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**Department of Defense
Fiscal Year (FY) 2018 Budget Estimates**

May 2017



Missile Defense Agency

Defense-Wide Justification Book Volume 2b of 2

Procurement, Defense-Wide
(Includes O&M and MILCON)

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Missile Defense Agency • Budget Estimates FY 2018 • Procurement

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Introduction & Explanation of Contents

The Department of Defense FY2018 Budget Estimates RDT&E (Includes Procurement, O&M, and MILCON), Defense-wide Volume 2, Missile Defense Agency (MDA) justification materials consists of two books titled Volume 2a and 2b. Justification documents are provided in the books as listed below.

Volume 2a

- R-1 Comptroller Exhibit
- MDA FY 2018 Budget Estimate Overview
- MDA Appropriation Summary
- Acronyms
- RDT&E Exhibits in BA-03, BA-04, and BA-06

Volume 2b

- P-1 Comptroller Exhibit
- MDA Operations and Maintenance Exhibit
- MDA MILCON Exhibits
- MDA Procurement Exhibits

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Defense-Wide
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

16 May 2017

Appropriation -----	FY 2016 Base + OCO -----	FY 2017 PB Request with CR Adj Base -----	FY 2017 Total PB Requests* with CR Adj Base -----
Procurement, Defense-Wide	1,489,203	988,503	1,139,503
Total Defense-Wide	1,489,203	988,503	1,139,503

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Defense-Wide
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

16 May 2017

Appropriation -----	FY 2017 PB Request with CR Adj OCO -----	FY 2017 Total PB Requests* with CR Adj OCO -----	FY 2017 Less Enacted Div B P.L.114-254** OCO -----	FY 2017 Remaining Req with CR Adj OCO -----
Procurement, Defense-Wide				
Total Defense-Wide				

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Defense-Wide
 FY 2018 President's Budget Request
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 Total Obligational Authority
 (Dollars in Thousands)

16 May 2017

Appropriation	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA	FY 2017 Total PB Requests* with CR Adj Base + OCO	FY 2017 Less Enacted Div B P.L.114-254** OCO	FY 2017 Remaining Req with CR Adj Base + OCO
Procurement, Defense-Wide	988,503	1,139,503		1,139,503
Total Defense-Wide	988,503	1,139,503		1,139,503

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Defense-Wide
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

16 May 2017

Appropriation -----	FY 2018 Base -----	FY 2018 OCO -----	FY 2018 Total -----
Procurement, Defense-Wide	1,178,364		1,178,364
Total Defense-Wide	1,178,364		1,178,364

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Defense-Wide
FY 2018 President's Budget Request
Exhibit P-1 FY 2018 President's Budget Request
Total Obligational Authority
(Dollars in Thousands)

16 May 2017

Organization: Procurement, Defense-Wide -----	FY 2016 Base + OCO -----	FY 2017 PB Request with CR Adj Base -----	FY 2017 Total PB Requests* with CR Adj Base -----
Missile Defense Agency, MDA	1,489,203	988,503	1,139,503
Total	1,489,203	988,503	1,139,503

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	FY 2017 PB Request with CR Adj OCO	FY 2017 Total PB Requests* with CR Adj OCO	FY 2017 Less Enacted Div B P.L.114-254** OCO	FY 2017 Remaining Req with CR Adj OCO
Organization: Procurement, Defense-Wide -----				
Missile Defense Agency, MDA				
Total				

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16 May 2017

Organization: Procurement, Defense-Wide	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA	FY 2017 Total PB Requests* with CR Adj Base + OCO	FY 2017 Less Enacted Div B P.L.114-254** OCO	FY 2017 Remaining Req with CR Adj Base + OCO
Missile Defense Agency, MDA	988,503	1,139,503		1,139,503
Total	988,503	1,139,503		1,139,503

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FY 2018 President's Budget Request
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(Dollars in Thousands)

16 May 2017

Organization: Procurement, Defense-Wide -----	FY 2018 Base -----	FY 2018 OCO -----	FY 2018 Total -----
Missile Defense Agency, MDA	1,178,364		1,178,364
Total	1,178,364		1,178,364

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(Dollars in Thousands)

16 May 2017

Appropriation: Procurement, Defense-Wide

Budget Activity -----	FY 2016 Base + OCO -----	FY 2017 PB Request with CR Adj Base -----	FY 2017 Total PB Requests* with CR Adj Base -----
01. Major Equipment	1,489,203	988,503	1,139,503
Total Procurement, Defense-Wide	1,489,203	988,503	1,139,503

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Budget Activity -----	FY 2017 PB Request with CR Adj OCO -----	FY 2017 Total PB Requests* with CR Adj OCO -----	FY 2017 Less Enacted Div B P.L.114-254** OCO -----	FY 2017 Remaining Req with CR Adj OCO -----
01. Major Equipment				
Total Procurement, Defense-Wide				

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Appropriation: Procurement, Defense-Wide

Budget Activity -----	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA -----	FY 2017 Total PB Requests* with CR Adj Base + OCO -----	FY 2017 Less Enacted Div B P.L.114-254** OCO -----	FY 2017 Remaining Req with CR Adj Base + OCO -----
01. Major Equipment	988,503	1,139,503		1,139,503
Total Procurement, Defense-Wide	988,503	1,139,503		1,139,503

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(Dollars in Thousands)

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Appropriation: Procurement, Defense-Wide

Budget Activity -----	FY 2018 Base -----	FY 2018 OCO -----	FY 2018 Total -----
01. Major Equipment	1,178,364		1,178,364
Total Procurement, Defense-Wide	1,178,364		1,178,364

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 FY 2018 President's Budget Request
 Exhibit P-1 FY 2018 President's Budget Request
 Total Obligational Authority
 (Dollars in Thousands)

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Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2016		FY 2017 PB Request with CR Adj Base		FY 2017 Total PB Requests* with CR Adj Base		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Major Equipment									

Major Equipment, Missile Defense Agency									
27	THAAD	B	34	447,971	24	369,608	36	520,608	U
28	Aegis BMD	B	49	586,711	35	463,801	35	463,801	U
29	Aegis BMD Advance Procurement (CY) C (FY 2018 for FY 2019) (M)								U
30	BMDS AN/TPY-2 Radars	A		78,634		5,503		5,503	U
31	Arrow Upper Tier	B		15,000					U
32	David's Sling	A		150,000					U
33	Aegis Ashore Phase III	B		30,587		57,493		57,493	U
34	Iron Dome	A	1	55,000		42,000		42,000	U
35	Aegis BMD Hardware and Software	A	26	125,300	6	50,098	6	50,098	U
Total Major Equipment				1,489,203		988,503		1,139,503	
Total Procurement, Defense-Wide				1,489,203		988,503		1,139,503	

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 (Dollars in Thousands)

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Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj		FY 2017 Total PB Requests* with CR Adj		FY 2017 Less Enacted Div B P.L.114-254**		FY 2017 Remaining Req with CR Adj		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Major Equipment											
Major Equipment, Missile Defense Agency											
27	THAAD	B									U
28	Aegis BMD	B									U
29	Aegis BMD Advance Procurement (CY) C (FY 2018 for FY 2019) (M)										U
30	BMDS AN/TPY-2 Radars	A									U
31	Arrow Upper Tier	B									U
32	David's Sling	A									U
33	Aegis Ashore Phase III	B									U
34	Iron Dome	A									U
35	Aegis BMD Hardware and Software	A									U
Total Major Equipment			-----	-----	-----	-----	-----	-----	-----	-----	
Total Procurement, Defense-Wide			-----	-----	-----	-----	-----	-----	-----	-----	

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 (Dollars in Thousands)

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Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2017 Total		FY 2017 Total		FY 2017 Less Enacted		FY 2017 Remaining Req		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Major Equipment											
Major Equipment, Missile Defense Agency											
27	THAAD	B	24	369,608	36	520,608			36	520,608	U
28	Aegis BMD	B	35	463,801	35	463,801			35	463,801	U
29	Aegis BMD Advance Procurement (CY) C (FY 2018 for FY 2019) (M)										U
30	BMDS AN/TPY-2 Radars	A		5,503		5,503				5,503	U
31	Arrow Upper Tier	B									U
32	David's Sling	A									U
33	Aegis Ashore Phase III	B		57,493		57,493				57,493	U
34	Iron Dome	A		42,000		42,000				42,000	U
35	Aegis BMD Hardware and Software	A	6	50,098	6	50,098			6	50,098	U
Total Major Equipment				988,503		1,139,503				1,139,503	
Total Procurement, Defense-Wide				988,503		1,139,503				1,139,503	

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16 May 2017

Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2018 Base		FY 2018 OCO		FY 2018 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Major Equipment									
Major Equipment, Missile Defense Agency									
27	THAAD	B	34	451,592			34	451,592	U
28	Aegis BMD	B	34	425,018			34	425,018	U
29	Aegis BMD Advance Procurement (CY) C (FY 2018 for FY 2019) (M)			38,738 (38,738)				38,738 (38,738)	U
30	BMDS AN/TPY-2 Radars	A		947				947	U
31	Arrow Upper Tier	B							U
32	David's Sling	A							U
33	Aegis Ashore Phase III	B		59,739				59,739	U
34	Iron Dome	A	1	42,000			1	42,000	U
35	Aegis BMD Hardware and Software	A	21	160,330			21	160,330	U
Total Major Equipment				1,178,364				1,178,364	
Total Procurement, Defense-Wide				1,178,364				1,178,364	

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28	01	17	MD09	AEGIS BMD.....	Volume 2b - 13
29	01	17	MD09	AEGIS BMD, Advance Procurement.....	Volume 2b - 25
30	01	17	MD11	BMDS AN/TPY-2 Radars.....	Volume 2b - 29
31	01	17	MD20	Arrow Upper Tier.....	Volume 2b - 47
32	01	17	MD34	David's Sling.....	Volume 2b - 51
33	01	17	MD73	Aegis Ashore Phase III.....	Volume 2b - 55
34	01	17	MD83	Iron Dome.....	Volume 2b - 59
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AEGIS BMD, Advance Procurement	MD09	29	01	17.....	Volume 2b - 25
Aegis Ashore Phase III	MD73	33	01	17.....	Volume 2b - 55
Aegis BMD Hardware and Software	MD90	35	01	17.....	Volume 2b - 63
Arrow Upper Tier	MD20	31	01	17.....	Volume 2b - 47
BMDS AN/TPY-2 Radars	MD11	30	01	17.....	Volume 2b - 29
David's Sling	MD34	32	01	17.....	Volume 2b - 51
Iron Dome	MD83	34	01	17.....	Volume 2b - 59
THAAD	MD07	27	01	17.....	Volume 2b - 1

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**Fiscal Year (FY) 2018 President's Budget
Missile Defense Agency (MDA)**



May 2017

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

<u>Appropriation Summary</u>	<u>FY 2016 Actual</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2017 Estimate</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2018 Estimate</u>
O&M, Defense-Wide	\$423.0	\$8.1	\$36.2	\$467.3	\$9.3	\$27.5	\$504.1

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.

BMD AWS sustainment includes In-Service Engineering Agent (ISEA), Lifecycle Support Engineering Agent (LSEA), and Technical Design Agent support for fielded Aegis BMD AWS baselines. Provides engineering services, identification and resolution of BMD software and hardware Aegis Combat System operability deficiencies/issues, fleet maintenance support for BMD ships, certification/delivery of updated weapon systems capabilities, Reliability, Maintainability & Availability analysis/metrics and review/implementation of maintenance concepts. Provides integrated logistics support such as technical documentation maintenance and resolution of Diminishing Manufacturing Sources/obsolete material issues.

Operational sustainment support for the Aegis Ashore Romania site and equipment includes BMD unique AWS sparing and consumables during interim support, facility operations including transportation, power and communications, and Command, Control, Communications, Computers and Intelligence (C4I), ISEA and LSEA engineering. Also provides portable Aegis BMD Mission Planning tools for Fleet Maritime Operation Centers, Test Site Support, development and revision of regional and homeland defense plans and Pre-Planned Responses and Global Force Management requests.

B. Ground Base 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.

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

C. Ballistic Missile Defense System (BMDS) AN/TPY-2 Radars. 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. Funding also provides Electronic Equipment Unit (EEU) retrofits at Letterkenny Army Depot to enhance radar capability, and 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 US 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 Depot level maintenance for THAAD missile defense unique equipment. 2.) 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.) Interactive Electronic Technical Manual (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 Delta training for fielded units required due to design changes for replacement soldiers. 9.) Special Tools and Test Equipment for the organic depot. 10.) RESET program.

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

	FY 2016	FY 2017	FY 2018
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>
4. Administrative and Servicewide Activities	422,950	467,275	504,058
Aegis BMD Program	43,500	73,039	96,346
BMDS AN/TPY-2 Radars Program	187,820	192,856	191,055
Ground Base Midcourse Program	133,705	129,281	137,896
THAAD Program	57,925	72,099	78,761
Total Operation and Maintenance, Defense-Wide	422,950	467,275	504,058

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

	FY 2016	FY 2017	FY 2018
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>
4. Administrative and Servicewide Activities	422,950	467,275	504,058
Aegis BMD Program	43,500	73,039	96,346
BMDS AN/TPY-2 Radars Program	187,820	192,856	191,055
Ground Base Midcourse Program	133,705	129,281	137,896
THAAD Program	57,925	72,099	78,761
Total Operation and Maintenance, Defense-Wide	422,950	467,275	504,058

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

	<u>FY 2016</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2017</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2018</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	299	1.90%	6	34	339	2.00%	7	-5	341
399	Total Travel	299		6	34	339		7	-5	341
<u>Supplies & Materials</u>										
401	DLA Energy (Fuel Products)	1,081	6.00%	65	-67	1,079	-0.40%	-4	32	1,107
499	Total Supplies & Materials	1,081		65	-67	1,079		-4	32	1,107
<u>Transportation</u>										
771	Commercial Transport	4,178	1.90%	79	-2,354	1,903	2.00%	38	2	1,943
799	Total Transportation	4,178		79	-2,354	1,903		38	2	1,943
<u>Other Purchases</u>										
912	Rental Payments to GSA (SLUC)	0	1.90%	0	244	244	2.00%	5	-2	247
913	Purchased Utilities (Non-Fund)	4,542	1.90%	86	-1,589	3,039	2.00%	61	-136	2,964
914	Purchased Communications (Non-Fund)	2,751	1.90%	52	-1,589	1,214	2.00%	24	5	1,243
915	Rents (Non-GSA)	238	1.90%	5	-5	238	2.00%	5	1	244
917	Postal Services (U.S.P.S)	5	1.90%	0	0	5	2.00%	0	0	5
920	Supplies & Materials (Non-Fund)	22,567	1.90%	429	-3,738	19,258	2.00%	385	3,500	23,143
922	Equipment Maintenance By Contract	198,583	1.90%	3,773	-24,716	177,640	2.00%	3,553	8,470	189,663
923	Facilities Sust, Rest, & Mod by Contract	45,244	1.90%	860	80,883	126,987	2.00%	2,540	9,061	138,588
925	Equipment Purchases (Non-Fund)	988	1.90%	19	15,374	16,381	2.00%	328	-524	16,185
930	Other Depot Maintenance (Non-Fund)	28,927	1.90%	550	-11,045	18,432	2.00%	369	13,590	32,391
932	Mgt Prof Support Svcs	22,330	1.90%	424	-10,813	11,941	2.00%	239	-20	12,160
933	Studies, Analysis & Eval	5,893	1.90%	112	-2,320	3,685	2.00%	74	1,484	5,243
934	Engineering & Tech Svcs	6,845	1.90%	130	-4,835	2,140	2.00%	43	405	2,588

