

Fiscal Year (FY) 2021 President's Budget
Operation and Maintenance, Defense-Wide
Missile Defense Agency



February 2020

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<u>Appropriation Summary</u>	<u>FY 2019 Actuals</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2020 Enacted</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2021 Estimate</u>
O&M, Defense-Wide	\$471.0	\$9.3	\$61.0	\$541.3	\$10.7	\$-46.1	\$505.9

Description of Operations Financed:

Provides Missile Defense Systems (MDS) unique sustainment support for the BMD Aegis Weapon System (AWS), Ground-Based Midcourse Defense (GMD) system, MDS Radars, and Terminal High Altitude Area Defense (THAAD) systems.

- AWS sustainment support includes AWS Aegis Standard Missile-3 (SM-3) missile recertification, repair and maintenance, Aegis Ashore sites, and deployed BMD Aegis ship baselines, which MDA supports in conjunction with the Navy, who is responsible for operations and sustainment of common items.
- GMD Weapon system sustainment support includes 44 Ground-Based Interceptors and GMD systems, which MDA supports in conjunction with the Services, who are responsible for operations and sustainment of common items such as base infrastructure.
- MDS Radars MD unique sustainment support includes 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars including forward-based radars, 5 Upgraded Early Warning Radars (UEWRs) and COBRA DANE Radar, which MDA supports in conjunction with the Air Force, who is responsible for operations and sustainment of common items.
- THAAD MD unique sustainment support includes sustainment of the THAAD Missile defense unique and developmental items, which MDA supports in conjunction with the Army, who is responsible for the operations and sustainment of common items.

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	<u>FY 2019</u> <u>Actuals</u>	<u>FY 2020</u> <u>Enacted</u>	<u>FY 2021</u> <u>Estimate</u>
4. Administrative and Servicewide Activities	471,048	541,326	505,858
Aegis BMD Program	77,434	74,887	80,440
BMDS Radars Program	166,850	227,192	176,868
Ground-Based Midcourse Program	139,204	152,504	158,054
THAAD Program	87,560	86,743	90,496
Total Operation and Maintenance, Defense-Wide	471,048	541,326	505,858

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	<u>FY 2019</u> <u>Actuals</u>	<u>FY 2020</u> <u>Enacted</u>	<u>FY 2021</u> <u>Estimate</u>
4. Administrative and Servicewide Activities	471,048	541,326	505,858
Aegis BMD Program	77,434	74,887	80,440
BMDS Radars Program	166,850	227,192	176,868
Ground-Based Midcourse Program	139,204	152,504	158,054
THAAD Program	87,560	86,743	90,496
Total Operation and Maintenance, Defense-Wide	471,048	541,326	505,858

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		<u>FY 2019</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2020</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2021</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	305	2.00%	6	-91	220	2.00%	4	-4	220
399	Total Travel	305		6	-91	220		4	-4	220
	<u>Supplies & Materials</u>									
401	DLA Energy (Fuel Products)	0	-0.67%	0	1,375	1,375	-5.07%	-70	92	1,397
499	Total Supplies & Materials	0		0	1,375	1,375		-70	92	1,397
	<u>DWCF Purchases</u>									
677	DISA Telecomm Svcs - Reimbursable	7,822	2.00%	156	-7,978	0	0.00%	0	0	0
699	Total DWCF Purchases	7,822		156	-7,978	0		0	0	0
	<u>Transportation</u>									
771	Commercial Transport	3,476	2.00%	70	49	3,595	2.00%	72	-1,130	2,537
799	Total Transportation	3,476		70	49	3,595		72	-1,130	2,537
	<u>Other Purchases</u>									
913	Purchased Utilities (Non-Fund)	2,744	2.00%	55	658	3,457	2.00%	69	0	3,526
914	Purchased Communications (Non-Fund)	58	2.00%	1	3,479	3,538	2.00%	71	509	4,118
915	Rents (Non-GSA)	641	2.00%	13	-390	264	2.00%	5	0	269
920	Supplies & Materials (Non-Fund)	34,374	2.00%	687	-14,480	20,581	2.00%	412	-9,815	11,178
922	Equipment Maintenance By Contract	283,199	2.00%	5,664	29,589	318,452	2.00%	6,369	-29,662	295,159
923	Facilities Sust, Rest, & Mod by Contract	33,390	2.00%	668	-5,926	28,132	2.00%	563	-2,937	25,758
925	Equipment Purchases (Non-Fund)	0	2.00%	0	251	251	2.00%	5	658	914
930	Other Depot Maintenance (Non-Fund)	45,150	2.00%	903	70,566	116,619	2.00%	2,332	4	118,955
932	Mgt Prof Support Svcs	2,638	2.00%	53	-1,162	1,529	2.00%	31	-5	1,555
933	Studies, Analysis & Eval	842	2.00%	17	-859	0	2.00%	0	0	0

