### Department of Defense Fiscal Year (FY) 2017 President's Budget Submission

February 2016



### **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 • President's Budget Submission FY 2017 • Procurement

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### **Introduction & Explanation of Contents**

The Department of Defense FY2017 President's Budget 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 2017 Budget Estimate Overview
- MDA Appropriation Summary
- Congressional Reporting Requirements
- Program Assessment Rating Tool (PART) Submission
- Acronyms
- RDT&E Exhibits in BA-03, BA-04, and BA-06

#### Volume 2b

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



# Defense-Wide FY 2017 President's Budget Exhibit P-1 FY 2017 President's Budget Total Obligational Authority (Dollars in Thousands)

29 Jan 2016

Appropriation: 0300D Procurement, Defense-Wide

	12 9 1		2015		2016	FY 20			2016	S
Line	Ident	C*0770250AW184	e & OCO)		Enacted	OCO Ena			Enacted	е
No Item Nomenclature	Code	Quantit	y Cost	Quantit	-	Quantity	Cost	Quantity	Cost	C -
Budget Activity 01: Major Equipment										
Major Equipment, Missile Defense Agency										
23 THAAD	В	38	449,478	34	447,971			34	447,971	U
24 Aegis BMD	В	52	663,316	49	566,711			49	566,711	U
25 BMDS AN/TPY-2 Radars	А		87,803		78,634				78,634	U
26 Arrow Upper Tier	В				15,000				15,000	U
27 David's Sling	Α				150,000				150,000	U
28 Aegis Ashore Phase III	В		205,601		30,587				30,587	U
29 Iron Dome	А	1	350,972	1	55,000			1	55,000	U
30 Aegis BMD Hardware and Software	Α			26	145,300			26	145,300	U
Total Major Equipment			1,757,170 		1,489,203			1	,489,203	į
Total Procurement, Defense-Wide			1,757,170		1,489,203			1	,489,203	

P-1C1: FY 2017 President's Budget (Published Version of PB Position), as of January 29, 2016 at 08:47:52

# Defense-Wide FY 2017 President's Budget Exhibit P-1 FY 2017 President's Budget Total Obligational Authority (Dollars in Thousands)

29 Jan 2016

Appropriation: 0300D Procurement, Defense-Wide

Line	Ident		2017 ase	FY 20 OCO		FY 2017 Total		S e	
No Item Nomenclature	Code	Quantity		Quantity	Cost	Quantity			
								-	
Budget Activity 01: Major Equipment									
Major Equipment, Missile Defense Agency									
23 THAAD	В	24	369,608			24	369,608	U	
24 Aegis BMD	В	35	463,801			35	463,801	U	
25 BMDS AN/TPY-2 Radars	А		5,503				5,503	U	
26 Arrow Upper Tier	В							U	
27 David's Sling	A							U	
28 Aegis Ashore Phase III	В		57,493				57,493	U	
29 Iron Dome	A		42,000				42,000	U	
30 Aegis BMD Hardware and Software	А	6	50,098			6	50,098	U	
Total Major Equipment			988,503				988,503		
Total Procurement, Defense-Wide		_	988,503			-	988,503		

P-1C1: FY 2017 President's Budget (Published Version of PB Position), as of January 29, 2016 at 08:47:52

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### **Line Item Table of Contents (by Appropriation then Line Number)**

### Appropriation 0300D: Procurement, Defense-Wide

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23	01	17	MD07	THAAD	. Volume 2b - 1
24	01	17	MD09	AEGIS BMD	Volume 2b - 13
25	01	17	MD11	BMDS AN/TPY-2 Radars	Volume 2b - 31
26	01	17	MD20	Arrow Upper Tier	Volume 2b - 55
27	01	17	MD34	David's Sling	Volume 2b - 59
28	01	17	MD73	Aegis Ashore Phase III	Volume 2b - 63
29	01	17	MD83	Iron Dome	Volume 2b - 67
30	01	17	MD90	Aegis BMD Hardware and Software	Volume 2b - 71



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### Line Item Table of Contents (Alphabetically by Line Item Title)

Line Item Title	Line Item Number	Line #	ВА	BSA	Page
AEGIS BMD	MD09	24	01	17	Volume 2b - 13
Aegis Ashore Phase III	MD73	28	01	17	Volume 2b - 63
Aegis BMD Hardware and Software	MD90	30	01	17	Volume 2b - 71
Arrow Upper Tier	MD20	26	01	17	Volume 2b - 55
BMDS AN/TPY-2 Radars	MD11	25	01	17	Volume 2b - 31
David's Sling	MD34	27	01	17	Volume 2b - 59
Iron Dome	MD83	29	01	17	Volume 2b - 67
THAAD	MD07	23	01	17	Volume 2b - 1



# Fiscal Year 2017 President's Budget Missile Defense Agency (MDA)



February 2016

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OP-32A Exhibit - Appropriation Summary of Price/Program Growth	
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Appropriation Summary	FY 2015	Price	Program	FY 2016	Price	Program	FY 2017
	<u>Actual</u>	<u>Change</u>	<u>Change</u>	Enacted	<u>Change</u>	<u>Change</u>	Estimate
O&M, Defense-Wide	\$402.5	\$6.7	\$14.9	\$424.1	\$7.5	\$15.4	\$447.0

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	FY 2015 <u>Actual</u>	FY 2016 Enacted	FY 2017 <u>Estimate</u>
1. Operational Support	402,462	424,069	446,975
Aegis Ballistic Missile Defense (BMD)	11,632	46,111	73,039
Ballistic Missile Defense (BMD) Midcourse Defense Segment	150,892	133,511	129,281
Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars	177 <b>,</b> 859	186,139	172 <b>,</b> 556
Terminal High Altitude Area Defense (THAAD)	62 <b>,</b> 079	58,308	72 <b>,</b> 099
Total Operation and Maintenance, Defense-Wide	402,462	424,069	446,975

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	FY 2015 Actual	FY 2016 Enacted	FY 2017 Estimate
1. Operational Support	402,462	424,069	446,975
Aegis Ballistic Missile Defense (BMD)	11,632	46,111	73,039
Ballistic Missile Defense (BMD) Midcourse Defense Segment	150,892	133,511	129,281
Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars	177,859	186,139	172,556
Terminal High Altitude Area Defense (THAAD)	62 <b>,</b> 079	58,308	72,099
Total Operation and Maintenance, Defense-Wide	402,462	424,069	446,975

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		FY 2015 Program	Price Growth <u>Percent</u>	Price <u>Growth</u>	Program <u>Growth</u>	FY 2016 Program	Price Growth <u>Percent</u>	Price <u>Growth</u>	Program <u>Growth</u>	FY 2017 <u>Program</u>
	<u>Travel</u>									
308	Travel of Persons	0	1.70%	0	337	337	1.80%	6	-4	339
399	Total Travel	0		0	337	337		6	-4	339
	Supplies & Materials									
401	DLA Energy (Fuel Products)	1,909	-7.30%	-139	-690	1,080	-8.20%	-89	88	1,079
499	Total Supplies & Materials	1,909		-139	-690	1,080		-89	88	1,079
	<u>Transportation</u>									
771	Commercial Transport	3,495	1.70%	59	-1,532	2,022	1.80%	36	-155	1,903
799	Total Transportation	3,495		59	-1,532	2,022		36	-155	1,903
	Other Purchases									
912	Rental Payments to GSA (SLUC)	0	1.70%	0	0	0	1.80%	0	244	244
913	Purchased Utilities (Non-	3,365	1.70%	57	-530	2,892	1.80%	52	95	3,039
914	Fund) Purchased Communications (Non-Fund)	0	1.70%	0	1,211	1,211	1.80%	22	-19	1,214
915	Rents (Non-GSA)	0	1.70%	0	238	238	1.80%	4	-4	238
917	Postal Services (U.S.P.S)	0	1.70%	0	5	5	1.80%	0	0	5
920	Supplies & Materials (Non-Fund)	9,497	1.70%	161	4,378	14,036	1.80%	253	4,969	19,258
922	Equipment Maintenance By Contract	291,636	1.70%	4,958	16,599	313,193	1.80%	5,637	-37,243	281 <b>,</b> 587
923	Facilities Sust, Rest, & Mod by Contract	18,692	1.70%	318	-8,089	10,921	1.80%	197	2,222	13,340
925	Equipment Purchases (Non-Fund)	0	1.70%	0	13 <b>,</b> 957	13 <b>,</b> 957	1.80%	251	2,173	16,381
930	Other Depot Maintenance (Non-Fund)	0	1.70%	0	10,432	10,432	1.80%	188	7,812	18,432
932	Mgt Prof Support Svcs	7,680	1.70%	131	3,259	11,070	1.80%	199	672	11,941
933	Studies, Analysis & Eval	0	1.70%	0	21	21	1.80%	0	3,664	3,685
934	Engineering & Tech Svcs	0	1.70%	0	1,647	1,647	1.80%	30	463	2,140
937	Locally Purchased Fuel (Non-Fund)	53	-7.30%	-4	-49	0	-8.20%	0	1,510	1,510