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

	<u>FY 2016</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2017</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2018</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>			
937 Locally Purchased Fuel (Non-Fund)	1,533	6.00%	92	-115	1,510	-0.40%	-6	16	1,520
985 Research & Development, Contracts	471	0.00%	0	-471	0	0.00%	0	0	0
987 Other Intra-Govt Purch	24,390	1.90%	463	4,387	29,240	2.00%	585	-8,316	21,509
989 Other Services	941	1.90%	18	21,930	22,889	2.00%	458	1,630	24,977
990 IT Contract Support Services	51,144	1.90%	972	-23,005	29,111	2.00%	582	-1,696	27,997
999 Total Other Purchases	417,392		7,985	38,577	463,954		9,245	27,468	500,667
Total	422,950		8,135	36,190	467,275		9,286	27,497	504,058

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	<u>FY 2016</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2017</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2018</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	299	1.90%	6	34	339	2.00%	7	-5	341
399	Total Travel	299		6	34	339		7	-5	341
<u>Supplies & Materials</u>										
401	DLA Energy (Fuel Products)	1,081	6.00%	65	-67	1,079	-0.40%	-4	32	1,107
499	Total Supplies & Materials	1,081		65	-67	1,079		-4	32	1,107
<u>Transportation</u>										
771	Commercial Transport	4,178	1.90%	79	-2,354	1,903	2.00%	38	2	1,943
799	Total Transportation	4,178		79	-2,354	1,903		38	2	1,943
<u>Other Purchases</u>										
912	Rental Payments to GSA (SLUC)	0	1.90%	0	244	244	2.00%	5	-2	247
913	Purchased Utilities (Non-Fund)	4,542	1.90%	86	-1,589	3,039	2.00%	61	-136	2,964
914	Purchased Communications (Non-Fund)	2,751	1.90%	52	-1,589	1,214	2.00%	24	5	1,243
915	Rents (Non-GSA)	238	1.90%	5	-5	238	2.00%	5	1	244
917	Postal Services (U.S.P.S)	5	1.90%	0	0	5	2.00%	0	0	5
920	Supplies & Materials (Non-Fund)	22,567	1.90%	429	-3,738	19,258	2.00%	385	3,500	23,143
922	Equipment Maintenance By Contract	198,583	1.90%	3,773	-24,716	177,640	2.00%	3,553	8,470	189,663
923	Facilities Sust, Rest, & Mod by Contract	45,244	1.90%	860	80,883	126,987	2.00%	2,540	9,061	138,588
925	Equipment Purchases (Non-Fund)	988	1.90%	19	15,374	16,381	2.00%	328	-524	16,185
930	Other Depot Maintenance (Non-Fund)	28,927	1.90%	550	-11,045	18,432	2.00%	369	13,590	32,391
932	Mgt Prof Support Svcs	22,330	1.90%	424	-10,813	11,941	2.00%	239	-20	12,160
933	Studies, Analysis & Eval	5,893	1.90%	112	-2,320	3,685	2.00%	74	1,484	5,243
934	Engineering & Tech Svcs	6,845	1.90%	130	-4,835	2,140	2.00%	43	405	2,588

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	<u>FY 2016</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2017</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2018</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>			
937 Locally Purchased Fuel (Non-Fund)	1,533	6.00%	92	-115	1,510	-0.40%	-6	16	1,520
985 Research & Development, Contracts	471	0.00%	0	-471	0	0.00%	0	0	0
987 Other Intra-Govt Purch	24,390	1.90%	463	4,387	29,240	2.00%	585	-8,316	21,509
989 Other Services	941	1.90%	18	21,930	22,889	2.00%	458	1,630	24,977
990 IT Contract Support Services	51,144	1.90%	972	-23,005	29,111	2.00%	582	-1,696	27,997
999 Total Other Purchases	417,392		7,985	38,577	463,954		9,245	27,468	500,667
Total	422,950		8,135	36,190	467,275		9,286	27,497	504,058

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	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Change</u> <u>FY 2017/2018</u>
Contractor FTEs (Total)	853	964	986	22

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.

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	<u>TOTAL</u>
FY 2017 President's Budget Request (Amended, if applicable)	467,275
1. Congressional Adjustments	
a. Distributed Adjustments	
b. Undistributed Adjustments	
c. Adjustments to Meet Congressional Intent	
d. General Provisions	
FY 2017 Appropriated Amount	467,275
2. War-Related and Disaster Supplemental Appropriations	
3. Fact-of-Life Changes	
FY 2017 Baseline Funding	467,275
4. Reprogrammings (Requiring 1415 Actions)	
Revised FY 2017 Estimate	467,275
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings	
FY 2017 Normalized Current Estimate	467,275
6. Price Change	9,286
7. Functional Transfers	
8. Program Increases	
a. Annualization of New FY 2017 Program	
b. One-Time FY 2018 Increases	
c. Program Growth in FY 2018	
1) Aegis BMD SM-3 Program	19,426
2) Aegis BMD program	11,532
3) BMDS AN/TPY-2 Program	8,497

MISSILE DEFENSE AGENCY
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	<u>TOTAL</u>
4) Ground Base Program	6,332
5) THAAD Program	4,460
9. Program Decreases	
a. Annualization of FY 2017 Program Decreases	
b. One-Time FY 2017 Increases	
1) BMDS AN/TPY-2 Program	-10,106
c. Program Decreases in FY 2018	
1) Aegis Ashore Romania	-9,865
2) BMDS AN/TPY-2 Program	-2,779
FY 2018 Budget Request	504,058

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

	FY 2016 <u>Actual</u>	Price <u>Change</u>	Program <u>Change</u>	FY 2017 <u>Estimate</u>	Price <u>Change</u>	Program <u>Change</u>	FY 2018 <u>Estimate</u>
MDA	422,950	8,135	36,190	467,275	9,286	27,497	504,058

I. Description of Operations 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.

BMD AWS sustainment includes In-Service Engineering Agent (ISEA), Lifecycle Support Engineering Agent (LSEA), and Technical Design Agent support for fielded Aegis BMD AWS baselines. Provides engineering services, identification and resolution of BMD software and hardware Aegis Combat System operability deficiencies/issues, fleet maintenance support for BMD ships, certification/delivery of updated weapon systems capabilities, Reliability, Maintainability & Availability analysis/metrics and review/ implementation of maintenance concepts. Provides integrated logistics support such as technical

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I. Description of Operations Financed (cont.)

documentation maintenance and resolution of Diminishing Manufacturing Sources/obsolete material issues.

Operational sustainment support for the Aegis Ashore Romania site and equipment includes BMD unique AWS sparing and consumables during interim support, facility operations including transportation, power and communications, and Command, Control, Communications, Computers and Intelligence (C4I), ISEA and LSEA engineering. Also provides portable Aegis BMD Mission Planning tools for Fleet Maritime Operation Centers, Test Site Support, development and revision of regional and homeland defense plans and Pre-Planned Responses and Global Force Management requests.

B. Ground Base 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 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

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I. Description of Operations Financed (cont.)

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. Funding also provides Electronic Equipment Unit (EEU) retrofits at Letterkenny Army Depot to enhance radar capability, and 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 US 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 Depot level maintenance for THAAD missile defense unique equipment. 2.) 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.) Interactive Electronic Technical Manual (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 Delta training for fielded units required due to design changes for replacement soldiers. 9.) Special Tools and Test Equipment for the organic depot. 10.) RESET program. %%%

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II. Force Structure Summary:

N/A

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III. Financial Summary (\$ in thousands)

	FY 2017							FY 2018 <u>Estimate</u>
	FY 2016 <u>Actual</u>	Budget <u>Request</u>	<u>Congressional Action</u>			Current <u>Estimate</u>		
			<u>Amount</u>	<u>Percent</u>	<u>Appropriated</u>			
A. BA Subactivities								
4. Administrative and Servicewide Activities	422,950	467,275	0	0.0	0	467,275	504,058	
Aegis BMD Program	43,500	73,039	0	0.0	0	73,039	96,346	
BMDS AN/TPY-2 Radars Program	187,820	192,856	0	0.0	0	192,856	191,055	
Ground Base Midcourse Program	133,705	129,281	0	0.0	0	129,281	137,896	
THAAD Program	57,925	72,099	0	0.0	0	72,099	78,761	
Total	422,950	467,275	0	0.0	0	467,275	504,058	

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III. Financial Summary (\$ in thousands)

<u>B. Reconciliation Summary</u>	<u>Change</u> <u>FY 2017/FY 2017</u>	<u>Change</u> <u>FY 2017/FY 2018</u>
Baseline Funding	467,275	467,275
Congressional Adjustments (Distributed)		
Congressional Adjustments (Undistributed)		
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)		
Subtotal Appropriated Amount	467,275	
Fact-of-Life Changes (2017 to 2017 Only)		
Subtotal Baseline Funding	467,275	
Supplemental		
Reprogrammings		
Price Changes		9,286
Functional Transfers		
Program Changes		27,497
Current Estimate	467,275	504,058
Less: Wartime Supplemental		
Normalized Current Estimate	467,275	

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III. Financial Summary (\$ in thousands)

<u>C. Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
FY 2017 President's Budget Request (Amended, if applicable)		467,275
1. Congressional Adjustments		
a. Distributed Adjustments		
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
FY 2017 Appropriated Amount		467,275
2. War-Related and Disaster Supplemental Appropriations		
3. Fact-of-Life Changes		
FY 2017 Baseline Funding		467,275
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2017 Estimate		467,275
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings		
FY 2017 Normalized Current Estimate		467,275
6. Price Change		9,286
7. Functional Transfers		
8. Program Increases		50,247
a. Annualization of New FY 2017 Program		
b. One-Time FY 2018 Increases		
c. Program Growth in FY 2018		
1) Aegis BMD SM-3 Program	19,426	
Growth is due to increased number of SM-3 missile recertification, Third Stage Rocket Motor Nozzle retrofit installations reliability improvements. (FY 2017 Baseline: \$54,691 thousand)		
2) Aegis BMD program	11,532	
+\$10,000 Growth provides additional Aegis BMD Test Ship operations and maintenance support.		

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III. Financial Summary (\$ in thousands)

C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
+\$1,532 Growth provides for annual BMD 4.x software maintenance as opposed to every other year.		
(FY 2017 Baseline: \$73,039 thousand)		
3) BMDS AN/TPY-2 Program	8,497	
+\$7,459 Growth is due to additional COBRA DANE sustainment costs to redesign obsolete or unreliable components to extend the service life of CD.		
+\$1,038 Additional sustainment cost for Terminal Mode radar deployed to the Republic of Korea. (FY 2017 Baseline: \$172,556 thousand)		
4) Ground Base Program	6,332	
+\$5,309 Growth to address the backlog of critical Facility Sustainment, Restoration, and Modernization (FSRM) projects at FGA and Vandenberg AFB, CA.		
+\$1,023 Growth is due to sustainment of ten additional fielded GBIs at Fort Greely, AK (FGA) (FY 2017 Baseline: \$129,281 thousand)		
5) THAAD Program	4,460	
+\$3,122 Growth is due to transition of the 7th THAAD battery to an operational status which increases operational tempo.		
+\$1,338 Growth is due to the Army Global Posture Strategy requires a deployment of a second OCONUS		

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III. Financial Summary (\$ in thousands)

C. <u>Reconciliation of Increases and Decreases</u>	<u>Amount</u>	<u>Totals</u>
THAAD battery, increasing costs to support the Army mission. (FY 2017 Baseline: \$72,099 thousand)		
9. Program Decreases		-22,750
a. Annualization of FY 2017 Program Decreases		
b. One-Time FY 2017 Increases		
1) BMDS AN/TPY-2 Program	-10,106	
Decrease due to completion of AN/TPY-2 Prime Power Unit (PPU) Deep Maintenance. (FY 2017 Baseline: \$172,556 thousand)		
c. Program Decreases in FY 2018		
1) Aegis Ashore Romania	-9,865	
Decrease due to Aegis Ashore Romania Site Sustainment transitioned to US Navy in FY 2018. (FY 2017 Baseline: \$13,865 thousand)		
2) BMDS AN/TPY-2 Program	-2,779	
Decrease in contractor logistics support (FY 2017 Baseline: \$172,556 thousand)		
FY 2018 Budget Request		504,058

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IV. Performance Criteria and Evaluation Summary:

	FY 2016 <u>Estimate</u>	FY 2017 <u>Estimate</u>	FY 2018 <u>Estimate</u>
1. Operational Support	422,950	446,975	504,058
Aegis Program	43,500	73,039	96,346
Ground Base Midcourse	133,705	129,281	137,896
BMDS AN/TPY-2 Radars	187,820	172,556	191,055
THAAD Program	57,925	72,099	78,761
Total Operations and Maintenance, Defense Wide	422,950	446,975	504,058

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

A. Aegis Ballistic Missile Defense (BMD). The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing United States 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 2017, there will be 34 BMDS capable ships.

B. Ground Base 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. By the end of CY 2017 MDA

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IV. Performance Criteria and Evaluation Summary:

will support 44 operationally deployed GBIs located at FGA (40 GBIs) and 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). IDTs are currently located at FGA, VAFB, EAS, and Fort Drum, New York.

C. Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars. MDA sustains 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars including 5 stand-alone forward-based radars, and 7 radars which are a component of THAAD battery configuration. Army force structure for Missile Defense Batteries (MDB) is currently set at 5 batteries with 5 AN/TPY-2 forward-based radars operated at fixed radar sites by 65 Soldiers. The battery is organized to conduct deployments 24 hours a day, 7 days a week, 365 days a year. This operational tempo is currently met by a combination of CCLS and soldiers operating and maintaining 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 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Change FY 2016/ FY 2017</u>	<u>Change FY 2017/ FY 2018</u>
<u>Contractor FTEs (Total)</u>	<u>853</u>	<u>964</u>	<u>986</u>	<u>111</u>	<u>22</u>

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.