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	FY 2019	Price		Program	FY 2020	Price		Program	FY 2021
	<u>Program</u>	<u>Growth</u>	<u>Price</u>	<u>Growth</u>	<u>Program</u>	<u>Growth</u>	<u>Price</u>	<u>Growth</u>	<u>Program</u>
		<u>Percent</u>				<u>Percent</u>			
934 Engineering & Tech Svcs	151	2.00%	3	6,946	7,100	2.00%	142	-168	7,074
937 Locally Purchased Fuel (Non-Fund)	1,453	-0.67%	-10	-1,443	0	2.00%	0	0	0
984 Equipment Contracts	1,477	2.00%	30	461	1,968	2.00%	39	-1,826	181
985 Research & Development, Contracts	2,188	0.00%	0	-2,188	0	0.00%	0	0	0
987 Other Intra-Govt Purch	37,447	2.00%	749	-13,837	24,359	2.00%	487	-4,972	19,874
989 Other Services	13,651	2.00%	273	-5,038	8,886	2.00%	178	3,079	12,143
990 IT Contract Support Services	42	2.00%	1	957	1,000	2.00%	20	-20	1,000
999 Total Other Purchases	459,445		9,107	67,584	536,136		10,723	-45,155	501,704
Total	471,048		9,339	60,939	541,326		10,729	-46,197	505,858

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	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Change</u> <u>FY 2020/2021</u>
Contractor FTEs (Total)	1,068	1,009	1,028	19

Personnel Summary Explanations:

The FY 2020 to FY 2021 net increase in contractor full-time equivalences (cFTE) provides the following changes:

- The GMD Program increase of +17 cFTEs due to Missile Field 4 build out (+9 cFTE), and increased communications support and cyber defense at Fort Greely, AK and Vandenberg AFB, CA (+8 cFTE).
- The Aegis BMD Program increase of +2 cFTE provides increased support for sustainment of critical technologies for all aspects of SM-3 Block IA and IB technologies, technology updates, and performance analysis related to sustainment of the SM-3 Block IA and IB Missile Systems.

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	<u>TOTAL</u>
FY 2020 President's Budget Request (Amended, if applicable)	522,529
1. Congressional Adjustments	
a. Distributed Adjustments	
1) Program Increase: Electronic Equipment Unit (EEU) modernization	16,000
2) Program Increase: Cooling Equipment Unit (CEU) refurbishment	15,000
3) Program Increase: Cooling Equipment Unit (CEU) refurbishment kits	3,000
4) THAAD prior year under-execution	-12,670
b. Undistributed Adjustments	
1) Unjustified Growth: Across-the-board reduction to the Operations and Maintenance, Defense-Wide, Account.	-1,930
2) Budget Justification Inconsistencies: Across-the-board reduction to the Operations and Maintenance, Defense-Wide, Account.	-603
c. Adjustments to Meet Congressional Intent	
d. General Provisions	
FY 2020 Appropriated Amount	541,326
2. War-Related and Disaster Supplemental Appropriations	
3. Fact-of-Life Changes	
FY 2020 Baseline Funding	541,326
4. Reprogrammings (Requiring 1415 Actions)	
Revised FY 2020 Estimate	541,326
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings	
FY 2020 Normalized Current Estimate	541,326

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	<u>TOTAL</u>
6. Price Change	10,729
7. Functional Transfers	
8. Program Increases	
a. Annualization of New FY 2020 Program	
b. One-Time FY 2021 Increases	
1) Aegis BMD Program	3,035
c. Program Growth in FY 2021	
1) THAAD Program	5,894
2) BMDS Radars Program	5,735
3) Ground-Based Midcourse Defense Program	5,027
4) Aegis BMD Program	4,274
9. Program Decreases	
a. Annualization of FY 2020 Program Decreases	
b. One-Time FY 2020 Increases	
1) Congressional Program Increases for Electronics Equipment Unit (EEU) modernization, Cooling Equipment Unit (CEU) refurbishment, and Cooling Equipment Unit (CEU) refurbishment kits	-34,000
c. Program Decreases in FY 2021	
1) BMDS Radars Program	-26,525
2) Defense Wide Review (DWR): Missile Recertification and Repair	-7,000
3) Defense Wide Review (DWR): Reduce Facilities Sustainment, Restoration, and Modernization (FSRM) Projects to 90 Percent	-2,600
4) Defense Wide Review (DWR): Elimination of Redundant Point-to-Point Circuits	-37

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FY 2021 Budget Request	<u>TOTAL</u> 505,858
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**Operation and Maintenance, Defense-Wide Summary (\$ in thousands)
Budget Activity (BA) 4: Administration and Service-Wide Activities**

	FY 2019 <u>Actuals</u>	Price <u>Change</u>	Program <u>Change</u>	FY 2020 <u>Enacted</u>	Price <u>Change</u>	Program <u>Change</u>	FY 2021 <u>Estimate</u>
MDA	471,048	9,339	60,939	541,326	10,729	-46,197	505,858

I. Description of Operations Financed: Provides the following Ballistic Missile Defense (BMD) unique sustainment support:

A. Aegis Ballistic Missile Defense (BMD). Provides MD unique sustainment support for deployed Aegis BMD ships, Standard Missile (SM-3), BMD Aegis Weapons System (AWS), and Aegis Ashore sites.