OP-32 Exhibit, Appropriation Summary of Price/Program Growth MDA-7

			Price				Price			
		FY 2015	Growth	Price	Program	FY 2016	Growth	Price	Program	FY 2017
		Program	Percent	<u>Growth</u>	<u>Growth</u>	Program	Percent	<u>Growth</u>	<u>Growth</u>	Program
987	Other Intra-Govt Purch	20,726	1.70%	352	<b>-</b> 11 <b>,</b> 391	9,687	1.80%	174	8,779	18,640
989	Other Services	45,188	1.70%	768	-30,036	15,920	1.80%	287	6,682	22,889
990	IT Contract Support	221	1.70%	4	15 <b>,</b> 175	15,400	1.80%	277	13,434	29,111
999	Services Total Other Purchases	397,058		6,745	16,827	420,630		7,571	15,453	443,654
	Total	402,462		6,665	14,942	424,069		7,524	15,382	446,975

		FY 2015 Program	Price Growth Percent	Price Growth	Program Growth	FY 2016 Program	Price Growth Percent	Price Growth	Program Growth	FY 2017 Program
	<u>Travel</u>									
308	Travel of Persons	0	1.70%	0	337	337	1.80%	6	-4	339
399	Total Travel	0		0	337	337		6	-4	339
	Supplies & Materials									
401	DLA Energy (Fuel Products)	1,909	-7.30%	-139	-690	1,080	-8.20%	-89	88	1,079
499	Total Supplies & Materials	1,909		-139	-690	1,080		-89	88	1,079
	<u>Transportation</u>									
771	Commercial Transport	3,495	1.70%	59	-1,532	2,022	1.80%	36	-155	1,903
799	Total Transportation	3,495		59	-1,532	2,022		36	-155	1,903
	Other Purchases									
912	Rental Payments to GSA (SLUC)	0	1.70%	0	0	0	1.80%	0	244	244
913	Purchased Utilities (Non- Fund)	3,365	1.70%	57	-530	2,892	1.80%	52	95	3,039
914	Purchased Communications (Non-Fund)	0	1.70%	0	1,211	1,211	1.80%	22	-19	1,214
915	Rents (Non-GSA)	0	1.70%	0	238	238	1.80%	4	-4	238
917	Postal Services (U.S.P.S)	0	1.70%	0	5	5	1.80%	0	0	5
920	Supplies & Materials (Non-Fund)	9,497	1.70%	161	4,378	14,036	1.80%	253	4,969	19,258
922	Equipment Maintenance By Contract	291,636	1.70%	4,958	16,599	313,193	1.80%	5 <b>,</b> 637	-37,243	281,587
923	Facilities Sust, Rest, & Mod by Contract	18,692	1.70%	318	-8,089	10,921	1.80%	197	2,222	13,340
925		0	1.70%	0	13,957	13 <b>,</b> 957	1.80%	251	2,173	16,381
930	Other Depot Maintenance (Non-Fund)	0	1.70%	0	10,432	10,432	1.80%	188	7,812	18,432
932	Mgt Prof Support Svcs	7,680	1.70%	131	3,259	11,070	1.80%	199	672	11,941
933	Studies, Analysis & Eval	0	1.70%	0	21	21	1.80%	0	3,664	3,685
934	Engineering & Tech Svcs	0	1.70%	0	1,647	1,647	1.80%	30	463	2,140
937	Locally Purchased Fuel (Non-Fund)	53	-7.30%	-4	-49	0	-8.20%	0	1,510	1,510

OP-32A Exhibit, Appropriation Summary of Price/Program Growth MDA-9

			Price				Price			
		FY 2015	Growth	Price	Program	FY 2016	Growth	Price	Program	FY 2017
		Program	<u>Percent</u>	<u>Growth</u>	<u>Growth</u>	Program	<u>Percent</u>	<u>Growth</u>	<u>Growth</u>	Program
987	Other Intra-Govt Purch	20,726	1.70%	352	<b>-11,</b> 391	9,687	1.80%	174	8,779	18,640
989	Other Services	45,188	1.70%	768	-30,036	15,920	1.80%	287	6,682	22,889
990	IT Contract Support	221	1.70%	4	15,175	15,400	1.80%	277	13,434	29,111
999	Services Total Other Purchases	397,058		6,745	16,827	420,630		7,571	15,453	443,654
999	Total Other Fulchases	391,036		0,743	10,627	420,030		7,571	15,455	443,034
	Total	402,462		6,665	14,942	424,069		7,524	15,382	446,975

	FY 2015	FY 2016	FY 2017	Change FY 2016/2017
Contractor FTEs (Total)	909	941	964	23

#### Personnel Summary Explanations:

The FY 2015 to FY 2016 growth provides increased operation and maintenance activities for additional deployed Aegis weapon and missile systems, and increased THAAD contractor logistics support (CLS) team and training support for the 6th THAAD Battery and AN/TPY-2 Radars.

The FY 2016 to FY 2017 growth provides increased operations and maintenance activities for additional deployed Aegis weapon and missile systems, additional Aegis missile recertifications at Maintenance Depots, post deployment Aegis computer program baseline support, initiates CLS support for the 7th THAAD Battery delivered in FY 2017, provides additional recurring THAAD training, and funds FTEs transitioned from Research, Development, Test and Evaluation (RDT&E) that are now funded with Operation and Maintenance (O&M) to provide sustainment of fielded THAAD software.

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FY 2016 President's Budget Request (Amended, if applicable)	<u>TOTAL</u> 432,068
1. Congressional Adjustments	
a. Distributed Adjustments	
1) Decrease of THAAD Batteries sustainment funded early to need	-4,900
2) Unaccounted program transfer to OUSD (C)	-2,600
b. Undistributed Adjustments	
c. Adjustments to Meet Congressional Intent	
d. General Provisions	
1) Section 8128 (Fuel Savings)	-332
2) Section 8037 (Indian Lands)	-160
3) Section 8024 (FFRDC)	-7
FY 2016 Appropriated Amount	424,069
2. War-Related and Disaster Supplemental Appropriations	
3. Fact-of-Life Changes	
FY 2016 Baseline Funding	424,069
4. Reprogrammings (Requiring 1415 Actions)	
Revised FY 2016 Estimate	424,069
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings	
FY 2016 Normalized Current Estimate	424,069
6. Price Change	7,524
7. Functional Transfers	
8. Program Increases	

8. Program Increases

a. Annualization of New FY 2016 Program

	TOTAL
b. One-Time FY 2017 Increases	
1) Aegis BMD program	11,900
c. Program Growth in FY 2017	
1) THAAD program	12,502
2) Aegis SM-3 program	8,580
3) Aegis BMD program	5,153
9. Program Decreases	
a. Annualization of FY 2016 Program Decreases	
b. One-Time FY 2016 Increases	
c. Program Decreases in FY 2017	
1) BMDS Radar program	-16,408
2) Midcourse Defense Segment program	-6,345
FY 2017 Budget Request	446,975

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

	FY 2015	Price	Program	FY 2016	Price	Program	FY 2017
	<u>Actual</u>	<u>Change</u>	<u>Change</u>	<b>Enacted</b>	<u>Change</u>	<u>Change</u>	<u>Estimate</u>
MDA	402,462	6,665	14,942	424,069	7,524	15,382	446,975

#### I. <u>Description of Operations Financed</u>:

A. Aegis Ballistic Missile Defense (BMD). Funding provides a wide range of support activities for deployed Aegis BMD ships and Ashore facilities. The three main segments of Operations and Maintenance support include Standard Missile-3 (SM-3) Sustainment, Aegis Weapon System (AWS) Sustainment, and Operational Sustainment for Aegis Ashore facilities.