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

<u>OP 32 Line</u>	<u>FY 2016</u> <u>Actual</u>	<u>Change</u> <u>FY 2016/FY 2017</u>		<u>FY 2017</u> <u>Estimate</u>	<u>Change</u> <u>FY 2017/FY 2018</u>		<u>FY 2018</u> <u>Estimate</u>
		<u>Price</u>	<u>Program</u>		<u>Price</u>	<u>Program</u>	
308 Travel of Persons	299	6	34	339	7	-5	341
399 Total Travel	299	6	34	339	7	-5	341
401 DLA Energy (Fuel Products)	1,081	65	-67	1,079	-4	32	1,107
499 Total Supplies & Materials	1,081	65	-67	1,079	-4	32	1,107
771 Commercial Transport	4,178	79	-2,354	1,903	38	2	1,943
799 Total Transportation	4,178	79	-2,354	1,903	38	2	1,943
912 Rental Payments to GSA (SLUC)	0	0	244	244	5	-2	247
913 Purchased Utilities (Non-Fund)	4,542	86	-1,589	3,039	61	-136	2,964
914 Purchased Communications (Non-Fund)	2,751	52	-1,589	1,214	24	5	1,243
915 Rents (Non-GSA)	238	5	-5	238	5	1	244
917 Postal Services (U.S.P.S)	5	0	0	5	0	0	5
920 Supplies & Materials (Non-Fund)	22,567	429	-3,738	19,258	385	3,500	23,143
922 Equipment Maintenance By Contract	198,583	3,773	-24,716	177,640	3,553	8,470	189,663
923 Facilities Sust, Rest, & Mod by Contract	45,244	860	80,883	126,987	2,540	9,061	138,588
925 Equipment Purchases (Non-Fund)	988	19	15,374	16,381	328	-524	16,185
930 Other Depot Maintenance (Non-Fund)	28,927	550	-11,045	18,432	369	13,590	32,391
932 Mgt Prof Support Svcs	22,330	424	-10,813	11,941	239	-20	12,160
933 Studies, Analysis & Eval	5,893	112	-2,320	3,685	74	1,484	5,243
934 Engineering & Tech Svcs	6,845	130	-4,835	2,140	43	405	2,588
937 Locally Purchased Fuel (Non-Fund)	1,533	92	-115	1,510	-6	16	1,520
985 Research & Development, Contracts	471	0	-471	0	0	0	0
987 Other Intra-Govt Purch	24,390	463	4,387	29,240	585	-8,316	21,509
989 Other Services	941	18	21,930	22,889	458	1,630	24,977
990 IT Contract Support Services	51,144	972	-23,005	29,111	582	-1,696	27,997
999 Total Other Purchases	417,392	7,985	38,577	463,954	9,245	27,468	500,667

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<u>OP 32 Line</u>	FY 2016 <u>Actual</u>	Change <u>FY 2016/FY 2017</u>		FY 2017 <u>Estimate</u>	Change <u>FY 2017/FY 2018</u>		FY 2018 <u>Estimate</u>
		<u>Price</u>	<u>Program</u>		<u>Price</u>	<u>Program</u>	
Total	422,950	8,135	36,190	467,275	9,286	27,497	504,058

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CONTRACT SERVICES FUNDING
(\$ in Millions)

Line	By PB/OP-32 Inflation Category Code	FY 2016	FY 2017	FY 2017	FY 2018	FY 2018
		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)	3	1	0	1	0
	Total 23.1 - Communications, Utilities, and Misc. Charges	3	1	0	1	0
932	Mgmt and Professional Support Services	22	12	0	12	0
934	Engineering and Technical Services	0	2	0	3	0
	Total 25.1 - Advisory and Assistance Services	22	14	0	15	0
989	Other Contracts	1	23	0	25	0
926	Other Overseas Purchases	0				
	Total 25.2 - Other Services	1	23	0	25	0
987	Other Intra-Government Purchases	24	29	0	25	0
	Total 25.3 - Other Goods and Services from Federal Sources	24	29	0	25	0
923	Facility Maintenance	45	127	0	139	0
	Total 25.4 - Operation and Maintenance of Facilities	45	127	0	139	0
985	Research and Development Contracts	1				
	Total 25.5 - Research and Development Contracts	1	0	0	0	0
922	Equipment Maintenance - Contract	196	178	0	190	0
930	Other Depot Maintenance (Non-Fund)	29	18	0	32	0
990	IT Contract Support Services	51	29	0	28	0
	Total 25.7 - Operation and Maintenance of Equipment	276	225	0	250	0
964	Subsistence Contracts					
	Total 25.8- Subsistence and Support of Persons	0	0	0	0	0
	Total	372	419	0	455	0

Source: Program Resources Collection Process as of 6 December, 2016

Numbers may not add due to rounding

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

Contractor Full-Time Equivalents

Line	By PB/OP-32 Inflation Category Code	FY 2016	FY 2017	FY 2017	FY 2018	FY 2018
		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)	4	4	0	4	0
	Total 23.1 - Communications, Utilities and Misc. Charges	4	4	0	4	0
932	Mgmt and Professional Support Services	29	29	0	29	0
934	Engineering and Technical Services	33	25		27	
	Total 25.1 - Advisory and Assistance Services	62	54	0	56	0
989	Other Contracts	12	31	0	31	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	12	31	0	31	0
987	Other Intra-Government Purchases	1	1	0	1	0
	Total 25.3 - Other Goods and Services from Federal Sources	1	1	0	1	0
923	Facility Maintenance	276	376	0	371	0
	Total 25.4 - Operation and Maintenance of Facilities	276	376	0	371	0
985	Research and Development Contracts					
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	444	444	0	468	0
930	Other Depot Maintenance (Non-Fund)	22	22		23	
990	IT Contract Support Services	32	32		32	0
	Total 25.7 - Operation and Maintenance of Equipment	498	498	0	523	0
	Total	853	964	0	986	0

Source: Program Resources Collection Process as of 6 December, 2016

Numbers may not add due to rounding

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

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.

BMD AWS sustainment includes In-Service Engineering Agent (ISEA), Lifecycle Support Engineering Agent (LSEA), and Technical Design Agent support for fielded Aegis BMD AWS baselines. Provides engineering services, identification and resolution of BMD software and hardware Aegis Combat System operability deficiencies/issues, fleet maintenance support for BMD ships, certification/delivery of updated weapon systems capabilities, Reliability, Maintainability & Availability analysis/metrics and review/implementation of maintenance concepts. Provides integrated logistics support such as technical documentation maintenance and resolution of Diminishing Manufacturing Sources/obsolete material issues.

MISSILE DEFENSE AGENCY
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Operational sustainment support for the Aegis Ashore Romania site and equipment includes BMD unique AWS sparing and consumables during interim support, facility operations including transportation, power and communications, and Command, Control, Communications, Computers and Intelligence (C4I), ISEA and LSEA engineering. Also provides portable Aegis BMD Mission Planning tools for Fleet Maritime Operation Centers, Test Site Support, development and revision of regional and homeland defense plans and Pre-Planned Responses and Global Force Management requests.

B. Ground Base 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 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. Funding also provides Electronic Equipment Unit (EEU) retrofits at Letterkenny Army Depot to enhance radar capability, and 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 US 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 Depot level maintenance for THAAD missile defense unique equipment. 2.) 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.) Interactive Electronic Technical Manual (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 Delta

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
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training for fielded units required due to design changes for replacement soldiers. 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 growth initiates software sustainment for all BMD 4 baselines. The increase supports maintenance for Aegis Test Ships, and maintenance on an increasing quantity of in-service missiles.

B. Ground Base Midcourse program growth is due to sustainment of ten additional fielded GBIs at Fort Greely, AK (FGA) and to address the backlog of critical Facility Sustainment, Restoration, and Modernization (FSRM) projects at FGA and Vandenberg AFB, CA.

C. Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars program growth is due to additional sustainment for the Cobra Dane Radar in accordance with the cost sharing agreement with the Air Force to provide radar operations, on-site maintenance, and depot level support. Additional sustainment costs include mission critical spares for components with increased failure rates, critical spare vendor qualifications, depot level support (not covered under prior MDA-AFSPC agreement), and additional initiatives to replace Transmitter Groups and redesign the Traveling Wave Tube. Additional sustainment cost for Terminal Mode radar deployed to the Republic of Korea.

D. THAAD program growth is due to 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.

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

<u>Appropriation/Fund</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>
I. Management & Professional Support Services			
FFRDC Work	0	305	305
Non-FFRDC Work	<u>22,330</u>	<u>11,636</u>	<u>11,855</u>
Subtotal	22,330	11,941	12,160
II. Studies, Analysis & Evaluations			
FFRDC Work	0	0	0
Non-FFRDC Work	<u>5,893</u>	<u>3,685</u>	<u>5,243</u>
Subtotal	5,893	3,685	5,243
III. Engineering & Technical Services			
FFRDC Work	0	1,143	1,367
Non-FFRDC Work	<u>6,845</u>	<u>997</u>	<u>1,221</u>
Subtotal	6,845	2,140	2,588
TOTAL			
FFRDC Work	0	1,448	1,672
Non-FFRDC Work	35,068	16,318	18,319
Reimbursable	0	0	0

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
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Explanation of Funding Changes (FY 2016 to FY 2017):

The FY2016 to FY2017 growth provides additional engineering and technical services required to sustain new Aegis BMD computer program baseline variants (BMD 3.6 and 4.0) after completion of development and operational testing. Growth is also attributed to 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 and sustainment of the Upgraded Early Warning Radars and COBRA DANE Radar.

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.

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

Missile Defense Agency

(Dollars in Thousands)

Appropriation/Fund: RDT&E (0400)		FY 2016	FY 2017	FY 2018
Management & Professional Support Services				
FFRDC Work	932	14,726	7,206	7,832
Non-FFRDC Work	932	<u>444,832</u>	<u>217,676</u>	<u>236,933</u>
Sub-Total		459,558	224,882	244,765
Studies, Analysis & Evaluations				
FFRDC Work	933	1,239	3,348	3,198
Non-FFRDC Work	933	<u>2,345</u>	<u>6,436</u>	<u>6,152</u>
Sub-Total		3,584	9,784	9,350
Engineering & Technical Services				
FFRDC Work	934	10,372	115,877	115,899
Non-FFRDC Work	934	<u>11,903</u>	<u>151,862</u>	<u>151,766</u>
Sub-Total		22,275	267,739	267,665
TOTAL		485,417	502,405	521,780
FFRDC Work		26,337	126,431	126,929
Non-FFRDC Work		459,080	375,974	394,851

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MISSILE DEFENSE AGENCY
 Operation and Maintenance, Defense-Wide
 Fiscal Year (FY) 2018 President's Budget

MISSILE DEFENSE AGENCY	<u>Foreign National</u>			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>
1. FY 2016 FTEs	0	0	0	0
2. FY 2017 FTEs	0	0	0	0
3. FY 2018 FTEs	0	0	0	0

MDA - Operation and Maintenance (O&M)	<u>Foreign National</u>			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>
1. FY 2016 FTEs	0	0	0	0
2. FY 2017 FTEs	0	0	0	0
3. FY 2018 FTEs	0	0	0	0

MDA - Research, Development, Test and Evaluation (RDT&E)	<u>Foreign National</u>			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>
1. FY 2016 FTEs	0	0	0	0
2. FY 2017 FTEs	0	0	0	0
3. FY 2018 FTEs	0	0	0	0

MDA - Defense Working Capital Fund (DWCF)	<u>Foreign National</u>			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>
1. FY 2016 FTEs	0	0	0	0
2. FY 2017 FTEs	0	0	0	0
3. FY 2018 FTEs	0	0	0	0

4. SUMMARY	<u>Foreign National</u>			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>

FY 2016

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
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RDT&E Total	2,380	0	0	2,380
Direct Funded	2,328	0	0	2,328
Reimbursable Funded	52	0	0	52
Total Component	2,380	0	0	2,380
Direct Funded	2,328	0	0	2,328
Reimbursable Funded	52	0	0	52
FY 2017				
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	2,282	0	0	2,282
Direct Funded	2,249	0	0	2,249
Reimbursable Funded	33	0	0	33
Total Component	2,282	0	0	2,282
Direct Funded	2,249	0	0	2,249
Reimbursable Funded	33	0	0	33

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2018 President's Budget

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

Change from FY 2016 to FY 2017:

FY 2016 FTE of 2,380 reflect actuals for the year, while the programmed FY 2016 civilian FTE was 2,551. MDA under executed its civilian FTE in FY2016 due to the continuation of an strategic hiring pause where all positions were scrutinized to ensure the agency was postured for out-year reductions and allocated our manpower to our highest priority missions. The FY 2017 FTE total of 2,388 reflects the 2017 President's Budget Submission. FY 2017 programmed FTE reduction from the FY 2016 programmed FTE reflects the continued implementation of civilian FTE efficiencies resulting from the Department's Civilian Workload Analysis initiative and the 25% reduction to Management Headquarters civilian FTE.

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.

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Missile Defense Agency

Fiscal Year 2018

President's Budget Submittal

Military Construction Exhibit



May 2017

**MISSILE DEFENSE AGENCY
 FY 2018 MILITARY CONSTRUCTION
 PRESIDENT'S BUDGET SUBMITTAL
 DESCRIPTIVE SUMMARIES**

(\$ in Thousands)

<u>Program</u>	<u>Authorization</u>	<u>Appropriation</u>
Major Construction	0	0
Unspecified Minor Construction	3,000	3,000
MILCON Planning & Design	<u>0</u>	<u>0</u>
TOTAL MILITARY CONSTRUCTION	3,000	3,000

**MISSILE DEFENSE AGENCY
 FY 2018 MILITARY CONSTRUCTION, DEFENSE-WIDE
 PROJECT SUMMARY
 BY LOCATION**

(\$ in Thousands)

<u>State/Country/Installation/Project</u>	<u>Authorization Request</u>	<u>Approp. Request</u>	<u>New/Current Mission</u>	<u>Page No.</u>
Major Construction	0	0		
Unspecified Minor Construction	3,000	3,000		
MILCON Planning and Design	0	0		
TOTAL MILITARY CONSTRUCTION	3,000	3,000		

1. COMPONENT MDA	FY 2018 MILITARY CONSTRUCTION PROJECT DATA	2. DATE May 2017
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3. INSTALLATION AND LOCATION Various Worldwide Locations	4. PROJECT TITLE Unspecified Minor Construction
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5. PROGRAM ELEMENT N/A	6. CATEGORY CODE N/A	7. PROJECT NUMBER N/A	8. PROJECT COST (\$000) 3,000
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9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)

Unspecified Minor Construction	LS			3,000
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<u>SUBTOTAL</u>				3,000
CONTINGENCY PERCENT (0.0%)				3,000
TOTAL CONTRACT COST				0
SUPERVISION, INSPECTION & OVERHEAD (0.0%)				3,000
TOTAL REQUEST				3,000
TOTAL REQUEST (ROUNDED)				(0)
INSTALLED EQPT-OTHER APPROPRIATIONS				

10. DESCRIPTION OF PROPOSED CONSTRUCTION: Provide a lump sum amount for unspecified construction projects, not otherwise authorized by law, having a funded cost of \$3 million or less, including normal construction, alteration or conversion of permanent or temporary facilities and projects having a funded cost of \$4 million or less that are intended solely to correct a deficiency that is life-threatening, health-threatening, or safety-threatening, in accordance with 10 USC Section 2805.

11. REQUIREMENT : As required

REQUIREMENT: These funds provide Missile Defense Agency the capability to react in FY 2018 to requirements for construction, alteration, or modification of facilities resulting from unforeseen situations affecting mission performance or safety of life or property. Included would be projects to support mission critical research and development requirements of the Ballistic Missile Defense System.

