FTEs	0	0	0	0
2. FY 2018 FTEs	0	0	0	0
3. FY 2019 FTEs	0	0	0	0

MDA - Operation and Maintenance (O&M)

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2017 FTEs	0	0	0	0
2. FY 2018 FTEs	0	0	0	0
3. FY 2019 FTEs	0	0	0	0

MDA - Research, Development, Test and Evaluation (RDT&E)

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2017 FTEs	0	0	0	0
2. FY 2018 FTEs	0	0	0	0
3. FY 2019 FTEs	0	0	0	0

MDA - Defense Working Capital Fund (DWCF)

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2017 FTEs	0	0	0	0
2. FY 2018 FTEs	0	0	0	0
3. FY 2019 FTEs	0	0	0	0

4. SUMMARY

FY 2017

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
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RDT&E Total	2,309	0	0	2,309
Direct Funded	2,309	0	0	2,309
Reimbursable Funded	0	0	0	0
Total Component	2,309	0	0	2,309
Direct Funded	2,309	0	0	2,309
Reimbursable Funded	0	0	0	0
FY 2018				
RDT&E Total	2,315	0	0	2,315
Direct Funded	2,282	0	0	2,282
Reimbursable Funded	33	0	0	33
Total Component	2,315	0	0	2,315
Direct Funded	2,282	0	0	2,282
Reimbursable Funded	33	0	0	33
FY 2019				
RDT&E Total	2,313	0	0	2,313
Direct Funded	2,280	0	0	2,280
Reimbursable Funded	33	0	0	33
Total Component	2,313	0	0	2,313
Direct Funded	2,280	0	0	2,280
Reimbursable Funded	33	0	0	33

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5. SUMMARY OF CHANGES

Research, Development, Test and Evaluation (RDT&E)

Change from FY 2017 to FY 2018:

MDA's total decrease of 106 FTE in FY 2018 reflects civilian manpower efficiencies resulting from the Department's Civilian Workload Analysis and the continued implementation of 25% Management Headquarters Civilian FTE efficiency. Consistent with Comptroller guidance, MDA no longer includes positions funded by the Defense Acquisition Workforce Development Fund as RDT&E reimbursable funded positions.

Change from FY 2018 to FY 2019:

MDA's total reflect the continuation of the 20% Management HQ Funding and OSD Comptroller Issue No: MP-015 Reduction for Travel Efficiencies through 2019. MDA's phased implementation will continue through FY 2019, consistent with the plan approved by the office of the Deputy Management Officer (DCMO). RMD 700A2 Issue OPS-014 Financial Improvement and Audit Readiness Manpower Reallocation. Action transfers 1 civilian FTE with funding from WHS to MDA to meet audit readiness goals within established timelines.

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