The SM-3 sustainment program includes the recertification of missiles that have reached their four-year mid-life, repair during recertification, installation of Third Stage Rocket Motor (TSRM) nozzle reliability enhancements into SM-3 Block IB, demilitarization of SM-3 missiles that have reached their end of the eight-year service-life, Ordnance Assessment/Surveillance, modeling and simulation and logistics efforts. Funding also provides SM-3 first destination All Up Round (AUR) transportation post recertification, ballistic barrier maintenance for transportation, system maintenance spares replenishment, and SM-3 operational support to fleet forces. Funding in FY 2017 also includes a one-time cost to standup the Seal Beach Missile Recertification Facility to support future increased SM-3 recertification requirements.

Weapon System sustainment includes system readiness support for all fielded Aegis BMD Weapon System baselines including In-Service Engineering Agent (ISEA), Lifetime Support Engineering Agent (LSEA), and Technical Design Agent support to provide systems engineering services and analysis, integrated logistics support, and technical

#### I. <u>Description of Operations Financed (cont.)</u>

documentation maintenance. Funding provides fleet support, identification and resolution of software operability issues with Aegis Combat System elements, correction of Weapon System software deficiencies identified after completion of operational testing, certification/delivery of updated weapon systems capabilities, Reliability, Maintainability & Availability analysis/metrics, review/implementation of maintenance concepts, and analysis/resolution of Diminishing Manufacturing Sources/obsolete material issues.

Operational sustainment support for the Aegis Ashore Hawaii and Romania sites and equipment includes AWS sparing and consumables, facility operations including transportation, power and communications, and Command, Control, Communications, Computers and Intelligence (C4I), ISEA and LSEA engineering. Funds also provide portable Aegis BMD Mission Planning tools for Fleet Maritime Operation Centers, Regional BMD Commanders, and Training Commands which enables off-line planning by senior BMD staffs to develop and revise regional and homeland defense plans, Pre-Planned Responses and Global Force Management requests.

B. Ballistic Missile Defense (BMD) Midcourse Defense Segment. The Ground-based Midcourse Defense (GMD) program is the element of the Ballistic Missile Defense System (BMDS) that provides combatant commanders with a continuously available (24 hours a day, 7 days a week, 365 days a year) capability to defend the Homeland against limited intermediate and long-range ballistic missile threats in the midcourse battle space. The GMD weapon system consists of Ground Based Interceptors (GBI), GMD Fire Control systems (GFC), GMD Communications Network (GCN), In-Flight Interceptor Communications System (IFICS) Data Terminals (IDT) and all of the ground Launch Support Systems (LSS), silos, Silo Interface Vaults (SIVs), environmental control systems, Command Launch Equipment (CLE), firing circuits and safety systems. Funding provides sustainment of fielded GBIs located at Fort Greely, Alaska (FGA) and Vandenberg Air Force Base (VAFB), California; and IDTs located at Eareckson Air Station (EAS), Alaska, FGA, VAFB and Fort Drum, New York.

#### I. <u>Description of Operations Financed (cont.)</u>

Funding provides maintenance, repair, training, supply support, sustaining engineering, network operations, integrated logistics support, configuration control, scheduling, execution control, system transitioning and performance reporting functions.

Additionally, funding provides Base Operations Support (BOS) for facility sustainment and maintenance at the various GMD sites including utilities, facility maintenance, communications infrastructure support, physical security, grounds maintenance, snow removal and other services required to support the fielded weapon system.

- C. Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars. Funding provides sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 radars including 5 forward-based radars and 7 Terminal High Altitude Area Defense configured radars to include supply support, repair, maintenance, modernization, transportation, parts storage, Special Tools and Test Equipment for the organic depot, recurring and delta training, training device maintenance, engineering support, Interactive Electronic Technical Manual (IETM) updates, software user guide up-dates, 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 Upgraded Early Warning Radar (UEWR)/COBRA DANE Radar sustainment which is unique to the Missile Defense mission, which MDA sustains and operates in conjunction with the US Air Force.
- D. Terminal High Altitude Area Defense (THAAD). The increase in THAAD program funding provides additional sustainment for the 7th THAAD Battery delivered in FY 2017. Computer programs and updates have transitioned from development to sustainment. Therefore, funding requested has moved from RDT&E to O&M to now sustain fielded THAAD software. As described in the BMDS Transition and Transfer (T2) Annex, the MDA is responsible for the sustainment of the missile defense unique or developmental items, while the U.S. Army is responsible for the operations and sustainment of the common

#### I. Description of Operations Financed (cont.)

items. Beginning in FY 2017 THAAD will initiate sustainment for Battery 7 upon hardware delivery including hardware maintenance and Contractor Logistics Support (CLS). (Funding for conduct of non-recurring New Equipment Training is included in THAAD's FY 2017 Procurement request). MDA funding also provides: 1) Field and sustainment level supply, maintenance, modernization, hazardous materials/waste and disposal, and Depot level maintenance support 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) Software support for fielded software, to include reviewing deficiency reports, correcting errors, adding incremental capability improvements, and maintaining compatibility with hardware or other system interfaces. 5) Missile transportation and handling from the missile storage location to the site of the THAAD launchers. 6) Interactive Electronic Technical Manual (IETM) and Software user guide updates, and Software revision certification. 7) THAAD training device maintenance. 8) Supply, maintenance and transportation support for recurring equipment training and delta training for fielded units. 9) Special Tools and Test Equipment for the organic depot. 10) Ensures THAAD assets are properly maintained and the crews are trained to meet Combatant Commanders needs.

#### II. Force Structure Summary:

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

#### II. Force Structure Summary (cont.)

Medium-Range Ballistic Missiles (MRBM), and Intermediate-Range Ballistic Missiles (IRBM) 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.

B. Ballistic Missile Defense Midcourse Defense Segment. 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 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 standalone forward-based radars, and 7 radars which are a component of THAAD battery configuration. These services are furnished through Consolidated Contractor Logistics Support (CCLS) contracts. 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 7 batteries with 6 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). The battery requires support from the Army for

#### II. Force Structure Summary (cont.)

communications, security, common supplies, and services. THAAD missile defense unique supplies are routed to a non-theater contractor supply and specialized maintenance chain. To this end, the battery brings with it a 13 person contractor support team with its own complement of equipment. The contractor team will facilitate movement of the battery into a war zone. Interceptors are not considered part of battery force structure and are allocated by commanders in accordance with the mission and threat. Batteries will be doctrinally assigned to the theater Army Air and Missile Defense Command. Engagements will be coordinated through the theater Air Operations Center. With the provision of specialized communications and radar software, the battery will be able to communicate directly with the Ballistic Missile Defense System Command and Control Battle Management and Communications (C2BMC) system making it capable of performing surveillance and tracking missions in addition to its normal active defense engagement mission.