All required National Environmental Policy Act and/or Executive Order 12114 analyses will be completed prior to the start of construction for each unspecified construction project.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD07 / THAAD
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604876C, 0603881C	Other Related Program Elements: 0604876C, 0603881C
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Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	193	36	36	34	-	34	32	30	28	21	43	453
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,150.140	447.971	520.608	451.592	-	451.592	440.883	405.015	420.829	429.463	731.422	6,997.923
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,150.140	447.971	520.608	451.592	-	451.592	440.883	405.015	420.829	429.463	731.422	6,997.923
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,150.140	447.971	520.608	451.592	-	451.592	440.883	405.015	420.829	429.463	731.422	6,997.923
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	11.127	10.100	12.052	11.786	-	11.786	12.029	12.029	12.771	12.771	14.731	11.873
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	16.322	12.444	14.461	13.282	-	13.282	13.778	13.501	15.030	20.451	17.010	15.448

Description:

Terminal High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). THAAD enhances the TDS by deepening, complementing, and extending the BMDS battlespace and capability to engage ballistic targets in the late mid-course and terminal phases of their trajectory. THAAD Army Navy / Transportable Radar Surveillance - Model 2 (AN/TPY-2) is a surveillance sensor providing data to cue other elements of the BMDS. The THAAD system, in conjunction with the fielded Phased Array Tracking Radar to Intercept on Target (PATRIOT) system, provides the TDS for the Missile Defense Agency (MDA) objective of enhancing the BMDS capability. Five major components (Interceptors, Launchers, AN/TPY-2 Radar, THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSG), and Peculiar Support Equipment) comprise the THAAD system.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity:
0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency

P-1 Line Item Number / Title:
MD07 / THAAD

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604876C, 0603881C **Other Related Program Elements:** 0604876C, 0603881C

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	THAAD	P-5a, P-21	B		193 / 3,150.140	36 / 447.971	36 / 520.608	34 / 451.592	- / -	34 / 451.592
P-40	Total Gross/Weapon System Cost				193 / 3,150.140	36 / 447.971	36 / 520.608	34 / 451.592	- / -	34 / 451.592

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The FY 2018 budget decrease is due to completion of radar training device procurement in FY 2017, as well as a decrease in THAAD interceptor procurement quantity from 36 in FY 2017 to 34 in FY 2018. In addition to the 34 THAAD Interceptors, the FY 2018 budget request includes the THAAD Stockpile Reliability Program, obsolescence mitigation efforts, and non-recurring New Equipment Training (NET) for Battery 7, which was delivered in FY 2017.

In FY 2018 MDA will continue a "synergy" lot buy approach to THAAD Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year funding. By utilizing this approach, MDA will achieve savings in material costs in multiple fiscal years. This will result in a higher Interceptor quantity buy at a lower average unit price than if buys were not combined.

The PB 2018 interceptor procurement plan supports the Army's deployment plan for seven (7) THAAD batteries.

The first two (2) THAAD Batteries were Research Development Test and Evaluation (RDT&E) funded in Program Element (PE) 0603881C, thus not included in the costs above.

"Procurement Quantity" and "Flyaway Unit Cost" above represent interceptors only, but the "Net Procurement" cost above includes the costs of all hardware. Prior FYs funding included procurement of ground components, which affected the "Gross Weapon System Unit Cost".

UNCLASSIFIED

Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: - / THAAD

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (<i>Units in Each</i>)	193	36	36	34	-	34
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,150.140	447.971	520.608	451.592	-	451.592
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,150.140	447.971	520.608	451.592	-	451.592
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,150.140	447.971	520.608	451.592	-	451.592

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	16.322	12.444	14.461	13.282	-	13.282

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Interceptor ^(†)	11.127	193	2,147.434	10.091	36	363.273	12.052	36	433.871	11.786	34	400.734	-	-	-	11.786	34	400.734
Launcher ^(†)	8.110	36	291.977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Equipment	24.998	6	149.986	10.221	1	10.221	-	-	-	-	-	-	-	-	-	-	-	-
TFCC Tactical Station Group ^(†)	10.522	8	84.179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	2,673.576	-	-	373.494	-	-	433.871	-	-	400.734	-	-	-	-	-	400.734
<i>Subtotal: Hardware Cost</i>	-	-	2,673.576	-	-	373.494	-	-	433.871	-	-	400.734	-	-	-	-	-	400.734
Support Cost																		
Obsolescence and Modifications	24.270	3	72.811	22.623	1	22.623	30.418	1	30.418	26.883	1	26.883	-	-	-	26.883	1	26.883
Production Support & Testing	82.949	4	331.794	25.880	1	25.880	13.190	1	13.190	16.312	1	16.312	-	-	-	16.312	1	16.312
Training	17.990	4	71.959	25.974	1	25.974	43.129	1	43.129	7.663	1	7.663	-	-	-	7.663	1	7.663
<i>Subtotal: Support Cost</i>	-	-	476.564	-	-	74.477	-	-	86.737	-	-	50.858	-	-	-	-	-	50.858
Gross/Weapon System Cost	16.322	193	3,150.140	12.444	36	447.971	14.461	36	520.608	13.282	34	451.592	-	-	-	13.282	34	451.592

Remarks:

"Procurement Quantity" above represents interceptors only, but the "Net Procurement" cost above includes the costs of all hardware. Prior FYs funding includes procurement of ground components, which affects the "Gross Weapon System Unit Cost". Support Equipment captures miscellaneous items such as THAAD Active Leak Sensor System (TALSS) and Battery Support Center (BSC) that support the THAAD Batteries and varies from year to year.

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: - / THAAD
ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:	

The decrease in the Interceptor line above is driven by a decrease in THAAD interceptor procurement quantity from 36 in FY 2017 to 34 in FY 2018.

The decrease in the Training line from FY 2017 to FY 2018 is due to completion of training device procurement in FY 2017, with only fielding of Battery 7 remaining in FY 2018. The FY 2017 training request included funds to support Battery 6 New Equipment Training (NET), as well as procure the final RTD and spares to support the Institutional Training Base (ITB) used to train THAAD soldiers and AN/TPY-2 Forward Based Mode soldiers. In FY 2018, funding is requested solely for Battery 7 New Equipment Training (NET), as no additional RTDs are required.

Obsolescence encompasses mitigation activities that protect the system design and ensure a producible technical data package. This preserves an affordable future product cost within an acceptable production schedule. Examples of mitigation activities include component replacement parts, materials, qualification, alternative source/parts qualification, and piece part/material bridge buys to support subsequent years' production lots.

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: - / THAAD
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Interceptor - Lot 1 ^(†)		2010	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2011	Jul 2012	26	14.480	Y		Oct 2009
Interceptor - Lot 2 ^(†)		2011	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2011	Jul 2013	22	12.100	Y		Oct 2009
Interceptor - Lot 4 ^(†)		2012	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Aug 2012	Jun 2015	46	11.022	Y		Aug 2011
Interceptor - Lot 5 ^(†)		2013	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Sep 2013	Aug 2017	34	11.022	Y		Aug 2011
Interceptor - Lot 6 ^(†)		2014	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2013	Mar 2018	27	11.022	Y		Jun 2013
Interceptor - Lot 7 ^(†)		2015	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2015	Sep 2018	38	10.100	Y		Mar 2014
Launcher - Lot 1 ^(†)		2010	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	May 2011	Apr 2013	6	9.170	Y		Oct 2009
Launcher - Lot 3 ^(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	May 2014	6	9.130	Y		Aug 2011
Launcher - Lot 2 ^(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	May 2011	Oct 2013	6	9.130	Y		Oct 2009
Launcher - Lot 4 ^(†)		2012	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Nov 2014	6	7.490	Y		Aug 2011
Launcher - Lot 6 ^(†)		2014	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Aug 2014	Mar 2016	12	9.050	Y		Jun 2013
TFCC Tactical Station Group - Lot 2 ^(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Mar 2011	May 2013	4	10.100	Y		Oct 2009
TFCC Tactical Station Group - Lot 3 ^(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Aug 2014	2	10.100	Y		Aug 2011
TFCC Tactical Station Group - Lot 4 ^(†)		2012	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Oct 2014	2	9.260	Y		Aug 2011

^(†) indicates the presence of a P-21

Remarks:

- Lot 3 Interceptors were removed due to a Congressional Mark in FY 2011; - Lot numbers relate to groupings in fiscal years and no Launcher or Tactical Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) were scheduled for procurement in FY 2013, therefore Lot 5 is an interceptor only Lot; - Delivery of Battery 3 completed in FY 2013; - Delivery of Battery 4 completed in FY 2014; - Delivery of Battery 5 completed in FY 2015; - Delivery of Battery 6 completed in FY 2016; - Delivery of Battery 7 completes in FY 2017; - Concurrent with the Lot 4, 5, and 6 (FY 2012-FY 2014) U.S. procurements, MDA THAAD is executing a Foreign Military Sales (FMS) Case for two (2) Batteries and 192 Interceptors. The magnitude of the USG and FMS combined buy reduced the unit price for those Lots, and an overlap in period of performance with FMS interceptors also benefited the unit price for Lots 7 and 8 (FY 2015 and FY 2016).

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency	Date: May 2017
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Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: - / THAAD
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2011														Fiscal Year 2012														B A L A N C E	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2010	BAL DUE AS OF 1 OCT	Calendar Year 2011														Calendar Year 2012														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
Interceptor - Lot 1																																			
1		2010	MDA	26	0	26																								1			25		
Interceptor - Lot 2																																			
2		2011	MDA	22	0	22																										22			
Interceptor - Lot 4																																			
3		2012	MDA	46	0	46																										46			
Interceptor - Lot 5																																			
4		2013	MDA	34	0	34																										34			
Interceptor - Lot 6																																			
5		2014	MDA	27	0	27																										27			
Interceptor - Lot 7																																			
6		2015	MDA	38	0	38																										38			
Launcher - Lot 1																																			
7		2010	MDA	6	0	6																										6			
Launcher - Lot 3																																			
8		2011	MDA	6	0	6																										6			
Launcher - Lot 2																																			
9		2011	MDA	6	0	6																										6			
Launcher - Lot 4																																			
10		2012	MDA	6	0	6																										6			
Launcher - Lot 6																																			
11		2014	MDA	12	0	12																										12			
TFCC Tactical Station Group - Lot 2																																			
12		2011	MDA	4	0	4																										4			
TFCC Tactical Station Group - Lot 3																																			
13		2011	MDA	2	0	2																										2			
TFCC Tactical Station Group - Lot 4																																			
14		2012	MDA	2	0	2																										2			

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD07 / THAAD **Item Number / Title [DODIC]:** - / THAAD

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2013													Fiscal Year 2014												BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2012	BAL DUE AS OF 1 OCT	Calendar Year 2013													Calendar Year 2014												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P	
Interceptor - Lot 1																																
	1	2010	MDA	26	1	25	-	-	-	-	-	-	3	6	6	7	3													0		
Interceptor - Lot 2																																
	2	2011	MDA	22	0	22	-	-	-	-	-	-	-	-	-	4	4	4	3	3	3	-	-	-	1				0			
Interceptor - Lot 4																																
	3	2012	MDA	46	0	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46			
Interceptor - Lot 5																																
	4	2013	MDA	34	0	34													A	-	-	-	-	-	-	-	-	-	34			
Interceptor - Lot 6																																
	5	2014	MDA	27	0	27															A	-	-	-	-	-	-	-	27			
Interceptor - Lot 7																																
	6	2015	MDA	38	0	38																						38				
Launcher - Lot 1																																
	7	2010	MDA	6	0	6	-	-	-	-	-	-	1	2	-	-	3											0				
Launcher - Lot 3																																
	8	2011	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1			
Launcher - Lot 2																																
	9	2011	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1				0				
Launcher - Lot 4																																
	10	2012	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6				
Launcher - Lot 6																																
	11	2014	MDA	12	0	12																					A	-	12			
TFCC Tactical Station Group - Lot 2																																
	12	2011	MDA	4	0	4	-	-	-	-	-	-	1	1	-	-	-	-	-	-	2							0				
TFCC Tactical Station Group - Lot 3																																
	13	2011	MDA	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0				
TFCC Tactical Station Group - Lot 4																																
	14	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2				
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S		
							C	O	E	A	E	A	A	A	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S		
							T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P		

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: - / THAAD
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2015														Fiscal Year 2016												BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015														Calendar Year 2016												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Interceptor - Lot 1																																	
	1	2010	MDA	26	26	0																							0				
Interceptor - Lot 2																																	
	2	2011	MDA	22	22	0																							0				
Interceptor - Lot 4																																	
	3	2012	MDA	46	0	46	-	-	-	-	-	-	-	-	3	-	-	-	-	-	2	7	-	-	-	-	-	12	-	-	-	22	
Interceptor - Lot 5																																	
	4	2013	MDA	34	0	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34		
Interceptor - Lot 6																																	
	5	2014	MDA	27	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27		
Interceptor - Lot 7																																	
	6	2015	MDA	38	0	38																									38		
Launcher - Lot 1																																	
	7	2010	MDA	6	6	0																									0		
Launcher - Lot 3																																	
	8	2011	MDA	6	5	1	1																								0		
Launcher - Lot 2																																	
	9	2011	MDA	6	6	0																									0		
Launcher - Lot 4																																	
	10	2012	MDA	6	0	6	-	1	1	1	1	1	1																		0		
Launcher - Lot 6																																	
	11	2014	MDA	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	1	2	1	2
TFCC Tactical Station Group - Lot 2																																	
	12	2011	MDA	4	4	0																									0		
TFCC Tactical Station Group - Lot 3																																	
	13	2011	MDA	2	2	0																									0		
TFCC Tactical Station Group - Lot 4																																	
	14	2012	MDA	2	0	2	1	1																								0	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: - / THAAD
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2017													Fiscal Year 2018													BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017													Calendar Year 2018													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Interceptor - Lot 1																																	
	1	2010	MDA	26	26	0																							0				
Interceptor - Lot 2																																	
	2	2011	MDA	22	22	0																							0				
Interceptor - Lot 4																																	
	3	2012	MDA	46	24	22	-	-	-	-	-	-	1	1	9	10	1												0				
Interceptor - Lot 5																																	
	4	2013	MDA	34	0	34	-	-	-	-	-	-	-	-	-	11	3	5	1	-	6	6	2						0				
Interceptor - Lot 6																																	
	5	2014	MDA	27	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	4	5	6	6	0				
Interceptor - Lot 7																																	
	6	2015	MDA	38	0	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	33				
Launcher - Lot 1																																	
	7	2010	MDA	6	6	0																							0				
Launcher - Lot 3																																	
	8	2011	MDA	6	6	0																							0				
Launcher - Lot 2																																	
	9	2011	MDA	6	6	0																							0				
Launcher - Lot 4																																	
	10	2012	MDA	6	6	0																							0				
Launcher - Lot 6																																	
	11	2014	MDA	12	10	2	1	1																					0				
TFCC Tactical Station Group - Lot 2																																	
	12	2011	MDA	4	4	0																							0				
TFCC Tactical Station Group - Lot 3																																	
	13	2011	MDA	2	2	0																							0				
TFCC Tactical Station Group - Lot 4																																	
	14	2012	MDA	2	2	0																							0				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17		P-1 Line Item Number / Title: MD07 / THAAD
Item Number / Title [DODIC]: - / THAAD		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2018	1-8-5 For 2018	MAX For 2018	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Lockheed Martin - Troy, AL	1	4	8	6	6	16	22	6	4	27	31
2	Lockheed Martin - Troy, AL	1	4	8	6	6	28	34	6	4	27	31
3	Lockheed Martin - Troy, AL	1	4	8	6	11	36	47	6	11	36	47
4	Lockheed Martin - Troy, AL	1	4	8	6	12	37	49	6	12	37	49
5	Lockheed Martin - Troy, AL	1	4	8	6	3	43	46	6	3	43	46
6	Lockheed Martin - Troy, AL	1	4	8	6	12	31	43	6	12	31	43
7	Lockheed Martin - Camden, AR	1	1	3	6	8	23	31	6	4	21	25
8	Lockheed Martin - Camden, AR	1	1	2	6	10	22	32	6	4	21	25
9	Lockheed Martin - Camden, AR	1	1	2	6	8	29	37	6	4	21	25
10	Lockheed Martin - Camden, AR	1	1	2	6	10	28	38	6	3	21	24
11	Lockheed Martin - Camden, AR	1	1	2	6	6	22	28	6	4	21	25
12	Lockheed Martin - Camden, AR	1	2	2	6	6	26	32	6	4	24	28
13	Lockheed Martin - Camden, AR	1	1	1	6	10	25	35	6	4	24	28
14	Lockheed Martin - Camden, AR	1	1	1	6	10	27	37	6	3	24	27

Remarks:

- Max Production rate is 8 at normal capacity.