SM-3 missile sustainment includes recertification/repair/second destination transportation of missiles, installation of software and hardware updates, modeling and simulation and logistics efforts.

BMD AWS sustainment support includes:

- Technical and engineering services for in-service BMD ships and sites BMDS test infrastructure maintenance to ensure in-service BMD AWS baselines maintain directed operational availability.
- BMD Engineering Agent technical support and operational analysis for BMD units for casualty correction, technical issues, 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 including technical documentation review and updates, diminishing manufacturing sources, and obsolete materiel surveillance, identification, and resolution

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I. Description of Operations Financed (cont.)

- AEGIS BMD mission planner re-host to fleet warfighters

Aegis Ashore sustainment support includes:

- Repairs and rework required post construction to support of site transition
- Host Nation planning yard activities to track modernization updates to 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 and system operations verification testing
- Updates to training, warfighter technical publications
- Initial outfitting for maintenance and logistics materiel

B. Ground-Based Midcourse (GMD). Funding provides sustainment support for 44 Ground-Based Interceptors (GBIs) and GMD systems based at Fort Greely, AK (40 GBIs) and Vandenberg AFB, CA (4 GBIs), Schriever AFB, CO, Fort Drum, NY and Eareckson AS, AK.

Funding also ensures GMD assets are properly maintained and crews are trained to meet Combatant Commanders needs including:

1. Weapon system sustainment support, equipment maintenance, and sustaining engineering.
2. Mission support, network operations and defense, and integrated logistics support.
3. GMD unique Base Operations Support (BOS), facility maintenance and repairs, facility restoration and modernization, communication support, and utilities.
4. Configuration management and control for the fielded weapon system.

C. Ballistic Missile Defense Systems (BMDS) Radars. Funding provides sustainment support for 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Forward-Based

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I. Description of Operations Financed (cont.)

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 MDA's 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 MDA Missile Defense mission for the five Upgraded Early Warning Radars (UEWRs) and 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 and 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 reviews, error correction, incremental capability improvements, and hardware/system interface compatibility maintenance.

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I. Description of Operations Financed (cont.)

- 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.

II. Force Structure Summary:

N/A

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III. Financial Summary (\$ in thousands)

	FY 2020						
			Congressional Action				
	FY 2019	Budget				Current	FY 2021
A. BA Subactivities	Actuals	Request	Amount	Percent	Appropriated	Enacted	Estimate
4. Administrative and Servicewide Activities	471,048	522,529	18,797	3.6	541,326	541,326	505,858
Aegis BMD Program	77,434	75,237	-350	-0.5	74,887	74,887	80,440
BMDS Radars Program	166,850	194,255	32,937	17.0	227,192	227,192	176,868
Ground-Based Midcourse Program	139,204	153,218	-714	-0.5	152,504	152,504	158,054
THAAD Program	87,560	99,819	-13,076	-13.1	86,743	86,743	90,496
Total	471,048	522,529	18,797	3.6	541,326	541,326	505,858

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III. Financial Summary (\$ in thousands)

	Change <u>FY 2020/FY 2020</u>	Change <u>FY 2020/FY 2021</u>
B. <u>Reconciliation Summary</u>		
Baseline Funding	522,529	541,326
Congressional Adjustments (Distributed)	21,330	
Congressional Adjustments (Undistributed)	-2,533	
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	541,326	
Fact-of-Life Changes (2020 to 2020 Only)		
Subtotal Baseline Funding	541,326	
Supplemental		
Reprogrammings		
Price Changes		10,729
Functional Transfers		
Program Changes		-46,197
Current Estimate	541,326	505,858
Less: Wartime Supplemental		
Normalized Current Estimate	541,326	

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	<u>Amount</u>	<u>Totals</u>
C. <u>Reconciliation of Increases and Decreases</u>		
FY 2020 President's Budget Request (Amended, if applicable)		522,529
1. Congressional Adjustments		18,797
a. Distributed Adjustments		
1) Program Increase: Electronic Equipment Unit (EEU) modernization	16,000	
2) Program Increase: Cooling Equipment Unit (CEU) refurbishment	15,000	
3) Program Increase: Cooling Equipment Unit (CEU) refurbishment kits	3,000	
4) THAAD prior year under-execution	-12,670	
b. Undistributed Adjustments		
1) Unjustified Growth: Across-the-board reduction to the Operations and Maintenance, Defense-Wide, Account.	-1,930	
2) Budget Justification Inconsistencies: Across-the-board reduction to the Operations and Maintenance, Defense-Wide, Account.	-603	
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2020 Appropriated Amount		541,326
2. War-Related and Disaster Supplemental Appropriations		
3. Fact-of-Life Changes		
FY 2020 Baseline Funding		541,326
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2020 Estimate		541,326
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings		
FY 2020 Normalized Current Estimate		541,326
6. Price Change		10,729
7. Functional Transfers		