#### III. Financial Summary (\$ in thousands)

FY 2016 Congressional Action FY 2015 Budget Current FY 2017 A. BA Subactivities Enacted Actual Request Amount Percent Appropriated **Estimate** 1. Operational Support -7,999 -1.9 424,069 402,462 432,068 424,069 446,975 Aegis Ballistic -334 -0.7 11,632 46,445 46,111 46,111 73,039 Missile Defense (BMD) -966 -0.7 Ballistic Missile 150,892 134,477 133,511 133,511 129,281 Defense (BMD) Midcourse Defense Segment Ballistic Missile 177,859 187,486 -1,347-0.7 186,139 186,139 172,556 Defense Systems (BMDS) AN/TPY-2 Radars Terminal High Altitude 62,079 **-5**,352 -8.4 58,308 63,660 58,308 72,099 Area Defense (THAAD) 432,068 -7,999 -1.9 Total 402,462 424,069 424,069 446,975

#### III. Financial Summary (\$ in thousands)

		Change	Change
В.	Reconciliation Summary	FY 2016/FY 2016	FY 2016/FY 2017
	Baseline Funding	432,068	424,069
	Congressional Adjustments (Distributed)	-7,500	
	Congressional Adjustments (Undistributed)		
	Adjustments to Meet Congressional Intent		
	Congressional Adjustments (General Provisions)	-499	
	Subtotal Appropriated Amount	424,069	
	Fact-of-Life Changes (2016 to 2016 Only)		
	Subtotal Baseline Funding	424,069	
	Supplemental		
	Reprogrammings		
	Price Changes		7,524
	Functional Transfers		
	Program Changes		15,382
	Current Estimate	424,069	446,975
	Less: Wartime Supplemental		
	Normalized Current Estimate	424,069	

#### III. Financial Summary (\$ in thousands)

C. Reconciliation of Increases and Decreases	<u>Amount</u>	<u>Totals</u>
FY 2016 President's Budget Request (Amended, if applicable)		432,068
1. Congressional Adjustments		-7 <b>,</b> 999
a. Distributed Adjustments		
1) Decrease of THAAD Batteries sustainment funded early	-4 <b>,</b> 900	
to need		
2) Unaccounted program transfer to OUSD (C)	-2 <b>,</b> 600	
b. Undistributed Adjustments		
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
1) Section 8128 (Fuel Savings)	-332	
2) Section 8037 (Indian Lands)	-160	
3) Section 8024 (FFRDC)	-7	
FY 2016 Appropriated Amount		424,069
2. War-Related and Disaster Supplemental Appropriations		
3. Fact-of-Life Changes		
FY 2016 Baseline Funding		424,069
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2016 Estimate		424,069
5. Less: Item 2, War-Related and Disaster Supplemental		
Appropriations and Item 4, Reprogrammings		
FY 2016 Normalized Current Estimate		424,069
6. Price Change		7 <b>,</b> 524
7. Functional Transfers		
8. Program Increases		38 <b>,</b> 135
a. Annualization of New FY 2016 Program		
b. One-Time FY 2017 Increases		
1) Aegis BMD program	11,900	
Growth provides non-recurring stand-up cost for the		
Seal Beach recertification facility in order to		
support future increased Standard Missile-3 (SM-3)		

#### III. Financial Summary (\$ in thousands)

C. Reconciliation of Increases and Decreases	Amount	<u>Totals</u>
recertification requirements.		
c. Program Growth in FY 2017		
1) THAAD program	12,502	
Growth initiates CLS support for the 7th THAAD		
Battery delivered in FY 2017, increases recurring		
THAAD training, and funds contractor FTEs to sustain		
fielded THAAD software. (FY 2016 Baseline \$58,308		
thousand, 0 FTEs)		
2) Aegis SM-3 program	8 <b>,</b> 580	
Growth is due to FY 2017 initiation of IA service		
life extensions, IB mid-life recertifications and		
Third Stage Rocket Motor nozzle retrofit		
installations. (FY2016 Baseline \$46,111 thousand, 0		
FTEs)		
3) Aegis BMD program	5 <b>,</b> 153	
Growth initiates sustainment costs of software for		
BMD $4.x$ $(4.0.3)$ . (FY 2016 Baseline \$0 thousand, 0		
FTEs)		
9. Program Decreases		-22 <b>,</b> 753
a. Annualization of FY 2016 Program Decreases		
b. One-Time FY 2016 Increases		
c. Program Decreases in FY 2017	1.6.400	
1) BMDS Radar program	-16,408	
Decrease in contractor services requirements for		
logistics support and deferred radar spare purchases.		
(FY 2016 Baseline \$186,139 thousand, 0 FTEs)	6 245	
2) Midcourse Defense Segment program	-6 <b>,</b> 345	
Decrease is due to the reduction and deferment of		
all FY 2017 non-mission critical facility FSRM		
efforts. (FY 2016 Baseline \$133,511 thousand, 0 FTEs)		

III. Financial Summary (\$ in thousands)

C. <u>Reconciliation of Increases and Decreases</u>
FY 2017 Budget Request

Amount

Totals 446,975

#### IV. Performance Criteria and Evaluation Summary:

A. Aegis Ballistic Missile Defense BMD Standard Missile 3 Performance Objectives are defined in the SM-3 contracts as follows: The performance incentive of the SM-3 Cost Plus/ Incentive Fee/Award Fee (CP/IF/AF) contracts is determined by a formula designed to focus on reduction of overall maintenance cost and efficiency of recertification and the timely return of SM-3s to the fleet.

B. Ballistic Missile Defense Midcourse Defense Segment. The Ground-based Midcourse System utilizes a performance clause on the Development and Sustainment Contract (DSC) with Boeing using GMD System Availability (SA) criteria as the primary operational readiness metric to gauge the DSC Prime Contractor's sustainment performance.

The intent of using SA criteria is to maximize availability of the GMD weapon system to the warfighter for the Homeland Defense mission and to maximize the availability of operational interceptors to the Warfighter. Specifically, at any given time during performance of the contract, the DSC Contractor is responsible for making a minimum number of healthy GBIs available, and ensuring that Combatant Command minimum asset availability is maintained per established readiness criteria.

Specific SA: All calculations are based on times measured to the nearest minute.

SA = (TT - TCM - TPM - Government Directed Down Time)

(TT - Government Directed Down Time)

#### IV. Performance Criteria and Evaluation Summary:

#### SA Calculation Notes:

ТТ	Total Time (24 hrs/X days in Month)
TCM	Total downtime due to corrective maintenance actions including logistics
TPM	Total downtime due to preventative maintenance actions including logistics delay
Government Directed Down Time	When the Government expressly directs the Contractor to take the system or selected prime mission equipment asset(s) out of an operational state for a specified period of time for activities that are neither Corrective Maintenance (CM) nor Preventive Maintenance (PM). Further, GDDT includes periods when the system or assets are turned off based on unforeseen or scheduled events (beyond the control, fault or negligence of the contractor or any of its subcontractors) which created conditions that render the system unavailable to the Warfighter GDDT does not include scheduled CM and PM activities covered in the Warfighter Asset Management Process. Under Performance Based Logistics (PBL), the DSC Contractor should schedule maintenance using the Asset Management Process in a way that minimizes down time.

#### IV. Performance Criteria and Evaluation Summary:

C. Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars. Upgraded Early Warning Radars (UEWR) and COBRA DANE operations and sustainment are managed by the Air Force to maintain radars' multi-mission capability and meet specified operational availability requirements to maintain and enhance the Missile Defense mission for these radars.

For Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars, the contractor's performance in operations and sustainment will be measured by the radars' demonstrated operational demonstrated availability (Ao), defined as:

### $A_{\circ}$ = Total Time - Non Mission Capable Time Total Time

For AN/TPY-2 radars: "Total time" is defined as 24 hours per day times the number of days in the period of performance of the task order. Performance measurement does not include contractually-defined conditions that are outside the control of the Contractor and are exceptions to Ao downtime. For AN/TPY-2 radars, performance incentives are calculated as follows:

#### IV. Performance Criteria and Evaluation Summary:

Target $A_o = 95\%$				
$A_{o} > 95\%$	100% of Performance Incentive Pool			
A <sub>o</sub> ≥ 70%, <95%	Actual A <sub>o</sub> % achieved times pool amount			
$A_o < 70\%$	Performance Fee = 0%			

D. Terminal High Altitude Area Defense (THAAD). THAAD utilizes a Performance Clause in the Interim Contractor Support (ICS) contract with Lockheed Martin (LM) to incentivize LM for THAAD weapon system readiness. The assessment of the performance clause is based on evaluation of Battery Operational Readiness and Minimum Capability:

Operational Readiness (OR) is calculated by dividing the number of hours the required components (1 or 2 Tactical Statin Groups's (TSG) and 3 or 6 Launchers depending on battery) are available to accomplish the mission during a rating period by the number of hours possible during the rating period. For OR levels greater than 70% and less than or equal to 100%, the contractor is awarded an incentive fee on a sliding scale for that portion. Minimum Capability (MC) is also calculated by dividing the number of hours the required components (1 TSG and 2 Launchers) are available to accomplish the mission during a rating period by the number of hours possible during the rating period. For MC, readiness levels less than 100% the contractor is awarded zero fee for that portion.

V. <u>Personnel Summary</u>	FY 2015	FY 2016	FY 2017	Change FY 2015/ FY 2016	Change FY 2016/ <u>FY 2017</u>
Contractor FTEs (Total)	909	941	<u>964</u>	<u>32</u>	<u>23</u>

The FY 2015 to FY 2016 growth provides increased operation and maintenance activities for additional deployed Aegis weapon and missile systems, and increased THAAD contractor logistics support (CLS) team and training support for the 6th THAAD Battery and AN/TPY-2 Radars.

The FY 2016 to FY 2017 growth provides increased operations and maintenance activities for additional deployed Aegis weapon and missile systems, additional Aegis missile recertifications at Maintenance Depots, post deployment Aegis computer program baseline support, initiates CLS support for the 7th THAAD Battery delivered in FY 2017, provides additional recurring THAAD training, and funds FTEs transitioned from Research, Development, Test and Evaluation (RDT&E) that are now funded with Operation and Maintenance (O&M) to provide sustainment of fielded THAAD software.

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

		Chan	ge		Chan	ge	
	FY 2015	FY 2015/E	Y 2016	FY 2016	FY 2016/F	Y 2017	FY 2017
OP 32 Line	<u>Actual</u>	Price	Program	Enacted	Price	Program	<u>Estimate</u>
308 Travel of Persons	0	0	337	337	6	-4	339
399 Total Travel	0	0	337	337	6	-4	339
401 DLA Energy (Fuel Products)	1,909	-139	-690	1,080	-89	88	1,079
499 Total Supplies & Materials	1,909	-139	-690	1,080	-89	88	1,079
771 Commercial Transport	3,495	59	-1,532	2,022	36	-155	1,903
799 Total Transportation	3,495	59	-1,532	2,022	36	-155	1,903
912 Rental Payments to GSA (SLUC)	0	0	0	0	0	244	244
913 Purchased Utilities (Non-Fund)	3,365	57	-530	2,892	52	95	3,039
914 Purchased Communications (Non-Fund)	0	0	1,211	1,211	22	-19	1,214
915 Rents (Non-GSA)	0	0	238	238	4	-4	238
917 Postal Services (U.S.P.S)	0	0	5	5	0	0	5
920 Supplies & Materials (Non- Fund)	9,497	161	4,378	14,036	253	4,969	19,258
922 Equipment Maintenance By Contract	291,636	4,958	16,599	313,193	5 <b>,</b> 637	-37,243	281,587
923 Facilities Sust, Rest, & Mod by Contract	18,692	318	-8,089	10,921	197	2,222	13,340
925 Equipment Purchases (Non-Fund)	0	0	13,957	13,957	251	2,173	16,381
930 Other Depot Maintenance (Non- Fund)	0	0	10,432	10,432	188	7,812	18,432
932 Mgt Prof Support Svcs	7,680	131	3,259	11,070	199	672	11,941
933 Studies, Analysis & Eval	0	0	21	21	0	3,664	3,685
934 Engineering & Tech Svcs	0	0	1,647	1,647	30	463	2,140
937 Locally Purchased Fuel (Non- Fund)	53	-4	-49	0	0	1,510	1,510
987 Other Intra-Govt Purch	20,726	352	-11,391	9,687	174	8 <b>,</b> 779	18,640
989 Other Services	45,188	768	-30,036	15 <b>,</b> 920	287	6,682	22,889
990 IT Contract Support Services	221	4	15,175	15,400	277	13,434	29,111
999 Total Other Purchases	397,058	6,745	16,827	420,630	7,571	15,453	443,654
Total	402,462	6,665	14,942	424,069	7,524	15,382	446,975

The difference between the OP-32 and the Program Resources Collection

Process (PRCP) system for object classes 922 (Equipment Maintenance by

Contract) and 923 (Facilities Sustainment, Restoration, and Modernization by

Contract) for the FY 2016 Enacted and FY 2017 Estimate columns is due to a

data entry error that was not discovered until after PRCP had locked. The

error has been corrected in the above OP-32.

### CONTRACT SERVICES FUNDING (\$ in Millions)

		FY 2015	FY 2016	FY 2016	FY 2017	FY 2017
		Base & OCO	Base	OCO	Base	OCO
Line	By PB/OP-32 Inflation Category Code	Actual	Request	Request	Request	Request
914	Purchased Communications (Non-Fund)	0	1	0	1	0
	Total 23.1 - Communications, Utilities, and Misc. Charges	0	1	0	1	0
932	Mgmt and Professional Support Services	8	11	0	12	0
934	Engineering and Technical Services	0	2	0	2	0
	Total 25.1 - Advisory and Assistance Services	8	13	0	14	0
989	Other Contracts	45	16	0	23	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	45	16	0	23	0
987	Other Intra-Government Purchases	0	10	0	19	0
	Total 25.3 - Other Goods and Services from Federal Sources	0	10	0	19	0
923	Facility Maintenance	19	11	0	13	0
	Total 25.4 - Operation and Maintenance of Facilities	19	11	0	13	0
985	Research and Development Contracts					
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	292	313	0	282	0
930	Other Depot Maintenance (Non-Fund)	0	10	0	18	0
990	IT Contract Support Services	1	15	0	29	0
	Total 25.7 - Operation and Maintenance of Equipme	nt 293	338	0	329	0
964	Subsistence Contracts	_	_	_	_	_
	Total 25.8- Subsistance and Support of Persons	0	0	0	0	0
	Total	365	389	0	399	0

Source: Program Resources Collection Process as of 05 January, 2016

Numbers may not add due to rounding

#### **Contractor Full-Time Equivalents**

		FY 2015 Base & OCO	FY 2016 Base	FY 2016 OCO	FY 2017 Base	FY 2017 OCO
Line	By PB/OP-32 Inflation Category Code	Actual	Request	Request	Request	Request
914	Purchased Communications (Non-Fund)	0	4	0	4	0
	Total 23.1 - Communications, Utilities and Misc. Charges	0	4	0	4	0
932	Mgmt and Professional Support Services	14	29	0	29	0
934	Engineering and Technical Services		11		25	
	Total 25.1 - Advisory and Assistance Services	14	40	0	54	0
989	Other Contracts	20	22	0	31	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	20	22	0	31	0
987	Other Intra-Government Purchases	0	1	0	1	0
	Total 25.3 - Other Goods and Services from Federal Sources	0	1	0	1	0
923	Facility Maintenance	129	104	0	104	0
	Total 25.4 - Operation and Maintenance of Facilities	129	104	0	104	0
985	Research and Development Contracts					
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	744	716	0	716	0
930	Other Depot Maintenance (Non-Fund)	0	22		22	
990	IT Contract Support Services	2	32		32	0
	Total 25.7 - Operation and Maintenance of Equipme	nt 746	770	0	770	0
	Total	909	941	0	964	0
Source:	Program Resources Collection Process as of 05 January, 2016			Numbers	may not add due	to rounding

#### CONTRACT SERVICES

Defense-Wide Missile Defense Agency Operation and Maintenance Justification Narrative

#### Description of Services Financed:

A. Aegis Ballistic Missile Defense (BMD). Funding provides a wide range of support activities for deployed Aegis BMD ships and Ashore facilities. The three main segments of Operations and Maintenance support include Standard Missile-3 (SM-3) Sustainment, Aegis Weapon System (AWS) Sustainment, and Operational Sustainment for Aegis Ashore facilities.