- FMS deliveries of approximately 4 per month from December 2015 to October 2019 are not included.

- In August 2016, interceptor deliveries were paused in order to resolve a cable connector sub-assembly issue. During this time however, production of other interceptor sub-assemblies continued. Interceptor production resumed in November 2016, with associated deliveries to resume in March 2017. Lockheed Martin will work extended work days and additional shifts in order to surge deliveries through September 2018 in order to complete interceptor deliveries in accordance with current contract requirements.

- Manufacturing lead times can vary due to factors such as managing multiple lot buys concurrently to achieve price discounts, increasing the lead time for the second awarded lot buy.

- A Lot 4 Interceptor mission computer static random access memory failure, root cause analysis, corrective action, and incorporation of leap second software update resulted in a seven (7) month production delay from November 2014 to June 2015.

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: - / THAAD

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD09 / AEGIS BMD
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C, 0604881C
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Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	222	46	35	34	-	34	43	35	38	26	Continuing	Continuing
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,637.220	586.712	463.801	425.018	-	425.018	642.762	609.572	675.646	634.023	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	38.738	28.337	28.243	-	-	95.318
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,637.220	586.712	463.801	425.018	-	425.018	604.024	581.235	647.403	634.023	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	38.738	-	38.738	28.337	28.243	-	-	-	95.318
Total Obligation Authority (<i>\$ in Millions</i>)	2,637.220	586.712	463.801	463.756	-	463.756	632.361	609.478	647.403	634.023	Continuing	Continuing

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	11.348	11.402	10.896	10.498	-	10.498	12.706	14.568	15.066	21.095	Continuing	Continuing
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	11.879	12.755	13.251	12.501	-	12.501	14.948	17.416	17.780	24.386	Continuing	Continuing

Description:

Note:

Flyaway unit cost for FY2016 to FY2018 is the SM-3 Block IB only. Beginning in FY 2016, MD09 and MD90 were broken out. MD90 FY16 funds realigned to MD09 for Nosecone Production Improvements and Third Stage Rocket Motor (TSRM) Cold Gas ACS Production efforts. (Note: \$6M realigned back to MD90 after 1 October 2016 for shipset contract award). For FY2019 to FY2022, it represents the weighted average of SM-3 IB and SM-3 IIA. Net Procurement and Gross Weapon System costs includes all hardware and support costs but are detailed in separate P5s. Prior Year procurement quantity of 222 includes 71 Standard Missile-3 (SM-3) Block IAs and 151 SM-3 Block IBs.

The SM-3 Block IB incorporates a two-color, all reflective infrared seeker that enables longer range acquisition and increased threat discrimination. A Throttleable Divert Attitude Control System (TDACS) will provide a more flexible and lower cost alternative to the Solid Divert Attitude Control System (SDACS).

The SM-3 Block IIA incorporates a 21 inch diameter rocket motor propulsion stack, double seeker sensitivity, and a more robust advance Kinetic Warhead (KW). The SM-3 Block IIA will increase the area that can be defended by Aegis Ballistic Missile Defense and increase the probability of kill against a larger threat set. Initial production decision anticipated 4Q FY 2018 with an initial procurement contract starting in FY 2019 for a planned quantity of 6.

For FY 2017

The FY 2017 request procures a quantity of 35 SM-3 Block IB All-Up Rounds (AURs). The request also includes Canisters, Diminishing Manufacturing Sources Mitigation (DMSM), Production Engineering and Ballistic Barriers for SM-3 transportation initial spares, System Life Extension Program (SLEP).

For FY 2018

The FY 2018 request procures 34 SM-3 IB AURs. The request also includes 35 canisters in addition to FY2018 production support efforts (Production Engineering, SM-3 IB Obsolescence, Special Tools and Test Equipment, System Engineering and Integration).

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD09 / AEGIS BMD
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C, 0604881C
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Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Aegis BMD SM-3 Block IB	P-5a, P-21	B		222 / 2,637.220	46 / 586.712	35 / 463.801	34 / 425.018	- / -	34 / 425.018
P-40	Total Gross/Weapon System Cost				222 / 2,637.220	46 / 586.712	35 / 463.801	34 / 425.018	- / -	34 / 425.018

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Justification of each end item reflected in P-5

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: - / Aegis BMD SM-3 Block IB

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	222	46	35	34	-	34
Gross/Weapon System Cost (\$ in Millions)	2,637.220	586.712	463.801	425.018	-	425.018
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,637.220	586.712	463.801	425.018	-	425.018
Plus CY Advance Procurement (\$ in Millions)	-	-	-	38.738	-	38.738
Total Obligation Authority (\$ in Millions)	2,637.220	586.712	463.801	463.756	-	463.756

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	11.879	12.755	13.251	12.501	-	12.501

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
SM-3 Block IA Procurement ^(†)	10.800	71	766.765	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SM-3 Block IB Procurement ^(†)	11.349	151	1,713.643	11.538	46	530.761	10.896	35	381.370	10.498	34	356.928	-	-	-	10.498	34	356.928
<i>Subtotal: Recurring Cost</i>	-	-	<i>2,480.408</i>	-	-	<i>530.761</i>	-	-	<i>381.370</i>	-	-	<i>356.928</i>	-	-	-	-	-	<i>356.928</i>
<i>Subtotal: Flyaway Cost</i>	-	-	<i>2,480.408</i>	-	-	<i>530.761</i>	-	-	<i>381.370</i>	-	-	<i>356.928</i>	-	-	-	-	-	<i>356.928</i>
Hardware Cost																		
Recurring Cost																		
Canisters Procurement SM-3 Block IA/IB	0.226	163	36.794	0.241	45	10.846	0.284	36	10.238	0.260	35	9.091	-	-	-	0.260	35	9.091
<i>Subtotal: Recurring Cost</i>	-	-	<i>36.794</i>	-	-	<i>10.846</i>	-	-	<i>10.238</i>	-	-	<i>9.091</i>	-	-	-	-	-	<i>9.091</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>36.794</i>	-	-	<i>10.846</i>	-	-	<i>10.238</i>	-	-	<i>9.091</i>	-	-	-	-	-	<i>9.091</i>
Support Cost																		
Ballistic Barriers for Transportation SM-3 Block IB	-	-	-	0.252	16	4.035	0.590	12	7.075	0.547	8	4.378	-	-	-	0.547	8	4.378
Diminishing Manufacturing Sources Mitigation	-	-	-	7.570	1	7.570	3.829	1	3.829	3.909	1	3.909	-	-	-	3.909	1	3.909
SM-3 Block IB Investment Spares	-	-	-	-	-	-	9.440	1	9.440	9.718	1	9.718	-	-	-	9.718	1	9.718

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency												Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17						P-1 Line Item Number / Title: MD09 / AEGIS BMD						Item Number / Title [DODIC]: - / Aegis BMD SM-3 Block IB					
ID Code (A=Service Ready, B=Not Service Ready) : B												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
SM-3 Block IB Obsolescence	-	-	-	-	-	-	-	-	-	11.700	1	11.700	-	-	-	11.700	1	11.700
SM-3 Block IB Production Engineering	30.005	4	120.018	33.500	1	33.500	33.701	1	33.701	6.826	1	6.826	-	-	-	6.826	1	6.826
SM-3 Block IB Service Life Evaluation Program	-	-	-	-	-	-	18.148	1	18.148	7.262	1	7.262	-	-	-	7.262	1	7.262
SM-3 Block IB Special Tools and Test Equipment	-	-	-	-	-	-	-	-	-	3.546	1	3.546	-	-	-	3.546	1	3.546
SM-3 Block IB Systems Engineering And Integration	-	-	-	-	-	-	-	-	-	11.660	1	11.660	-	-	-	11.660	1	11.660
<i>Subtotal: Support Cost</i>	-	-	120.018	-	-	45.105	-	-	72.193	-	-	58.999	-	-	-	-	-	58.999
Gross/Weapon System Cost	11.879	222	2,637.220	12.755	46	586.712	13.251	35	463.801	12.501	34	425.018	-	-	-	12.501	34	425.018

Remarks:

- 1/ SM-3 Block IB procurement includes AURS, and product improvements Unit cost depends on number of units procured.
 - 2/ Canisters are required for each SM-3 procured. Historical trends have identified 1 canister/yr breaking during delivery, thus the request for a spare canister.
 - 3/ SM-3 Transportation of Ballistic Barriers are required costs dictated by Joint Service Insensitive Munitions Technical Panel (JSIMTP) and Naval Ordnance Safety and Security Activity (NOSSA) to transport missiles.
 - 4/ Cyber Enhanced Security starts in FY20.
 - 5/ SM-3 Block IB Investment Spares are procured to coincide with the delivery of the missile and are required to support AURs during 4 year maintenance period.
 - 4/ DMSM allows Aegis Ballistic Missile Defense to mitigate the loss, or impending loss, of manufacturers of items or suppliers of items or of raw materials caused by several factors including new or evolving science, detection limits, toxicity values, and regulations related to chemicals and materials resulting in significant impact on the supply chain and industrial base. These issues have the potential to impact future combat systems and safety.
 - 6/ SM-3 Block IB Service Life Evaluation Program includes testing and analysis to demonstrate the safety and suitability of the SM-3 for an extended service life; goal of 16 years.
- In PB-18, Production Support Engineering (PSE) is divided into four sub-categories: Production Engineering, Systems Engineering and Integration, Obsolescence and Special Tooling and Test Equipment.
- (t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: - / Aegis BMD SM-3 Block IB
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
SM-3 Block IA Procurement ^(†)		2009	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Feb 2008	Mar 2010	11	8.405	Y		Mar 2007
SM-3 Block IA Procurement ^(†)		2010	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Apr 2008	Aug 2010	24	8.119	Y		Mar 2007
SM-3 Block IA Procurement ^(†)		2011	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Aug 2012	Sep 2013	22	9.525	Y		Nov 2010
SM-3 Block IA Procurement ^(†)		2012	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Aug 2012	Jul 2014	14	9.867	Y		Aug 2011
SM-3 Block IB Procurement ^(†)		2012	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	May 2012	Dec 2013	14	13.400	Y		Aug 2011
SM-3 Block IB Procurement ^(†)		2013	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Jun 2013	Jun 2014	33	12.130	Y		Aug 2012
SM-3 Block IB Procurement ^(†)		2014	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Apr 2014	Jan 2016	52	10.236	Y		Aug 2013
SM-3 Block IB Procurement ^(†)		2015	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2015	Apr 2017	52	11.411	Y		Aug 2014
SM-3 Block IB Procurement ^(†)		2016	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2016	Jul 2018	46	11.538	Y		Aug 2015

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD09 / AEGIS BMD **Item Number / Title [DODIC]:** - / Aegis BMD SM-3 Block IB

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2008												Fiscal Year 2009												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2007	BAL DUE AS OF 1 OCT	Calendar Year 2008												Calendar Year 2009												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
SM-3 Block IA Procurement																															
1		2009	MDA	11	0	11																							11		
1		2010	MDA	24	0	24																							24		
1		2011	MDA	22	0	22																							22		
1		2012	MDA	14	0	14																							14		
SM-3 Block IB Procurement																															
2		2012	MDA	14	0	14																							14		
2		2013	MDA	33	0	33																							33		
2		2014	MDA	52	0	52																							52		
2		2015	MDA	52	0	52																							52		
2		2016	MDA	46	0	46																							46		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: - / Aegis BMD SM-3 Block IB
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2010												Fiscal Year 2011												BALANCE				
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2009	BAL DUE AS OF 1 OCT	Calendar Year 2010												Calendar Year 2011															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P			
SM-3 Block IA Procurement																																		
	1	2009	MDA	11	0	11	-	-	-	-	-	-	2	-	-	-	2	2	-	-	-	-	-	-	-	-	1	1	3					0
	1	2010	MDA	24	0	24	-	-	-	-	-	-	-	-	-	2	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
	1	2011	MDA	22	0	22																											22	
	1	2012	MDA	14	0	14																											14	
SM-3 Block IB Procurement																																		
	2	2012	MDA	14	0	14																											14	
	2	2013	MDA	33	0	33																												33
	2	2014	MDA	52	0	52																												52
	2	2015	MDA	52	0	52																												52
	2	2016	MDA	46	0	46																												46
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17		P-1 Line Item Number / Title: MD09 / AEGIS BMD
		Item Number / Title [DODIC]: - / Aegis BMD SM-3 Block IB

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2012												Fiscal Year 2013												BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	Calendar Year 2012												Calendar Year 2013												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
SM-3 Block IA Procurement																															
	1	2009	MDA	11	11	0																							0		
	1	2010	MDA	24	11	13	-	-	-	-	6	-	1	-	-	2	-	3	-	-	-	-	-	-	-	-	-	-	1	0	
	1	2011	MDA	22	0	22																						1	21		
	1	2012	MDA	14	0	14																						-	14		
SM-3 Block IB Procurement																															
	2	2012	MDA	14	0	14																							14		
	2	2013	MDA	33	0	33																							33		
	2	2014	MDA	52	0	52																							52		
	2	2015	MDA	52	0	52																							52		
	2	2016	MDA	46	0	46																							46		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD09 / AEGIS BMD **Item Number / Title [DODIC]:** - / Aegis BMD SM-3 Block IB