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III. Financial Summary (\$ in thousands)

C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
8. Program Increases		23,965
a. Annualization of New FY 2020 Program		
b. One-Time FY 2021 Increases		
1) Aegis BMD Program	3,035	
+\$3,035 increase provides the replacement of 20 Air Rovers in Romania required to fix deficiency at operational site. This repair by replacement will eliminate risk of overheating and a corresponding shutdown of the Aegis Weapon System. (FY 2020 Baseline: \$74,887 thousand)		
c. Program Growth in FY 2021		
1) THAAD Program	5,894	
+\$4,808 increase provides additional logistics subject matter expertise required to conduct replacement training for fielded THAAD Batteries transitioning the funding requirements to Operations and Maintenance for all future battery sustainment support requirements.		
+\$1,086 increase provides mission critical items to include field data collection, AMCOM Logistics Center support, and base support agreements due to actual cost and updated cost estimates. (FY 2020 Baseline: \$86,743 thousand)		
2) BMDS Radars Program	5,735	
\$5,735 increase procures mission-critical and fleet spares required due to the high optempo corrosive environments to ensure 24 hours a day, 365 days per year availability. (FY 2020 Baseline: \$227,192		

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C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
thousand)		
3) Ground-Based Midcourse Defense Program	5,027	
+\$4,124 growth provides Fort Greely, AK prime contractor maintenance and sustainment of the new missile field (Missile Field 4) and its 20 new launch silos, silo interface vaults, associated utilidors, and Mechanical Electrical Building (MEB); purchases new High Altitude Electromagnetic Pulse (HEMP) glands to replace aging and deteriorating glands in existing, older silos.		
+\$903 growth provides GMD facility sustainment and communication infrastructure upgrades to address obsolescence issues to include fiber/cable enhancements and robust cyber security support at Fort Greely, AK, HEMP filter purchases/installations, and shielding initiatives at Fort Greely, AK; Eareckson Air Station, AK; and Fort Drum, NY. (FY 2020 Baseline: \$152,504 thousand; +0 FTEs)		
4) Aegis BMD Program	4,274	
+\$4,141 increase provides additional missile repair materiels (i.e. Booster P2/P3, G-Switch Test and repair Kits such as non-usable hardware, mostly fasteners).		
\$+133 increase provides maintenance support to an increased number of BMDS capable ships deployed with Aegis' Common Source Library (CSL) baseline. (FY 2020 Baseline: \$74,887 thousand; +0 FTEs)		

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C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
9. Program Decreases		-70,162
a. Annualization of FY 2020 Program Decreases		
b. One-Time FY 2020 Increases		
1) Congressional Program Increases for Electronics Equipment Unit (EEU) modernization, Cooling Equipment Unit (CEU) refurbishment, and Cooling Equipment Unit (CEU) refurbishment kits	-34,000	
c. Program Decreases in FY 2021		
1) BMDS Radars Program	-26,525	
-\$26,457 decrease reflects completion of material purchases for AN/TPY-2 Cooling Equipment Unit (CEU) refurbishments and completion of long lead purchases necessary for the AN/TPY-2 Electric Equipment Unit (EEU) Modernization program.		
(FY 2020 Baseline: \$227,192 thousand)		
2) Defense Wide Review (DWR): Missile Recertification and Repair	-7,000	
-\$7,000 decrease reflects the reduction to Missile Recertification and repairs identified as a part of the Defense Wide Review (DWR), which resulted in de-scope of requirements. Per program allocations is as follows:		
• -\$3,760 THAAD Program (FY2020 Baseline: \$86,743)		
• -\$3,240 Aegis BMD Program (FY2020 Baseline: \$74,887)		

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C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
3) Defense Wide Review (DWR): Reduce Facilities Sustainment, Restoration, and Modernization (FSRM) Projects to 90 Percent	-2,600	
- \$2,600 decrease reflects the reduction to Facilities Restoration, and Modernization (FSRM) Projects as identified as a part of the DWR, which resulted in the de-scope of requirements. Per program allocations is as follows:		
• -\$2,500 Ground-Based Midcourse Program (FY2020 Baseline: \$152,504)		
• -\$100 THAAD Program (FY2020 Baseline: \$86,743)		
4) Defense Wide Review (DWR): Elimination of Redundant Point-to-Point Circuits	-37	
- \$37 decrease reflects the elimination of Point-to-Point Circuits as a part of the DWR, which resulted in the de-scope of requirements. This decrease affects the BMDS Radars Program. (FY2020 Baseline: \$227,192)		
FY 2021 Budget Request		505,858

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IV. Performance Criteria and Evaluation Summary:

	FY 2019 <u>Actuals</u>	FY 2020 <u>Enacted</u>	FY 2021 <u>Estimate</u>
1. Operational Support	471,048	541,326	505,858
Aegis Program	77,434	74,887	80,440
Ground Base Midcourse	139,204	152,504	158,054
BMDS Radars	166,850	227,192	176,868
THAAD Program	87,560	86,743	90,496
Total Operations and Maintenance, Defense Wide	471,048	541,326	505,858

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 2021 there will be 48 total BMDS capable ships requiring maintenance support.