The SM-3 sustainment program includes the recertification of missiles that have reached their four-year mid-life, repair during recertification, installation of Third Stage Rocket Motor (TSRM) nozzle reliability enhancements into SM-3 Block IB, demilitarization of SM-3 missiles that have reached their end of eight-year service-life, Ordnance Assessment/Surveillance, modeling and simulation and logistics efforts. Funding also provides SM-3 first destination All Up Round (AUR) transportation post recertification, ballistic barrier maintenance for transportation, system maintenance spares replenishment, and SM-3 operational support to fleet forces. Funding in FY 2017 also includes a one-time cost to standup the Seal Beach Missile Recertification Facility to support future increased SM-3 recertification requirements.

Weapon System sustainment includes system readiness support for all fielded Aegis BMD Weapon System baselines including In-Service Engineering Agent (ISEA), Lifetime Support Engineering Agent (LSEA), and Technical Design Agent support to provide systems engineering services and analysis, integrated logistics support, and technical documentation maintenance. Funding provides fleet support, identification and resolution of software operability issues with Aegis Combat System elements, correction of Weapon System software deficiencies identified after completion of operational testing, certification/delivery of updated weapon systems capabilities, Reliability, Maintainability & Availability analysis/metrics,

review/implementation of maintenance concepts, and analysis/resolution of Diminishing Manufacturing Sources/obsolete material issues.

Operational sustainment support for the Aegis Ashore Hawaii and Romania sites and equipment includes AWS sparing and consumables, facility operations including transportation, power and communications, and Command, Control, Communications, Computers and Intelligence (C4I), ISEA and LSEA engineering. Funds also provide portable Aegis BMD Mission Planning tools for Fleet Maritime Operation Centers, Regional BMD Commanders, and Training Commands which enables off-line planning by senior BMD staffs to develop and revise regional and homeland defense plans, Pre-Planned Responses and Global Force Management requests.

B. Ballistic Missile Defense (BMD) Midcourse Defense Segment. The Ground-based Midcourse Defense (GMD) program is the element of the Ballistic Missile Defense System (BMDS) that provides combatant commanders with a continuously available (24 hours a day, 7 days a week, 365 days a year) capability to defend the Homeland against limited intermediate and long-range ballistic missile threats in the midcourse battle space. The GMD weapon system consists of Ground Based Interceptors (GBI), GMD Fire Control systems (GFC), GMD Communications Network (GCN), In-Flight Interceptor Communications System (IFICS) Data Terminals (IDT) and all of the ground Launch Support Systems (LSS), silos, Silo Interface Vaults (SIVs), environmental control systems, Command Launch Equipment (CLE), firing circuits and safety systems. Funding provides sustainment of fielded GBIs located at Fort Greely, Alaska (FGA) and Vandenberg Air Force Base (VAFB), California; and IDTs located at Eareckson Air Station (EAS), Alaska, FGA, VAFB and Fort Drum, New York. Funding provides maintenance, repair, training, supply support, sustaining engineering, network operations, integrated logistics support, configuration control, scheduling, execution control, system transitioning and performance reporting functions. Additionally, funding provides Base Operations Support (BOS) for facility sustainment and maintenance at the various GMD sites including utilities, facility maintenance, communications infrastructure support, physical security, grounds maintenance, snow removal and other services required to support the fielded weapon system.

C. Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars. Funding provides sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 radars including 5 forward-based radars and 7 Terminal High Altitude Area Defense configured radars to include supply support, repair, maintenance, modernization, transportation, parts storage, Special Tools and Test Equipment for the organic depot, recurring and delta training, training device maintenance, engineering support, Interactive Electronic Technical Manual (IETM) updates, software user guide up-dates, 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 Upgraded Early Warning

Radar (UEWR)/COBRA DANE Radar sustainment which is unique to the Missile Defense mission, which MDA sustains and operates in conjunction with the US Air Force.

D. Terminal High Altitude Area Defense (THAAD). The increase in THAAD program funding provides additional sustainment for the 7th THAAD Battery delivered in FY 2017. Computer programs and updates have transitioned from development to sustainment. Therefore, funding requested has moved from RDT&E to O&M to now sustain fielded THAAD software. As described in the BMDS Transition and Transfer (T2) Annex, the MDA is responsible for the sustainment of the missile defense unique or developmental items, while the U.S. Army is responsible for the operations and sustainment of the common items. Beginning in FY 2017 THAAD will initiate sustainment for Battery 7 upon hardware delivery including hardware maintenance and Contractor Logistics Support (CLS). (Funding for conduct of non-recurring New Equipment Training is included in THAAD's FY 2017 Procurement request). MDA funding also provides: 1) Field and sustainment level supply, maintenance, modernization, hazardous materials/waste and disposal, and Depot level maintenance support 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) Software support for fielded software, to include reviewing deficiency reports, correcting errors, adding incremental capability improvements, and maintaining compatibility with hardware or other system interfaces. 5) Missile transportation and handling from the missile storage location to the site of the THAAD launchers. 6) Interactive Electronic Technical Manual (IETM) and Software user guide updates, and Software revision certification. 7) THAAD training device maintenance. 8) Supply, maintenance and transportation support for all recurring equipment training and delta training for fielded units. 9) Special Tools and Test Equipment for the organic depot. 10.) Ensures THAAD assets are properly maintained and the crews are trained to meet Combatant Commanders needs.

#### Reporting Limitations:

N/A

#### Summary of Increases/Decreases:

A. Aegis BMD program increase includes a one-time stand-up cost for the Seal Beach missile recertification facility in order to support future increased SM-3 recertification requirements, provides additional

#### MISSILE DEFENSE AGENCY

### Operation and Maintenance, Defense-Wide Fiscal Year (FY) 2017 President's Budget

missile certifications due to the increased number of deployed Aegis weapon and missile systems, and adds software sustainment for Baseline 4.x (4.0.3).

- B. Midcourse Defense Segment program decrease is due to the reduction and deferment of all FY 2017 non-mission critical facility SRM efforts.
- C. Ballistic Missile Defense Systems (BMDS) AN/TPY-2 Radars program decrease in contractor services requirements for logistics support and deferred radar spare purchases.
- D. THAAD program growth initiates CLS support for the  $7^{\text{th}}$  THAAD Battery delivered in FY 2017, increases recurring THAAD training, and funds FTEs transitioned from RDT&E that are now funded with O&M to provide sustainment of fielded THAAD software.

DATE PREPARED: 6 January 2016

POC: Tracy Flores

TELEPHONE: 256-450-3620

Appropriation/Fund	FY 2015 Actual	FY 2016 Enacted	FY 2017 Estimate
I. Management & Professional Support Services FFRDC Work	0	84	305
Non-FFRDC Work	<u>7,680</u>		
Subtotal	7,680	11,070	11,941
II. Studies, Analysis & Evaluations			
FFRDC Work	0	0	0
Non-FFRDC Work	<u>0</u> 0	<u>21</u> 21	<u>3,685</u>
Subtotal	0	21	3,685
III. Engineering & Technical Services			
FFRDC Work	0	889	1,143
Non-FFRDC Work	<u>0</u> 0	<u>758</u>	<u>997</u>
Subtotal	0	1,647	2,140
TOTAL			
FFRDC Work	0	973	1,448
Non-FFRDC Work	7,680	11,765	16,318
Reimbursable	0	0	0

#### Explanation of Funding Changes (FY 2015 to FY 2016):

The FY2015 to FY2016 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 2016 to FY 2017):

The FY 2016 to FY2017 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.