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2014												Fiscal Year 2015												BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	Calendar Year 2014												Calendar Year 2015												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
SM-3 Block IA Procurement																															
	1	2009	MDA	11	11	0																							0		
	1	2010	MDA	24	24	0																							0		
	1	2011	MDA	22	1	21	5	1	2	1	-	3	4	1	1	3													0		
	1	2012	MDA	14	0	14	-	-	-	-	-	-	-	-	-	2	1	3	-	-	-	3	4	-	1				0		
SM-3 Block IB Procurement																															
	2	2012	MDA	14	0	14	-	-	1	3	2	3	1	2	2														0		
	2	2013	MDA	33	0	33	-	-	-	-	-	-	-	-	2	1	-	1	-	6	3	1	-	3	2	4	-	-	-	1	9
	2	2014	MDA	52	0	52							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52		
	2	2015	MDA	52	0	52																		A -	-	-	-	-	-	52	
	2	2016	MDA	46	0	46																							46		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD09 / AEGIS BMD **Item Number / Title [DODIC]:** - / Aegis BMD SM-3 Block IB

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2016												Fiscal Year 2017												BALANCE		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016												Calendar Year 2017													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P	
SM-3 Block IA Procurement																																
	1	2009	MDA	11	11	0																							0			
	1	2010	MDA	24	24	0																							0			
	1	2011	MDA	22	22	0																							0			
	1	2012	MDA	14	14	0																							0			
SM-3 Block IB Procurement																																
	2	2012	MDA	14	14	0																							0			
	2	2013	MDA	33	24	9		4																					0			
	2	2014	MDA	52	0	52		-	-	-		4		4		5		4		4		5		4		4		5	0			
	2	2015	MDA	52	0	52		-	-	-		-		-		-		-		-		-		-		-		-	26			
	2	2016	MDA	46	0	46																							46			
								O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD09 / AEGIS BMD **Item Number / Title [DODIC]:** - / Aegis BMD SM-3 Block IB

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2018												Fiscal Year 2019												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018												Calendar Year 2019												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
SM-3 Block IA Procurement																															
	1	2009	MDA	11	11	0																							0		
	1	2010	MDA	24	24	0																							0		
	1	2011	MDA	22	22	0																							0		
	1	2012	MDA	14	14	0																							0		
SM-3 Block IB Procurement																															
	2	2012	MDA	14	14	0																							0		
	2	2013	MDA	33	33	0																							0		
	2	2014	MDA	52	52	0																							0		
	2	2015	MDA	52	26	26	5	4	4	5	4	4																	0		
	2	2016	MDA	46	0	46	-	-	-	-	-	-	-	-	-	4	4	4											34		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: - / Aegis BMD SM-3 Block IB
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2018	1-8-5 For 2018	MAX For 2018	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Raytheon - Tucson, AZ	1	4	8	4	0	30	30	4	0	30	30
2	Raytheon - Tucson, AZ	1	4	8	0	0	0	0	0	0	0	0

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Advance Procurement Budget Line Item Justification: FY 2018 Missile Defense Agency							Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency							P-1 Line Item Number / Title: MD09 / AEGIS BMD					
Program Elements for Code B Items: 0604881C, 0603892C							Other Related Program Elements: 0603892C, 0604881C					
Line Item MDAP/MAIS Code: 362												

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	38.738	-	38.738	28.337	28.243	-	-	-	95.318
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	38.738	-	38.738	28.337	28.243	-	-	-	95.318
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	38.738	-	38.738	28.337	28.243	-	-	-	95.318

Description:

- The following long lead items will be procured in FY18
1. 44 Throttling Divert and Attitude Control System (TDACS) cases and insulation parts
 2. 41 Integrated Dewars Assembly
 3. 41 SM-3 IB Ejector

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Exhibit P-40, Advance Procurement Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD09 / AEGIS BMD
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Program Elements for Code B Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C, 0604881C
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Line Item MDAP/MAIS Code: 362

Exhibits Schedule				Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-10	Aegis BMD SM-3 Block IB			222 / -	46 / -	35 / -	34 / 38.738	- / -	34 / 38.738
P-40	Total Gross/Weapon System Cost			222 / -	46 / -	35 / -	34 / 38.738	- / -	34 / 38.738

*Title represents the P-10 Title for Advance Procurement.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY2018 Advanced Procurement funding totaling of \$38.738M is requested to support Long Lead material that is temporarily being extended while Aerojet Rocketdyne conducts a competitive Improvement Program (CIP) which will consolidate and optimize their facilities. The LLM items are associated with the production of the SM-3 Blk IB Kinetic Warhead (KW) inclusive of the Throttleable Divert Attitude Control System (TDACS) composite case and installation, Integrated Dewar Assembly (IDA) and the SM-3 IB Ejector assembly.

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Exhibit P-10, Advance Procurement Requirements Analysis (page 1 - Budget Funding Justification): FY 2018 Missile Defense Agency					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17			P-1 Line Item Number / Title: MD09 / AEGIS BMD		P-5 Number / Title: - / Aegis BMD SM-3 Block IB	
First System (2018) Award Date: January 2018		First System (2018) Completion Date: October 2020		Interval Between Systems: 1 Months		
Aegis BMD SM-3 Block IB		Production Leadtime <i>(Months)</i>	Prior Years <i>(Each)</i>	FY 2016 <i>(Each)</i>	FY 2017 <i>(Each)</i>	FY 2018 <i>(Each)</i>
Quantity		30	222	46	35	34
Cost Elements		When Required <i>(Months)</i>	Prior Years <i>(\$ M)</i>	FY 2016 <i>(\$ M)</i>	FY 2017 <i>(\$ M)</i>	FY 2018 <i>(\$ M)</i>
Other						
Aegis Advacned Procurement FY19		0	-	-	-	0.000
Aegis Advanced Procurement for FY18		0	-	-	-	38.738
Aegis Advanced Procurement FY20		0	-	-	-	0.000
<i>Total: Other</i>			<i>0.000</i>	<i>0.000</i>	<i>0.000</i>	<i>38.738</i>
Total Advance Procurement/Obligation Authority			-	-	-	38.738

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Exhibit P-10, Advance Procurement Requirements Analysis (page 2 - Budget Funding Justification): FY 2018 Missile Defense Agency						Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17			P-1 Line Item Number / Title: MD09 / AEGIS BMD			P-5 Number / Title: - / Aegis BMD SM-3 Block IB	
Cost Elements	QPA <i>(Each)</i>	FY 2018					Total Cost Request <i>(\$ M)</i>
		Production Leadtime <i>(Months)</i>	Unit Cost <i>(\$ M)</i>	Contract Forecast Date	2018 Qty <i>(Each)</i>	For FY	
Other							
Aegis Advacned Procurement FY19	1					2020	0.000
Aegis Advanced Procurement for FY18	1					2019	38.738
Aegis Advanced Procurement FY20	1					2021	0.000
<i>Total: Other</i>							38.738
Total Advance Procurement/Obligation Authority							38.738

Description:
Long lead advanced procurement requested for \$38.738M

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603881C, 0603884C	Other Related Program Elements: 0603881C, 0603884C
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Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	5	-	-	-	-	-	-	-	-	-	-	5
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,093.453	78.634	5.503	0.947	-	0.947	13.572	10.168	8.020	15.336	-	1,225.633
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,093.453	78.634	5.503	0.947	-	0.947	13.572	10.168	8.020	15.336	-	1,225.633
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,093.453	78.634	5.503	0.947	-	0.947	13.572	10.168	8.020	15.336	-	1,225.633

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	10.901	-	-	-	-	-	-	-	-	-	-	10.901
Flyaway Unit Cost (<i>\$ in Millions</i>)	172.502	-	-	-	-	-	-	-	-	-	Continuing	Continuing
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	218.691	-	-	-	-	-	-	-	-	-	-	245.127

Description:

The Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) radar is an integral component of the Ballistic Missile Defense System (BMDS) layered network of sensors. It is easily transported and can be configured to operate either as a Terminal High Altitude Area Defense (THAAD) Fire Unit Radar (terminal mode) or Forward-Based Radar. The forward-based AN/TPY-2 provides detection and tracking during the boost phase. This significantly reduces the uncertainty in target discrimination and reaction time, increasing the probability of a successful BMDS engagement. In forward-based mode, the AN/TPY-2 also provides acquisition and track data via the Ballistic Missile Defense System Command, Control, Battle Management and Communications (C2BMC) and Link 16 to the Aegis missile defense system for cueing. The AN/TPY-2 used in terminal mode is an integral component of the THAAD Battery. The THAAD battery radar is capable of tracking multiple threats and multiple interceptors during engagements in the terminal phase. It provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for fire control.

Procurement funding acquired five of the seven AN/TPY-2 Radars required to complete the THAAD Battery acquisitions, with the initial two AN/TPY-2 radars funded from RDT&E. "Procurement Quantity" and "Flyaway Unit Cost" represent AN/TPY-2 radar systems ((i.e. one Antenna Equipment Unit (AEU), one Cooling Equipment Unit, one Electronic Equipment Unit (EEU), and two Prime Power Units (PPU)) only, but the "Net Procurement" cost plus the Initial Spares amount includes the costs of all hardware.

The AN/TPY-2 EEU Modification Kits and Radar Field Upgrade (RAFU) Kits provide updated processing capabilities to EEU's in both Terminal and Forward-based modes. The AEU transformers include design improvements to extend the life of this mission critical component.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603881C, 0603884C	Other Related Program Elements: 0603881C, 0603884C
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Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	BMDS AN/TPY-2 Radars	P-5a, P-21	A		5 / 1,093.453	- / 78.634	- / 5.503	- / 0.947	- / -	- / 0.947
P-40	Total Gross/Weapon System Cost				5 / 1,093.453	- / 78.634	- / 5.503	- / 0.947	- / -	- / 0.947

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2018 base procurement dollars in the amount of \$0.947 million procures one AEU transformer to replace the legacy transformer currently in each forward-based AN/TPY-2 site. The newly designed AEU transformer will include design improvements to extend the life of this mission critical component.

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars	Item Number / Title [DODIC]: - / BMDS AN/TPY-2 Radars

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	5	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1,093.453	78.634	5.503	0.947	-	0.947
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,093.453	78.634	5.503	0.947	-	0.947
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,093.453	78.634	5.503	0.947	-	0.947

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	218.691	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Antenna Equipment Unit (AEU) ^(†)	130.482	5	652.411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antenna Equipment Unit (AEU) Transformer ^(†)	1.775	3	5.326	0.410	1	0.410	0.919	1	0.919	0.947	1	0.947	-	-	0.947	1	0.947	-
Cooling Equipment Unit (CEU) ^(†)	6.996	5	34.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Spares ^(†)	12.876	2	25.752	3.475	1	3.475	-	-	-	-	-	-	-	-	-	-	-	-
Electronic Equipment Unit (EEU) ^(†)	20.914	5	104.572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electronic Equipment Unit (EEU) Modification Kit ^(†)	2.795	3	8.384	3.183	4	12.730	3.134	1	3.134	-	-	-	-	-	-	-	-	-
Float Antenna Equipment Unit (AEU) ^(†)	-	-	-	62.019	1	62.019	-	-	-	-	-	-	-	-	-	-	-	-
Float Cooling Equipment Unit (CEU) ^(†)	12.929	2	25.857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Float Electronic Equipment Unit (EEU) ^(†)	21.491	2	42.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency												Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17						P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars						Item Number / Title [DODIC]: - / BMDS AN/TPY-2 Radars					
ID Code (A=Service Ready, B=Not Service Ready) : A												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Forward-Based Mode Prime Power Units (PPU) ^(†)	10.985	4	43.940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prime Power Unit (PPUs - 2 each radar system) ^(†)	14.109	5	70.545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Radar Field Upgrade (RAFU) Kit ^(†)	-	-	-	-	-	-	1.450	1	1.450	-	-	-	-	-	-	-	-	-
Transmit/Receive Integrated Microwave Module (TRIMMs) ^(†)	59.840	1	59.840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	1,074.591	-	-	78.634	-	-	5.503	-	-	0.947	-	-	-	-	-	0.947
Non Recurring Cost																		
Contractor Certification ^(†)	2.862	1	2.862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	2.862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	1,077.453	-	-	78.634	-	-	5.503	-	-	0.947	-	-	-	-	-	0.947
Support Cost																		
Program Support*	16.000	1	16.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support Cost</i>	-	-	16.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	218.691	5	1,093.453	-	-	78.634	-	-	5.503	-	-	0.947	-	-	-	-	-	0.947

Remarks:
AN/TPY-2 Radar consists of one Antenna Equipment Unit (AEU), one Cooling Equipment Unit (CEU), one Electronic Equipment Unit (EEU) and two Prime Power Units (PPUs).

^(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars	Item Number / Title [DODIC]: - / BMDS AN/TPY-2 Radars
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Antenna Equipment Unit (AEU) ^(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	144.290	Y		
Antenna Equipment Unit (AEU) ^(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	144.090	Y		
Antenna Equipment Unit (AEU) - 1 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	126.400	Y		
Antenna Equipment Unit (AEU) - 2 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	126.400	Y		
Antenna Equipment Unit (AEU) Transformer ^(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Sep 2015	3	1.775	Y		
Antenna Equipment Unit (AEU) Transformer ^(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Sep 2016	1	0.410	Y		
Antenna Equipment Unit (AEU) Transformer ^(†)		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Sep 2017	1	0.919	Y		
Antenna Equipment Unit (AEU) Transformer ^(†)		2018	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2017	Sep 2018	1	0.947	Y		
Cooling Equipment Unit (CEU) ^(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	7.800	Y		
Cooling Equipment Unit (CEU) ^(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	7.668	Y		
Cooling Equipment Unit (CEU) - 1 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	6.802	Y		
Cooling Equipment Unit (CEU) - 2 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	6.802	Y		
Critical Spares ^(†)		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	May 2014	May 2015	1	14.361	Y		
Critical Spares ^(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Dec 2015	1	11.391	Y		
Critical Spares ^(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Dec 2016	1	3.475	Y		
Electronic Equipment Unit (EEU) ^(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	23.400	Y		
Electronic Equipment Unit (EEU) ^(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	23.000	Y		
Electronic Equipment Unit (EEU) - 1 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	20.220	Y		
Electronic Equipment Unit (EEU) - 2 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	20.220	Y		
Electronic Equipment Unit (EEU) Modification Kit ^(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Jun 2015	3	2.795	Y		
Electronic Equipment Unit (EEU) Modification Kit ^(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Mar 2016	Sep 2016	4	3.183	Y		