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

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IV. Performance Criteria and Evaluation Summary:

Defense Brigade (five crews) headquartered at Schriever AFB (SAFB), Colorado, and its 49th Missile Defense Battalion (five crews) at Fort Greely, Alaska (FGA). In FY 2021, MDA 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) at SAFB. In-Flight Interceptor Communications System (IFICS) Data Terminals (IDTs) are currently located at FGA (two each); VAFB (two each); Eareckson Air Station, Alaska (EAS); and Fort Drum, New York.

C. Ballistic Missile Defense Systems (BMDS) Radars Program. The MDA continues to provide sustainment support for 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. Two of the seven Terminal Mode Radars are permanently stationed at OCONUS sites. The operational tempo is met utilizing military personnel and contractor logistics support (CLS) to operate and maintain the radars. FY 2021 includes AN/TPY-2 operations and maintenance execution and Depot Level Maintenance for CEU refurbishments due to vehicle life expectancy, obsolescence improvements, and high OPTEMPO use in corrosive environments. MDA also provides sustainment unique to the MDA Missile Defense mission for the five Upgraded Early Warning Radars (UEWRs) and COBRA DANE Radar, which MDA sustains and operates in conjunction with the U.S. Air Force.

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

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IV. Performance Criteria and Evaluation Summary:

17-hour/day combat operations). During actual deployments, batteries have been operating at a 24 hours a day, 7 days a week, 365 days a year operational tempo, with increased CLS costs. This increased tempo has been sustained through the increase of appropriate attachments and support. Additionally, increasing OCONUS stationing of THAAD Batteries by the Army drives an increase in costs for deployed contractor support, increased transportation costs for spares/repair parts and increased quantities of stocks to support separate locations.

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<u>V. Personnel Summary</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Change FY 2019/ FY 2020</u>	<u>Change FY 2020/ FY 2021</u>
<u>Contractor FTEs (Total)</u>	<u>1,068</u>	<u>1,009</u>	<u>1,028</u>	<u>-59</u>	<u>19</u>

The FY 2020 to FY 2021 net increase in contractor full-time equivalences (cFTE) provides the following changes:

- The GMD Program increase of +17 cFTEs due to Missile Field 4 build out (+9 cFTE), and increased communications support and cyber defense at Fort Greely, AK and Vandenberg AFB, CA (+8 cFTE).
- The Aegis BMD Program increase of +2 cFTE provides increased support for sustainment of critical technologies for all aspects of SM-3 Block IA and IB technologies, technology updates, and performance analysis related to sustainment of the SM-3 Block IA and IB Missile Systems.

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

		Change			Change		
<u>OP 32 Line</u>	<u>FY 2019</u>	<u>FY 2019/FY 2020</u>		<u>FY 2020</u>	<u>FY 2020/FY 2021</u>		<u>FY 2021</u>
	<u>Actuals</u>	<u>Price</u>	<u>Program</u>	<u>Enacted</u>	<u>Price</u>	<u>Program</u>	<u>Estimate</u>
308 Travel of Persons	305	6	-91	220	4	-4	220
399 Total Travel	305	6	-91	220	4	-4	220
401 DLA Energy (Fuel Products)	0	0	1,375	1,375	-70	92	1,397
499 Total Supplies & Materials	0	0	1,375	1,375	-70	92	1,397
677 DISA Telecomm Svcs - Reimbursable	7,822	156	-7,978	0	0	0	0
699 Total DWCF Purchases	7,822	156	-7,978	0	0	0	0
771 Commercial Transport	3,476	70	49	3,595	72	-1,130	2,537
799 Total Transportation	3,476	70	49	3,595	72	-1,130	2,537
913 Purchased Utilities (Non-Fund)	2,744	55	658	3,457	69	0	3,526
914 Purchased Communications (Non-Fund)	58	1	3,479	3,538	71	509	4,118
915 Rents (Non-GSA)	641	13	-390	264	5	0	269
920 Supplies & Materials (Non-Fund)	34,374	687	-14,480	20,581	412	-9,815	11,178
922 Equipment Maintenance By Contract	283,199	5,664	29,589	318,452	6,369	-29,662	295,159
923 Facilities Sust, Rest, & Mod by Contract	33,390	668	-5,926	28,132	563	-2,937	25,758
925 Equipment Purchases (Non-Fund)	0	0	251	251	5	658	914
930 Other Depot Maintenance (Non-Fund)	45,150	903	70,566	116,619	2,332	4	118,955
932 Mgt Prof Support Svcs	2,638	53	-1,162	1,529	31	-5	1,555
933 Studies, Analysis & Eval	842	17	-859	0	0	0	0
934 Engineering & Tech Svcs	151	3	6,946	7,100	142	-168	7,074
937 Locally Purchased Fuel (Non-Fund)	1,453	-10	-1,443	0	0	0	0
984 Equipment Contracts	1,477	30	461	1,968	39	-1,826	181
985 Research & Development, Contracts	2,188	0	-2,188	0	0	0	0
987 Other Intra-Govt Purch	37,447	749	-13,837	24,359	487	-4,972	19,874
989 Other Services	13,651	273	-5,038	8,886	178	3,079	12,143