DATE PREPARED: 5 January 2016

POC: Tracy Flores

TELEPHONE: 256-450-3620

			(Dollars in Thousan		<u>nds)</u>	
Appropriation/Fund: RDT&E (0400)			FY 2015	FY 2016	FY 2017	
Management & Professional Support Services						
	FFRDC Work	932	7,288	7,288	7,206	
	Non-FFRDC Work	932	220,175	220,174	217,676	
	Sub-Tota	al	227,463	227,462	224,882	
2. Studies, Analysis & Evaluations						
	FFRDC Work	933	3,392	3,393	3,348	
	Non-FFRDC Work	933	<u>6,421</u>	<u>6,421</u>	<u>6,436</u>	
	Sub-Tota	al	9,813	9,814	9,784	
3. Engineering & Technical Services						
	FFRDC Work	934	131,666	131,535	115,877	
	Non-FFRDC Work	934	<u>151,108</u>	<u>142,938</u>	<u>151,862</u>	
	Sub-Tota	al	282,774	274,473	267,739	
	TOTAL		520,050	511,749	502,405	
	FFRDC Wor	k	142,347	142,215	126,431	
	Non-FFRDC Wor	k	377,703	369,534	375,974	

DATE PREPARED: 6 January 2016

POC: Tracy Flores

TELEPHONE: 256-450-3620

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MISSILE DEFENSE AGENCY		<u>Foreign</u>	<u>National</u>	
	US Direct Hire	Direct Hire	Indirect Hire	<u>Total</u>
1. FY 2015 FTEs	0	0	0	0
2. FY 2016 FTEs	0	0	0	0
3. FY 2017 FTEs	0	0	0	0
MDA - Operation and Maintenance (O&M)		Foreign	<u>National</u>	
	US Direct Hire	Direct Hire	Indirect Hire	<u>Total</u>
1. FY 2015 FTEs	0	0	0	0
2. FY 2016 FTEs	0	0	0	0
3. FY 2017 FTEs	0	0	0	0
MDA - Research, Development, Test and Evalua	tion (RDT&E)			
		<u>Foreign</u>		
	US Direct Hire	<u>Direct Hire</u>	Indirect Hire	<u>Total</u>
1. FY 2015 FTEs	0	0	0	0
2. FY 2016 FTEs	0	0	0	0
3. FY 2017 FTEs	0	0	0	0
			· · •	
MDA - Defense Working Capital Fund (DWCF)		Foreign		
	US Direct Hire	Direct Hire	Indirect Hire	<u>Total</u>
1. FY 2015 FTEs	0	0	0	0
2. FY 2016 FTEs	0	0	0	0
3. FY 2017 FTEs	0	0	0	0
		<b>5</b>		
4. SUMMARY	HC Diment Him	Foreign :		m - + - 1
	US Direct Hire	Direct Hire	Indirect Hire	<u>Total</u>
FY 2015				

RDT&E Total	2,338	0	0	2,338
Direct Funded	2,300	0	0	2,300
Reimbursable Funded	38	0	0	38
Total Component	2,338	0	0	2,338
Direct Funded	2,300	0	0	2,300
Reimbursable Funded	38	0	0	38
FY 2016				
RDT&E Total	2,551	0	0	2,551
Direct Funded	2,484	0	0	2,484
Reimbursable Funded	67	0	0	67
Total Component	2,551	0	0	2,551
Direct Funded	2,484	0	0	2,484
Reimbursable Funded	67	0	0	67
FY 2017				
RDT&E Total	2,388	0	0	2,388
Direct Funded	2,295	0	0	2,295
Reimbursable Funded	93	0	0	93
Total Component	2,388	0	0	2,388
Direct Funded	2,295	0	0	2,295
Reimbursable Funded	93	0	0	93

#### 5. Summary of Changes

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

#### Change from FY 2015 to FY 2016:

Due to continued hiring limitations and delays in hiring civilians for the FY2015 Missile Defense Career Development Program, actual FTE for FY2015 is lower than the FY2015 Civilian Target of 2,727. Due to under executing in FY2015, there appears to be growth from FY2015 to FY2016.

#### Change from FY 2016 to FY 2017:

MDA's net decrease of 163 FTE in FY 2016 reflects the implementation of civilian FTE efficiencies resulting from the Department's Civilian Workload Analysis initiative and the 25% reduction to Management Headquarters operating budgets

DATE PREPARED: 6 January 2016

POC: Tracy Flores

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#### Fiscal Year: FY 2015

	propriation Account: Operation & Maintenance, MDA	
Α.	SUMMARY OF CIVILIAN PAY: 1. Total Civilian Pay 2. Reimbursable Civilian Pay	0
В.	REIMBURSABLE CIVILIAN PAY DISTRIBUTION BY SOURCE: 3. INTRA ACCOUNT	<u>0</u>
	4. INTRA SERVICE	<u>O</u>
	5. INTER SERVICE 5a. DSCA, FMS (Approp 8242) 5b. DAU, DAWDF (Approp 0111)	<u>0</u> 0 0
	6. ALL OTHER 6a. FMS CASE	<u>0</u> 0
С.	CIVILIAN PAY REIMBURSED TO OTHER SERVICES/DEFENSE AGENCIES: 7. Civilian Pay REIMBURSED from O&M MDA to	O

#### Fiscal Year: FY 2016

	propriation Account: Operation & Maintenance, MDA SUMMARY OF CIVILIAN PAY:	
Α.	1. Total Civilian Pay 2. Reimbursable Civilian Pay	0
В.	REIMBURSABLE CIVILIAN PAY DISTRIBUTION BY SOURCE: 3. INTRA ACCOUNT	0
	4. INTRA SERVICE	0
	5. INTER SERVICE 5a. DSCA, FMS (Approp 8242)	<u>0</u> 0
	6. ALL OTHER 6a. FMS CASE	<u>0</u> 0
С.	CIVILIAN PAY REIMBURSED TO OTHER SERVICES/DEFENSE AGENCIES: 7. Civilian Pay REIMBURSED from O&M MDA to	0

#### Fiscal Year: FY 2017

Appropriation Account: Operation & Maintenance, MDA A. SUMMARY OF CIVILIAN PAY:	
1. Total Civilian Pay	0
2. Reimbursable Civilian Pay	0
B. REIMBURSABLE CIVILIAN PAY DISTRIBUTION BY SOURCE:	
3. INTRA ACCOUNT	<u>0</u>
4. INTRA SERVICE	<u>0</u>
5. INTER SERVICE	<u>0</u> 0
5a. DSCA, FMS (Approp 8242)	
5b. DAU, DAWDF	0
6. ALL OTHER	0
6a. FMS CASE	0
C. CIVILIAN PAY REIMBURSED TO OTHER SERVICES/DEFENSE AGENCIES:	
7. Civilian Pav REIMBURSED from O&M MDA to	0

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### **Missile Defense Agency**

### Fiscal Year 2017

### President's Budget Submittal

### **Military Construction Exhibit**



February 2016

#### MISSILE DEFENSE AGENCY FY 2017 MILITARY CONSTRUCTION PRESIDENTS BUDGET SUBMITTAL DESCRIPTIVE SUMMARIES

#### (\$ in Thousands)

<u>Program</u>	<b>Authorization</b>	<b>Appropriation</b>
Major Construction	176,230	176,230
Unspecified Minor Construction	2,414	2,414
MILCON Planning & Design	0	0
TOTAL MILITARY CONSTRUCTION	178,644	178,644