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Exhibit P-5a, Procurement History and Planning: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars	Item Number / Title [DODIC]: - / BMDS AN/TPY-2 Radars
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Electronic Equipment Unit (EEU) Modification Kit ^(†)		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Jun 2017	1	3.134	Y		
Float Antenna Equipment Unit (AEU) ^(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Jun 2018	1	62.019	Y		
Float Cooling Equipment Unit (CEU) ^(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	1	7.140	Y		
Float Cooling Equipment Unit (CEU) ^(†)		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Sep 2014	Dec 2015	1	18.721	Y		
Float Electronic Equipment Unit (EEU) ^(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	1	20.260	Y		
Float Electronic Equipment Unit (EEU) ^(†)		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Sep 2014	Sep 2016	1	22.718	Y		
Forward-Based Mode Prime Power Units (PPU) ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Dec 2014	4	10.985	Y		
Prime Power Unit (PPUs - 2 each radar system) ^(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	15.600	Y		
Prime Power Unit (PPUs - 2 each radar system) ^(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	15.336	Y		
Prime Power Unit (PPUs - 2 each radar system) - 1 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	13.895	Y		
Prime Power Unit (PPUs - 2 each radar system) - 2 ^(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	13.895	Y		
Radar Field Upgrade (RAFU) Kit ^(†)		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Jun 2017	1	1.450	Y		
Transmit/Receive Integrated Microwave Module (TRIMMs) ^(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Jun 2016	1	59.840	Y		
Contractor Certification ^(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Dec 2015	1	2.862	Y		

^(†) indicates the presence of a P-21

Remarks:
N/A

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars	Item Number / Title [DODIC]: - / BMDS AN/TPY-2 Radars
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2010													Fiscal Year 2011													BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2009	BAL DUE AS OF 1 OCT	Calendar Year 2010													Calendar Year 2011													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Antenna Equipment Unit (AEU)																																	
	1	2010	MDA	1	0	1																								1			
	1	2012	MDA	2	0	2																								2			
Antenna Equipment Unit (AEU) - 1																																	
	1	2013	MDA	1	0	1																								1			
Antenna Equipment Unit (AEU) - 2																																	
	1	2013	MDA	1	0	1																								1			
Antenna Equipment Unit (AEU) Transformer																																	
	2	2015	MDA	3	0	3																								3			
	2	2016	MDA	1	0	1																								1			
	2	2017	MDA	1	0	1																								1			
	2	2018	MDA	1	0	1																								1			
Cooling Equipment Unit (CEU)																																	
	3	2010	MDA	1	0	1																								1			
	3	2012	MDA	2	0	2																								2			
Cooling Equipment Unit (CEU) - 1																																	
	3	2013	MDA	1	0	1																								1			
Cooling Equipment Unit (CEU) - 2																																	
	3	2013	MDA	1	0	1																								1			
Critical Spares																																	
	4	2014	MDA	1	0	1																								1			
	4	2015	MDA	1	0	1																								1			
	4	2016	MDA	1	0	1																								1			
Electronic Equipment Unit (EEU)																																	
	5	2010	MDA	1	0	1																								1			
	5	2012	MDA	2	0	2																								2			
Electronic Equipment Unit (EEU) - 1																																	
	5	2013	MDA	1	0	1																								1			
Electronic Equipment Unit (EEU) - 2																																	
	5	2013	MDA	1	0	1																								1			
Electronic Equipment Unit (EEU) Modification Kit																																	
	6	2015	MDA	3	0	3																								3			
	6	2016	MDA	4	0	4																								4			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD11 / BMDS AN/TPY-2 Radars **Item Number / Title [DODIC]:** - / BMDS AN/TPY-2 Radars

Cost Elements (Units in Each)						Fiscal Year 2012														Fiscal Year 2013												BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	Calendar Year 2012														Calendar Year 2013												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Antenna Equipment Unit (AEU)																																	
	1	2010	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				0	
	1	2012	MDA	2	0	2				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
Antenna Equipment Unit (AEU) - 1																																	
	1	2013	MDA	1	0	1																					A	-	-	-	-	-	1
Antenna Equipment Unit (AEU) - 2																																	
	1	2013	MDA	1	0	1																										1	
Antenna Equipment Unit (AEU) Transformer																																	
	2	2015	MDA	3	0	3																										3	
	2	2016	MDA	1	0	1																										1	
	2	2017	MDA	1	0	1																										1	
	2	2018	MDA	1	0	1																										1	
Cooling Equipment Unit (CEU)																																	
	3	2010	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				0		
	3	2012	MDA	2	0	2				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
Cooling Equipment Unit (CEU) - 1																																	
	3	2013	MDA	1	0	1																					A	-	-	-	-	-	1
Cooling Equipment Unit (CEU) - 2																																	
	3	2013	MDA	1	0	1																										1	
Critical Spares																																	
	4	2014	MDA	1	0	1																										1	
	4	2015	MDA	1	0	1																										1	
	4	2016	MDA	1	0	1																										1	
Electronic Equipment Unit (EEU)																																	
	5	2010	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				0		
	5	2012	MDA	2	0	2				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
Electronic Equipment Unit (EEU) - 1																																	
	5	2013	MDA	1	0	1																					A	-	-	-	-	-	1
Electronic Equipment Unit (EEU) - 2																																	
	5	2013	MDA	1	0	1																										1	
Electronic Equipment Unit (EEU) Modification Kit																																	
	6	2015	MDA	3	0	3																										3	
	6	2016	MDA	4	0	4																										4	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD11 / BMDS AN/TPY-2 Radars **Item Number / Title [DODIC]:** - / BMDS AN/TPY-2 Radars

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2014														Fiscal Year 2015														BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	Calendar Year 2014														Calendar Year 2015														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
Antenna Equipment Unit (AEU)																																			
	1	2010	MDA	1	1	0																							0						
	1	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	2														0						
Antenna Equipment Unit (AEU) - 1																																			
	1	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		0						
Antenna Equipment Unit (AEU) - 2																																			
	1	2013	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1						
Antenna Equipment Unit (AEU) Transformer																																			
	2	2015	MDA	3	0	3																							2						
	2	2016	MDA	1	0	1																							1						
	2	2017	MDA	1	0	1																							1						
	2	2018	MDA	1	0	1																							1						
Cooling Equipment Unit (CEU)																																			
	3	2010	MDA	1	1	0																							0						
	3	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	2														0						
Cooling Equipment Unit (CEU) - 1																																			
	3	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		0							
Cooling Equipment Unit (CEU) - 2																																			
	3	2013	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1						
Critical Spares																																			
	4	2014	MDA	1	0	1										A -	-	-	-	-	-	-	-	-	-	1			0						
	4	2015	MDA	1	0	1																							1						
	4	2016	MDA	1	0	1																							1						
Electronic Equipment Unit (EEU)																																			
	5	2010	MDA	1	1	0																							0						
	5	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	2														0						
Electronic Equipment Unit (EEU) - 1																																			
	5	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1			0						
Electronic Equipment Unit (EEU) - 2																																			
	5	2013	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1						
Electronic Equipment Unit (EEU) Modification Kit																																			
	6	2015	MDA	3	0	3																							1						
	6	2016	MDA	4	0	4																							4						
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD11 / BMDS AN/TPY-2 Radars **Item Number / Title [DODIC]:** - / BMDS AN/TPY-2 Radars

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2016														Fiscal Year 2017														BALANCE				
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016														Calendar Year 2017																	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								
Antenna Equipment Unit (AEU)																																						
	1	2010	MDA	1	1	0																							0									
	1	2012	MDA	2	2	0																							0									
Antenna Equipment Unit (AEU) - 1																																						
	1	2013	MDA	1	1	0																							0									
Antenna Equipment Unit (AEU) - 2																																						
	1	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	1													0									
Antenna Equipment Unit (AEU) Transformer																																						
	2	2015	MDA	3	1	2	-	1	-	1																			0									
	2	2016	MDA	1	0	1			A	-	-	-	-	-	-	-	-	-	-	1									0									
	2	2017	MDA	1	0	1																					A	-	-	-	-	-	-	-	-	-	1	0
	2	2018	MDA	1	0	1																								1								
Cooling Equipment Unit (CEU)																																						
	3	2010	MDA	1	1	0																							0									
	3	2012	MDA	2	2	0																							0									
Cooling Equipment Unit (CEU) - 1																																						
	3	2013	MDA	1	1	0																							0									
Cooling Equipment Unit (CEU) - 2																																						
	3	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	1													0									
Critical Spares																																						
	4	2014	MDA	1	1	0																							0									
	4	2015	MDA	1	0	1	-	-	1																				0									
	4	2016	MDA	1	0	1			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		0									
Electronic Equipment Unit (EEU)																																						
	5	2010	MDA	1	1	0																							0									
	5	2012	MDA	2	2	0																							0									
Electronic Equipment Unit (EEU) - 1																																						
	5	2013	MDA	1	1	0																							0									
Electronic Equipment Unit (EEU) - 2																																						
	5	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	1													0									
Electronic Equipment Unit (EEU) Modification Kit																																						
	6	2015	MDA	3	2	1	1																						0									
	6	2016	MDA	4	0	4																							0									
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P								

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17 **P-1 Line Item Number / Title:** MD11 / BMDS AN/TPY-2 Radars **Item Number / Title [DODIC]:** - / BMDS AN/TPY-2 Radars

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2018													Fiscal Year 2019													BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018													Calendar Year 2019													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Antenna Equipment Unit (AEU)																																	
	1	2010	MDA	1	1	0																							0				
	1	2012	MDA	2	2	0																							0				
Antenna Equipment Unit (AEU) - 1																																	
	1	2013	MDA	1	1	0																							0				
Antenna Equipment Unit (AEU) - 2																																	
	1	2013	MDA	1	1	0																							0				
Antenna Equipment Unit (AEU) Transformer																																	
	2	2015	MDA	3	3	0																							0				
	2	2016	MDA	1	1	0																							0				
	2	2017	MDA	1	1	0																							0				
	2	2018	MDA	1	0	1				A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0				
Cooling Equipment Unit (CEU)																																	
	3	2010	MDA	1	1	0																							0				
	3	2012	MDA	2	2	0																							0				
Cooling Equipment Unit (CEU) - 1																																	
	3	2013	MDA	1	1	0																							0				
Cooling Equipment Unit (CEU) - 2																																	
	3	2013	MDA	1	1	0																							0				
Critical Spares																																	
	4	2014	MDA	1	1	0																							0				
	4	2015	MDA	1	1	0																							0				
	4	2016	MDA	1	1	0																							0				
Electronic Equipment Unit (EEU)																																	
	5	2010	MDA	1	1	0																							0				
	5	2012	MDA	2	2	0																							0				
Electronic Equipment Unit (EEU) - 1																																	
	5	2013	MDA	1	1	0																							0				
Electronic Equipment Unit (EEU) - 2																																	
	5	2013	MDA	1	1	0																							0				
Electronic Equipment Unit (EEU) Modification Kit																																	
	6	2015	MDA	3	3	0																							0				
	6	2016	MDA	4	4	0																							0				
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S			
							C	O	E	A	E	A	A	A	U	U	A	E	C	O	V	E	A	E	A	A	U	U	A	S			
							T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P			

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars	Item Number / Title [DODIC]: - / BMDS AN/TPY-2 Radars
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2018	1-8-5 For 2018	MAX For 2018	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Raytheon - Woburn, MA	1	1	4	4	3	30	33	0	0	0	0
2	Raytheon - Woburn, MA	1	4	4	2	3	9	12	2	3	9	12
3	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
4	Raytheon - Woburn, MA	1	1	4	4	2	12	14	4	2	12	14
5	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
6	Raytheon - Woburn, MA	1	2	4	2	3	6	9	2	3	6	9
7	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
8	Raytheon - Woburn, MA	1	1	4	4	2	15	17	0	0	0	0
9	Raytheon - Woburn, MA	1	1	4	4	2	24	26	0	0	0	0
10	Raytheon - Woburn, MA	1	1	4	4	2	24	26	0	0	0	0
11	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
12	Raytheon - Woburn, MA	1	2	4	2	3	6	9	2	3	6	9
13	Raytheon - Woburn, MA	1	1	4	4	2	18	20	4	2	18	20
14	Raytheon - Woburn, MA	1	1	1	3	2	12	14	3	2	12	14

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD20 / Arrow Upper Tier
--	---

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
--	---	--

Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	15.000	-	-	-	-	-	-	-	-	-	15.000
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	15.000	-	-	-	-	-	-	-	-	-	15.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	15.000	-	-	-	-	-	-	-	-	-	15.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

-Provides funding to the Government of Israel to procure Upper Tier Interceptor Long Lead Components. Quantities are classified. The unit quantity of one is used as a proxy in each Fiscal Year with funding.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD20 / Arrow Upper Tier
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Upper Tier Interceptor		B		- / -	- / 15,000	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / -	- / 15,000	- / -	- / -	- / -	- / -

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
N/A

UNCLASSIFIED

Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD20 / Arrow Upper Tier	Item Number / Title [DODIC]: - / Upper Tier Interceptor
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ID Code (A=Service Ready, B=Not Service Ready) : B **MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	15.000	-	-	-	-
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	15.000	-	-	-	-
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	15.000	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Millions)</i>	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Non Recurring Cost																		
Upper Tier Interceptor	-	-	-	15.000	1	15.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	15.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	15.000	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	15.000	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:

N/A

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD34 / David's Sling
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	150.000	-	-	-	-	-	-	-	-	-	-	150.000
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	150.000	-	-	-	-	-	-	-	-	-	-	150.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	150.000	-	-	-	-	-	-	-	-	-	-	150.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

-Provides funding to the Government of Israel to procure David's Sling Weapon System Components. Quantities are classified. The unit quantity of one is used as a proxy in each Fiscal Year with funding.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity:
0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency

P-1 Line Item Number / Title:
MD34 / David's Sling

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	David's Sling Weapon System Components		A		- / 150.000	- / -	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 150.000	- / -	- / -	- / -	- / -	- / -

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
N/A

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD34 / David's Sling	Item Number / Title [DODIC]: - / David's Sling Weapon System Components

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	150.000	-	-	-	-	-
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	150.000	-	-	-	-	-
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	150.000	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Non Recurring Cost																		
David's Sling Weapon System Components	150.000	1	150.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	150.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware Cost</i>	-	-	150.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	150.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks:

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD73 / Aegis Ashore Phase III
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603892C, 0604881C, 0604880C	Other Related Program Elements: 0604880C
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Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	2	1	1	1	-	1	-	-	-	-	-	5
Gross/Weapon System Cost (<i>\$ in Millions</i>)	337.001	30.587	57.493	59.739	-	59.739	-	-	-	-	-	484.820
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	337.001	30.587	57.493	59.739	-	59.739	-	-	-	-	-	484.820
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	337.001	30.587	57.493	59.739	-	59.739	-	-	-	-	-	484.820

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	168.501	30.587	57.493	59.739	-	59.739	-	-	-	-	-	96.964

Description:

Note: The increase from FY 2017 to FY 2018 accounts for all final costs associated to meet European Phased Adaptive Approach (EPAA) Phase III, which includes configuration and test validations.

This program supports the procurement of Aegis Ashore Poland. On 17 December 2009, the President announced an overarching policy to provide regional missile defense to U.S. deployed forces, allies and partners in Europe called the European Phased Adaptive Approach (EPAA). Within this policy, a European PAA specifically addresses a timeline to deploy a mix of afloat and land-based Ballistic Missile Defense (BMD) capabilities. Aegis Ashore represents one of these land-based capabilities.