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	FY 2019	Change		FY 2020	Change		FY 2021
		<u>FY 2019/FY 2020</u>			<u>FY 2020/FY 2021</u>		
<u>OP 32 Line</u>	<u>Actuals</u>	<u>Price</u>	<u>Program</u>	<u>Enacted</u>	<u>Price</u>	<u>Program</u>	<u>Estimate</u>
990 IT Contract Support Services	42	1	957	1,000	20	-20	1,000
999 Total Other Purchases	459,445	9,107	67,584	536,136	10,723	-45,155	501,704
Total	471,048	9,339	60,939	541,326	10,729	-46,197	505,858

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CONTRACT SERVICES FUNDING
(\$ in Millions)

Line	By PB/OP-32 Inflation Category Code	FY 2019	FY 2020	FY 2020	FY 2021	FY 2021
		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	4	0	4	0
	Total 23.1 - Communications, Utilities, and Misc. Charges	1	4	0	4	0
932	Mgmt and Professional Support Services	3	2	0	2	0
933	Studies, Analysis, and Evaluation Services	1	0	0	0	0
934	Engineering and Technical Services	0	7	0	7	0
	Total 25.1 - Advisory and Assistance Services	4	9	0	9	0
989	Other Contracts	14	9	0	12	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	14	9	0	12	0
987	Other Intra-Government Purchases	37	24	0	20	0
	Total 25.3 - Other Goods and Services from Federal Sources	37	24	0	20	0
923	Facility Maintenance	33	28	0	26	0
	Total 25.4 - Operation and Maintenance of Facilities	33	28	0	26	0
985	Research and Development Contracts	2	0	0	0	0
	Total 25.5 - Research and Development Contracts	2	0	0	0	0
922	Equipment Maintenance - Contract	283	318	0	295	0
930	Other Depot Maintenance (Non-Fund)	45	116	0	119	0
990	IT Contract Support Services	0	1	0	1	0
	Total 25.7 - Operation and Maintenance of Equipment	328	435	0	415	0
925	Equipment Purchases (Non-Fund)	0	1	0	1	0
	Total 31.0- Equipment Purchases	0	1	0	1	0
	Total	419	510	0	487	0

Source: Program Resources Collection Process as of 5 Dec 2019

Numbers may not add due to rounding

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CONTRACT SERVICES - MANPOWER
Contractor Full-Time Equivalents

Line	By PB/OP-32 Inflation Category Code	FY 2019 Base & OCO <u>Actual</u>	FY 2020 Base <u>Request</u>	FY 2020 OCO <u>Request</u>	FY 2021 Base <u>Request</u>	FY 2021 OCO <u>Request</u>
914	Purchased Communications (Non-Fund)	4	11	0	15	0
	Total 23.1 - Communications, Utilities and Misc. Charges	4	11	0	15	0
932	Mgmt and Professional Support Services	6	6	0	6	0
933	Studies, Analysis, and Evaluation Services	0	0	0	0	0
934	Engineering and Technical Services	10	12	0	14	0
	Total 25.1 - Advisory and Assistance Services	16	18	0	20	0
989	Other Contracts	35	35	0	35	0
	Total 25.2 - Other Services	35	35	0	35	0
987	Other Intra-Government Purchases	19	2	0	0	0
	Total 25.3 - Other Goods and Services from Federal Sources	19	2	0	0	0
923	Facility Maintenance	94	94	0	98	0
	Total 25.4 - Operation and Maintenance of Facilities	94	94	0	98	0
985	Research and Development Contracts	0	0	0	0	0
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	800	708	0	685	0
930	Other Depot Maintenance (Non-Fund)	100	141		173	
990	IT Contract Support Services	0	0		0	0
	Total 25.7 - Operation and Maintenance of Equipment	900	849	0	858	0
925	Equipment Purchases (Non-Fund)	0	0	0	2	0
	Total 31.0 - Equipment Purchases (Non-Fund)	0	0	0	2	0
	Total	1,068	1,009	0	1,028	0

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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 sustainment support activities for deployed Aegis BMD ships and Aegis Ashore facilities including Standard Missile-3 (SM-3), BMD Aegis Weapon System (AWS), and for Aegis Ashore sites. The SM-3 sustainment support program includes the recertification/repair of missiles, installation of software and hardware updates, modeling and simulation and logistics efforts. Also provides missile second destination transportation, transportation ballistic barrier maintenance, spares replenishment and operational fleet support.

The BMD AWS sustainment support 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, technical documentation review, and implementation of updated maintenance concepts diminishing manufacturing sources, and obsolete materiel surveillance, identification, and resolution.

Provides engineering services for Aegis Ashore Host Nation close out items & repairs, repair by replacement of Air Rovers, and rework required for post construction activities in support of site transition. Includes temporary cooling services and updates to training, warfighter technical publications, and the initial outfitting requirements for maintenance and logistics materiel.

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B. Ground-Based Midcourse. Funding provides sustainment support for 44 Ground-Based Interceptors (GBIs) based at Fort Greely, AK (40 GBIs) and Vandenberg AFB, CA (4 GBIs), Schriever AFB, CO, Fort Drum, NY and Eareckson AFB, AK. Funding also ensures GMD assets are properly maintained and crews are trained to meet Combatant Commanders needs including: Weapon system sustainment, equipment maintenance, and sustaining engineering; mission operations support, network operations and defense, and integrated logistics support; Base Operations Support (BOS), facility maintenance and repairs, facility restoration and modernization, communication support, and utilities; configuration management and control for the fielded weapon system.

C. Ballistic Missile Defense System (BMDS) Radars. Sustainment support for 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. Funding provides sustainment support for items unique to the Missile Defense mission for the 5 Upgraded Early Warning Radars (UEWRs) and 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 support for 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 support 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/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.

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Reporting Limitations:

N/A

Summary of Increases/Decreases:

A. AEGIS Program funding provides:

1. Increase provides additional funds for missile repairs materiels (i.e. Booster P2/P3, G-Switch Test and repair Kits such as non-usable hardware, mostly fasteners).
2. Increase provides replacement of 20 Air Rovers in Romania to fix deficiency at operational site. This repair by replacement will eliminate risk of overheating and a corresponding shutdown of the Aegis Weapon System.
3. Decrease reflects the reduction to Missile Recertification and repairs identified as a part of the Defense Wide Reviews resulting in the de-scope of requirements.

B. Ground-Based Midcourse program:

1. Increase provides for prime contractor maintenance and sustainment of the new Fort Greely, AK missile field (Missile Field 4) and its 20 new launch silos, silo interface vaults, associated utilidors, and Mechanical Electrical Building (MEB); purchases new High Altitude Electromagnetic Pulse (HEMP) glands to replace aging and deteriorating glands in existing, older silos.
2. Increase provides GM facility sustainment and communication infrastructure upgrades to address obsolescence issues. These include fiber/cable enhancements and robust cyber security support at Fort Greely, AK, HEMP filter purchases/installations, and shielding initiatives at Fort Greely, AK, Eareckson Air Station, AK, and Fort Drum, NY.

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C. Ballistic Missile Defense Systems (BMDS) Radars program decrease reflects completion of material purchases for AN/TPY-2 Cooling Equipment Unit (CEU) refurbishments and completion of long lead purchases necessary for the AN/TPY-2 Electric Equipment Unit (EEU) Modernization program.

D. THAAD Program funding provides:

1. Increase provides additional logistics subject matter expertise required to conduct replacement training for fielded THAAD Batteries transitioning the funding requirements to Operations and Maintenance for all future battery sustainment support requirements.
2. Increase provides for mission critical items to include field data collection, AMCOM Logistics Center support, and base support agreements due to actual costs and updated cost estimates.
3. Decrease reflects the reduction to Missile Recertification and Facilities, Sustainment, Restoration, and Modernization (FSRM) Projects identified during the Defense Wide Review (DWR), resulting in the de-scope of requirements.

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<u>Appropriation/Fund</u>	<u>FY 2019</u> <u>Actuals</u>	<u>FY 2020</u> <u>Enacted</u>	<u>FY 2021</u> <u>Estimate</u>
I. Management & Professional Support Services			
FFRDC Work	1,177	429	461
Non-FFRDC Work	<u>1,461</u>	<u>1,100</u>	<u>1,094</u>
Subtotal	2,638	1,529	1,555
II. Studies, Analysis & Evaluations			
FFRDC Work	500	0	0
Non-FFRDC Work	<u>342</u>	<u>0</u>	<u>0</u>
Subtotal	842	0	0
III. Engineering & Technical Services			
FFRDC Work	0	3,621	3,607
Non-FFRDC Work	<u>151</u>	<u>3,479</u>	<u>3,467</u>
Subtotal	151	7,100	7,074
TOTAL			
FFRDC Work	1,677	4,050	4,068
Non-FFRDC Work	1,954	4,579	4,561
Reimbursable	0	0	0

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Explanation of Funding Changes (FY 2019 to FY 2020):

The FY 2019 to FY 2020 provides the Ground-based Midcourse Defense Program with an increase in Management and Support Services to perform independent assessment of GMD system manuals and processes as well as an increase in Warfighter interface and engagement assistance.