Phase III of EPAA (2018 timeframe): Deploys a land based Aegis Ashore in Poland, and introduces an upgraded Standard Missile, the SM-3 Block IIA. This missile brings improved coverage against medium and intermediate range ballistic threats, and extends coverage to the majority of the European continent.

Aegis Ashore will provide Aegis Missile Defense capability against short and medium range ballistic missiles in an ashore configuration. It will be similar to the Aegis At-Sea BMD capability inherent in the new Arleigh Burke-class Aegis destroyers (DDG-113 and following ships) to facilitate training and logistical support by the lead service, Navy. Aegis Ashore re-hosts the required BMD components of a Navy Destroyer in an ashore configuration to include a Deckhouse structure and Weapon System comprised of a SPY radar, Vertical Launch System (VLS), computing infrastructure, Command, Control, Communications, Computers and Intelligence (C4I) systems, and operator consoles. Aegis Ashore can adapt to the threat and can be deployed to other regions as needed to provide persistent coverage for the Geographic Combatant Commanders.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD73 / Aegis Ashore Phase III
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603892C, 0604881C, 0604880C	Other Related Program Elements: 0604880C
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Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Aegis Ashore Poland, Equipment and Deckhouse		A		2 / 337.001	1 / 30.587	1 / 57.493	1 / 59.739	- / -	1 / 59.739
P-40	Total Gross/Weapon System Cost				2 / 337.001	1 / 30.587	1 / 57.493	1 / 59.739	- / -	1 / 59.739

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The Aegis Ashore to be installed in Poland contains a Deckhouse structure and Weapon System comprised of a SPY radar, Vertical Launch System (VLS), computing infrastructure, Command, Control, Communications, Computers and Intelligence (C4I) systems, and operator consoles with very diverse procurement lead times from multiple contracts. The funding profile addresses the multiple actions required to field the Aegis Ashore end item in Poland by the end of the calendar year 2018, keep the individual components up to date with the Navy's destroyer modernization plan and install modifications as required to enhance co-existence with Broadband Wireless Access systems in the European theater. MDA will continue to use Research Development, Test, and Evaluation (RDT&E) (Program Element (PE)-0604880C) to modernize, develop and test Aegis Ashore capability improvements at the Aegis Ashore Missile Defense Test Complex (AAMDTC) in Hawaii for implementation at operational sites.

FY 2016 Started site activation, fabrication of the Deckhouse structure and assembly of Aegis Ashore Deckhouse structure in Poland.

FY 2017 Install Aegis Ashore Weapon System in the Aegis Ashore Deckhouse structure in Poland.

FY 2018 Conduct final configuration test validation.

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD73 / Aegis Ashore Phase III	Item Number / Title [DODIC]: - / Aegis Ashore Poland, Equipment and Deckhouse

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (<i>Units in Each</i>)	2	1	1	1	-	1
Gross/Weapon System Cost (<i>\$ in Millions</i>)	337.001	30.587	57.493	59.739	-	59.739
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	337.001	30.587	57.493	59.739	-	59.739
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	337.001	30.587	57.493	59.739	-	59.739

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	168.501	30.587	57.493	59.739	-	59.739

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
Aegis Ashore Poland, Equipment and Deckhouse	168.501	2	337.001	30.587	1	30.587	57.493	1	57.493	59.739	1	59.739	-	-	-	59.739	1	59.739
<i>Subtotal: Recurring Cost</i>	-	-	337.001	-	-	30.587	-	-	57.493	-	-	59.739	-	-	-	-	-	59.739
<i>Subtotal: Flyaway Cost</i>	-	-	337.001	-	-	30.587	-	-	57.493	-	-	59.739	-	-	-	-	-	59.739
Gross/Weapon System Cost	168.501	2	337.001	30.587	1	30.587	57.493	1	57.493	59.739	1	59.739	-	-	-	59.739	1	59.739

Remarks:

N/A

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD83 / Iron Dome
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603913C
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Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	4	1	1	1	-	1	-	-	-	-	-	7
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,194.630	55.000	42.000	42.000	-	42.000	-	-	-	-	-	1,333.630
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,194.630	55.000	42.000	42.000	-	42.000	-	-	-	-	-	1,333.630
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,194.630	55.000	42.000	42.000	-	42.000	-	-	-	-	-	1,333.630

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	298.658	55.000	42.000	42.000	-	42.000	-	-	-	-	-	190.519

Description:

Provides funding to the Government of Israel to procure Iron Dome batteries and Tamir Missiles to counter short-range rocket threats.

Quantities are classified. The unit quantity of one is used as a proxy in each Fiscal Year with funding.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity:
0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency

P-1 Line Item Number / Title:
MD83 / Iron Dome

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0603913C

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Iron Dome		A		4 / 1,194.630	1 / 55.000	1 / 42.000	1 / 42.000	- / -	1 / 42.000
P-40	Total Gross/Weapon System Cost				4 / 1,194.630	1 / 55.000	1 / 42.000	1 / 42.000	- / -	1 / 42.000

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2015: Continued procurement of batteries and Tamir Interceptors of the Iron Dome weapon system.

FY 2016: Procurement of additional Iron Dome radars and associated equipment.

FY 2017: Procurement of additional Iron Dome equipment.

FY 2018: Procurement of additional Iron Dome equipment.

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD83 / Iron Dome	Item Number / Title [DODIC]: - / Iron Dome

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (<i>Units in Each</i>)	4	1	1	1	-	1
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,194.630	55.000	42.000	42.000	-	42.000
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,194.630	55.000	42.000	42.000	-	42.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,194.630	55.000	42.000	42.000	-	42.000

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	298.658	55.000	42.000	42.000	-	42.000

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>	Unit Cost <i>(\$ M)</i>	Qty <i>(Each)</i>	Total Cost <i>(\$ M)</i>
Hardware Cost																		
Recurring Cost																		
Iron Dome	298.658	4	1,194.630	55.000	1	55.000	42.000	1	42.000	42.000	1	42.000	-	-	-	42.000	1	42.000
<i>Subtotal: Recurring Cost</i>	-	-	1,194.630	-	-	55.000	-	-	42.000	-	-	42.000	-	-	-	-	-	42.000
<i>Subtotal: Hardware Cost</i>	-	-	1,194.630	-	-	55.000	-	-	42.000	-	-	42.000	-	-	-	-	-	42.000
Gross/Weapon System Cost	298.658	4	1,194.630	55.000	1	55.000	42.000	1	42.000	42.000	1	42.000	-	-	-	42.000	1	42.000

Remarks:

Quantities are classified. The unit quantity of one is used as a proxy in each Fiscal Year with funding.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	28	6	21	-	21	15	20	18	18	-	126
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	125.300	50.098	160.330	-	160.330	97.999	120.868	58.158	90.272	-	703.025
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	125.300	50.098	160.330	-	160.330	97.999	120.868	58.158	90.272	-	703.025
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	125.300	50.098	160.330	-	160.330	97.999	120.868	58.158	90.272	-	703.025

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	4.475	8.350	7.635	-	7.635	6.533	6.043	3.231	5.015	-	5.580

Description:

Note:

FY 2018 Base procurement budget request supports the procurement and installation of Aegis Ballistic Missile Defense (ABMD) material for operational ships and sites.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity:
0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency

P-1 Line Item Number / Title:
MD90 / Aegis BMD Hardware and Software

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	Aegis BMD Shipsets	P-5a, P-21	A		- / -	28 / 125.300	6 / 50.098	21 / 160.330	- / -	21 / 160.330
P-40	Total Gross/Weapon System Cost				- / -	28 / 125.300	6 / 50.098	21 / 160.330	- / -	21 / 160.330

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2018 Base procurement dollars in the amount of \$160.330 million supports the continued procurement and deployment of ABMD capabilities to operational ships and sites.

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency						Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17			P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software			Item Number / Title [DODIC]: - / Aegis BMD Shipsets		
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)			-	28	6	21	-	21
Gross/Weapon System Cost (\$ in Millions)			-	125.300	50.098	160.330	-	160.330
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			-	125.300	50.098	160.330	-	160.330
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			-	125.300	50.098	160.330	-	160.330
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)			-	4.475	8.350	7.635	-	7.635

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Aegis BL 9C.2 (5.X) BackFit Installs ^(†)	-	-	-	-	-	-	-	-	-	1.308	8	10.460	-	-	-	1.308	8	10.460
Aegis BL 9C.2 (5.X) BackFit Procurement ^(†)	-	-	-	2.009	11	22.097	2.800	2	5.600	-	-	-	-	-	-	-	-	-
Aegis BL 9C.2 (5.X) Inline Installs ^(†)	-	-	-	-	-	-	3.310	1	3.310	1.552	3	4.657	-	-	-	1.552	3	4.657
Aegis BL 9C.2 (5.X) Inline Procurements	-	-	-	4.502	2	9.003	4.513	1	4.513	4.651	3	13.953	-	-	-	4.651	3	13.953
Aegis BMD 3.6 to 4.X Hardware Procurements ^(†)	-	-	-	11.800	6	70.800	17.875	1	17.875	17.922	2	35.844	-	-	-	17.922	2	35.844
Aegis BMD 3.6 to 4.X Installs ^(†)	-	-	-	18.800	1	18.800	18.800	1	18.800	18.431	5	92.156	-	-	-	18.431	5	92.156
Aegis BMD 9.C1 (5.0 CU) Installs	-	-	-	1.400	1	1.400	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	-	-	-	122.100	-	-	50.098	-	-	157.070	-	-	-	-	-	157.070
Non Recurring Cost																		
MDA PNT 4650.05	-	-	-	-	-	-	-	-	-	3.260	1	3.260	-	-	-	3.260	1	3.260
Subtotal: Non Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	3.260	-	-	-	-	-	3.260
Subtotal: Hardware Cost	-	-	-	-	-	122.100	-	-	50.098	-	-	160.330	-	-	-	-	-	160.330

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Exhibit P-5, Cost Analysis: FY 2018 Missile Defense Agency												Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17						P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software						Item Number / Title [DODIC]: - / Aegis BMD Shipsets					
ID Code (A=Service Ready, B=Not Service Ready) : A												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Software Cost																		
Recurring Cost																		
Aegis BMD 4.0 to 4.X Software Installs	-	-	-	0.533	6	3.200	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	3.200	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Software Cost</i>	-	-	-	-	-	3.200	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	4.475	28	125.300	8.350	6	50.098	7.635	21	160.330	-	-	-	7.635	21	160.330

Remarks:

The FY2016 Appropriation Act created MD90, breaking out shipset hardware and software upgrade procurement and installation from MD09.

FY2016 3.6 to 4.X unit costs are lower than out years due to the economic order quantity bulk discount received for 6 shipsets as opposed to lower quantities in out years; FY 2017-2022 reflect unit costs for lower quantity procurements.

FY2016 funds realigned from MD90 to MD09 for Nosecone Production Improvements and Third Stage Rocket Motor (TSRM) Cold Gas ACS Production efforts. (Note: \$6M realigned back to MD90 from MD09 after 1 October 2016 for shipset contract award; Actual unit cost for 3.6 to 4.X hardware procurement is \$12.838M).

Aegis BL 9.C2 (BMD 5.1) installation unit cost is higher in FY 2017 than follow-on years due to a change in Navy Modernization Configuration plan; In FY 2017, the Navy plan requires DDG 80 to be upgraded to 9.C1 (BMD 5.0CU) and subsequently to 9.C2 (BMD 5.1).

The BMD 3.6 to 4.X upgrade provides EPAA Phase II capability.

The Aegis BL 9.C2 (5.X) upgrade provides EPAA Phase III integrated Aegis and BMD mission capability. The Aegis BL 9.C2 Inline procurement/installation upgrades non-BMD capable ships to full BMD 5.1 capability. Unit costs for BMD 9.C2 (5.X) Inline Procurements is dependent on specific ship configuration. (DDGs 79-90 are approximately \$4M/ship, while inline procurements for DDGs 91-112 are approximately \$5.5M/ship)

The Aegis BL 9.C2 Back-fit Procurement upgrade consists of an Aegis Weapon System, Command/Control/Communication and Vertical Launching System hardware. The Aegis BL 9.C2 Back-fit Procurement modification kit line procures hardware necessary to upgrade new construction DDGs 116-118 to BMD 5.1, which already had some BMD 5.1 compatible hardware installed in initial construction.

Aegis BL 5.4 (BMD 4.1) provides EPAA Phase II capability with an integrated Aegis BL 5.3 (Air Defense) and BMD 4.X single common baseline.

Aegis BMD 4.2 (Aegis BL 5.3.X/SPY Refurbishment) Antenna/Shipset Procurements and Installs provides hardware, rotatable pool, and upgrade/refurbishment of SPY antennas for BMD 4.X configured FLT I/II DDGs.

All Shipset procurements and installs are in alignment with Navy Ship Fielding Plan as of APR 2016

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: - / Aegis BMD Shipsets
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ M)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Aegis BL 9C.2 (5.X) BackFit Installs ^(†)		2018	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Oct 2017	Jun 2018	8	0.710	Y		Aug 2016
Aegis BL 9C.2 (5.X) BackFit Procurement ^(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	2	2.800	Y		Jul 2016
Aegis BL 9C.2 (5.X) Inline Installs ^(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	1	3.310	Y		Jul 2016
Aegis BMD 3.6 to 4.X Hardware Procurements		2017	Raytheon / Norfolk, VA	SS / FFP	Washington, D.C.	Feb 2017	Aug 2018	0	0.980	Y		Jul 2016
Aegis BMD 3.6 to 4.X Hardware Procurements ^(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	1	12.100	Y		Jul 2016
Aegis BMD 3.6 to 4.X Installs ^(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Jan 2017	Jun 2018	1	9.100	Y		May 2016

^(†) indicates the presence of a P-21

Remarks:
An Aegis BMD 3.6 to 4.x hardware procurement consists of two contracts. One SS/FFIF with Lockheed Martin, Moorestown NJ and one SS/FFP with Raytheon, Norfolk VA.

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Exhibit P-21, Production Schedule: FY 2018 Missile Defense Agency **Date:** May 2017

Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: - / Aegis BMD Shipsets
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)								
		MSR For 2018	1-8-5 For 2018	MAX For 2018	Initial				Reorder				
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	
1	Lockheed Martin - Moorestown, N.J.	1	1	4	0	0	0	0	0	0	0	0	0
2	Lockheed Martin - Moorestown, N.J.	1	1	2	0	0	0	0	0	0	0	0	0
3	Lockheed Martin - Moorestown, N.J.	1	1	1	0	0	0	0	0	0	0	0	0
4	Lockheed Martin - Moorestown, N.J.	1	1	1	0	0	0	0	0	0	0	0	0
5	Lockheed Martin - Moorestown, N.J.	1	1	1	0	0	0	0	0	0	0	0	0

Remarks:
An Aegis BMD 3.6 to 4.x hardware procurement consists of two contracts. One SS/FFIF with Lockheed Martin, Moorestown NJ and one SS/FFP with Raytheon, Norfolk VA.

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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