Aegis BMD Program increase provides a realignment of Depot Maintenance efforts to 934 Engineering & Technical Services.

Explanation of Funding Changes (FY 2020 to FY 2021):

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(Dollars in Thousands)

Appropriation/Fund: RDT&E (0400)		FY 2019	FY 2020	FY 2021
1. Management & Professional Support Services				
FFRDC Work	932	20,884	10,460	10,344
Non-FFRDC Work	932	<u>641,583</u>	<u>338,217</u>	<u>334,440</u>
Sub-Total		662,467	348,677	344,784
2. Studies, Analysis & Evaluations				
FFRDC Work	933	34,767	10,443	6,728
Non-FFRDC Work	933	<u>14,616</u>	<u>21,203</u>	<u>10,628</u>
Sub-Total		49,383	31,646	17,356
3. Engineering & Technical Services				
FFRDC Work	934	95,688	1,942	1,389
Non-FFRDC Work	934	<u>93,535</u>	<u>92,251</u>	<u>66,015</u>
Sub-Total		189,223	94,193	67,404
TOTAL		901,073	474,516	429,544
FFRDC Work		151,339	22,845	18,461
Non-FFRDC Work		749,734	451,671	411,083

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	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 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 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 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 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 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 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 FTEs	0	0	0	0

4. SUMMARY

FY 2019

	<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	2,321	0	0	2,321
Direct Funded	2,321	0	0	2,321
Reimbursable Funded	0	0	0	0
Total Component	2,321	0	0	2,321
Direct Funded	2,321	0	0	2,321
Reimbursable Funded	0	0	0	0
FY 2020				
RDT&E Total	2,183	0	0	2,183
Direct Funded	2,183	0	0	2,183
Reimbursable Funded	0	0	0	0
Total Component	2,183	0	0	2,183
Direct Funded	2,183	0	0	2,183
Reimbursable Funded	0	0	0	0
FY 2021				
RDT&E Total	2,157	0	0	2,157
Direct Funded	2,157	0	0	2,157
Reimbursable Funded	0	0	0	0
Total Component	2,157	0	0	2,157
Direct Funded	2,157	0	0	2,157
Reimbursable Funded	0	0	0	0

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5. SUMMARY OF CHANGES

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

Change from FY 2019 to FY 2020:

MDA's direct RDT&E funded FTE reflects the continued implementation of the Management Headquarter Activity (MHA) reductions. MDA's phased implementation will continue through FY 2020, consistent with the plan approved by the office of the Deputy Management Officer (DCMO).

Change from FY 2020 to FY 2021:

MDA's direct RDT&E funded FTE reflects a 5% funding reduction identified as a part of the Defense Wide Review.

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	Method of Accomplishment	Weapon System	FY 2019	FY 2020	FY 2021
Operation and Maintenance Funding					
	Contractor Logistics Support (CLS)	AN/TPY-2 Radar	36,825	90,228	81,699
		Ballistic Missile Defense	19,763	28,148	28,932
		Standard Missile-3	38,983	26,878	25,906
		THAAD	21,857	20,859	23,514
	Contractor Logistics Support (CLS) Total		117,428	166,113	160,051
	Interim Contract Support (ICS)	THAAD	-	-	-
	Interim Contract Support (ICS) Total		-	-	-
	Inter-Service	Standard Missile-3	125	180	185
		THAAD	6,109	8,973	7,553
	Inter-Service Total		6,234	9,153	7,738
	Organic	Ballistic Missile Defense	5,541	7,990	8,030
		Standard Missile-3	5,232	9,622	7,676
		THAAD	2,067	3,428	1,936
	Organic Total		12,840	21,040	17,642
		THAAD	19,512	16,509	16,384
	Other Contract Total		19,512	16,509	16,384
Total Operation and Maintenance Funding			156,014	212,815	201,815
Procurement Funding					
	Interim Contractor Support (ICS)	THAAD	-	-	-
	Interim Contractor Support (ICS) Total		-	-	-
	Other Contract	AN/TPY-2 Radar	5,177	10,046	-
	Other Contract Total		5,177	10,046	-
Total Procurement Funding			5,177	10,046	-
Research, Development, Test and Evaluation Funding					
	Contractor Logistics Support (CLS)	Ballistic Missile Defense	-	-	-
	Contractor Logistics Support (CLS) Total		-	-	-
	Inter-Service	THAAD	-	-	-
			2,479	-	-
	Inter-Service Total		2,479	-	-
	Organic	Ballistic Missile Defense	-	-	-
	Organic Total		-	-	-
	Other Contract	AN/TPY-2 Radar	103,245	88,737	77,829
		THAAD	-	-	-
	Other Contract Total		103,245	88,737	77,829
Total Research, Development, Test and Evaluation Funding			105,724	88,737	77,829
Total MDA Depot Maintenance Program			266,915	311,598	279,644

NOTE: The funding in each fiscal year represents both the required and funded amounts for that program.

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