# MISSILE DEFENSE AGENCY FY 2017 MILITARY CONSTRUCTION, DEFENSE-WIDE PROJECT SUMMARY BY LOCATION

#### (\$ in Thousands)

State/Country/Installation/Project	Authorization <u>Request</u>	Approp. <u>Request</u>	New/Current <u>Mission</u>	Page <u>No.</u>
<b>Major Construction</b>				
Alaska Clear Air Force Station (AFS) Long Range Discrimination Radar System Complex, Phase 1	155,000	155,000	N	4
Fort Greely Missile Defense Complex Switchgear Facility	9,560	9,560	С	9
Wake Island Wake Island Air Base Test Support Facility	11,670	11,670	С	13
<b>Unspecified Minor Construction</b>	2,414	2,414		17
MILCON Planning and Design	0	0		
TOTAL MILITARY CONSTRUCTION	178,644	178,644		

1. COMPONENT  MDA	FY 2017 MILITARY CONSTRUCTION PROJECT DATA					A	2. DATE Feb 2016	
3. INSTALLATION AND LOCATION 4. COMMAND					5. AREA CONSTR.			
Clear AFS, Alaska			Missile	Defens	se Agen	су	2 . 4 4	
6. PERSONNEL	PERSONNEL PERMANENT		STUDENTS SUPPORTE			-D		
STRENGTH:	OFFICER ENLISTED CIVILIAN	OFFICER	1	I			1	TOTAL
N/A: Tenant of U.S. Air Force								
	7. IN	VENTORY	DATA (\$000)					
A. TOTAL ACERAGE					N/A	7		
B. INVENTORY TOTAL AS	OF				N/A	7		
C. AUTHORIZATION NOT YET IN INVENTORY					0			
D. AUTHORIZATION REQU	ESTED IN THE FY2017				15	55,000		
E. AUTHORIZATION REQU	ESTED IN THE FY2018				0			
F. PLANNED IN NEXT THR	EE PROGRAM YEARS				15	50,000		
G. REMAINING DEFICIENCY					0			
H. GRAND TOTAL.					30	5,000		
CATEGORY CODE PRO 1413 Lor	DIN THE FY2017 PROGRAM:  DIECT TITLE  ng Range Discrimination  stem Complex, Phase 1	Radar	SCOPE 1 EA	(\$0	/	DESIGN START Jan 15	COMPLETE	
9. FUTURE PROJECTS: CATEGORY							COST	
CODE F	PROJECT TITLE				SCOPE		(\$000)	
	Long Range Discriminati Complex, Phase 2	on Rada	ar System	n	1 EA		150,000	
						Total:	150,000	)

Pacific theater.

#### 11. OUTSTANDING POLLUTION AND SAFETY DEFICIENCIES:

A. Air Pollution: N/AB. Water pollution: N/A C. Occupational safety and health (OSH): N/A

# 1. COMPONENT MDA FY 2017 MILITARY CONSTRUCTION PROJECT DATA 2. DATE Feb 2016

3. INSTALLATION AND LOCATION 4. PROJECT TITLE

Clear AFS, Alaska Long Range Discrimination Radar System Complex, Phase 1

8. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST (\$000)		
0604873C	1413	MDA 657	155,000		

9. COST ESTIMATES								
ITEM	U/M	QU	ANTITY	UNIT C	OST	COST \$(000)		
PRIMARY FACILITIES						75 <b>,</b> 751		
Mission Control Facility (141391)	m2 (SF)	5 <b>,</b> 574	(60,000)	10,646	(989)	(59 <b>,</b> 340)		
Radar Foundation	LS					(2,607)		
Special Construction	LS					(9,150)		
Nearfield Antenna (132134)	EA		2	350,0	000	(700)		
Entry Control Facility (730837)	m2 (SF)	102	(1,100)	7 <b>,</b> 280	(676)	(744)		
Antiterrorism/Force Protection	LS					(2,180)		
Security Infrastructure/ESS	LS					(1,030)		
SUPPORTING FACILITIES						62 <b>,</b> 857		
Electric Service	LS					(24,491)		
Water, Sewer	LS					(11,179)		
Paving, Walks	LS					(1,137)		
Site Imp (11.5M) / Demo (1.4M)	LS					(12,900)		
Information/Communication Systems	LS					(4,060)		
Temporary Infrastructure Mob/Demob	LS					(9,090)		
SUBTOTAL						138,608		
CONTINGENCY (5.00%)						6,931		
TOTAL CONTRACT COST						145 <b>,</b> 539		
SIOH (6.50%)						9,461		
TOTAL REQUEST						155,000		
TOTAL ROUNDED REQUEST						155 <b>,</b> 000		
INSTALLED EQUIPMENT-OTHER APPROP						(893 <b>,</b> 728)		

10. DESCRIPTION OF PROPOSED CONSTRUCTION: This project constructs a Long Range Discrimination Radar (LRDR) System Complex at Clear AFS, Alaska, supporting missile defense command and control components. The complex will consist of high-altitude electromagnetic pulse (HEMP) constructed LRDR infrastructure to include a mission control facility and foundation for the radar equipment. The complex will be within a System Security Level A (SSL-A) secure boundary with an entry control facility. Additional construction includes lightning protection, equipment grounding systems, nearfield antennas, electronic security system infrastructure, site boundary and restricted area security fencing, barriers, and gates.

Special Construction includes HEMP/Electro-Magnetic Interference (EMI) shielding and testing in mission support areas. Mission facilities will include features to meet site specific ground motion and seismic requirements. The constructed Mission Control Facility will be designed to obtain LEED Silver Certification.

Supporting facilities include overall site development, electrical services, utility building and commercial power electric substation, water, sewer, cooling water wells, paving, walks, storm drainage, fire protection and alarm systems, site improvements and demolition, telecommunication distribution and information management systems. The project also includes wastewater, sewage collection and disposal designed as a septic tank / leach field system.

Temporary infrastructure will support site improvements and preparation for construction. Improvements include temporary roads, construction site fence, temporary power, mobilization and demobilization.

Installed building equipment includes special flooring, redundant mechanical and electrical systems, uninterruptable power system and electronic controls to monitor building systems and the base infrastructure. A/C is estimated at 140 tons.

MDA

#### **FY 2017 MILITARY CONSTRUCTION PROJECT DATA**

2. DATE

Feb 2016

#### 3. INSTALLATION AND LOCATION

Clear AFS, Alaska

4. PROJECT TITLE

5. PROJECT NUMBER

MDA 657

11. REQUIRED: 1 EA Complex

ADEQUATE: NONE

SUBSTANDARD:

PROJECT: Construct a new Long Range Discrimination Radar System Complex at Clear AFS, Alaska. (New Mission)

Long Range Discrimination Radar System Complex, Phase 1

REQUIREMENT: This project is required for deployment of a new midcourse sensor that will provide midcourse Ballistic Missile Defense System (BMDS) discrimination capability to defend the United States from ballistic missile attacks and meet the 2020 MDA Enhanced Homeland Defense Capability. When complete, this radar will function as part of the BMDS and be functionally capable through the MDA Command, Control, Battle Management and Communications (C2BMC) system. Construction is planned to allow radar prime contractor integration in 2019. In addition, Air Force Space Command envisions using LRDR's inherent space situational awareness capabilities to augment the Space Surveillance Network.

CURRENT SITUATION: There are no existing facilities that can be modified to house a new midcourse sensor. The new LRDR complex will expand radar coverage and increase the level of sophistication in radar discrimination beyond what is currently available to support the BMDS.

IMPACT IF NOT PROVIDED: If this project is not provided, enhanced midcourse sensor discrimination capability will not be deployed and the BMDS will be less capable against expected threats in 2020 and beyond.

ADDITIONAL INFORMATION: As applicable, this project shall comply with UFC 1-200-01, "General Building Requirements", providing model building codes and government-unique criteria for typical design disciplines and building systems, as well as for accessibility, antiterrorism, security, sustainability, and safety. All required NEPA and/or EO 12114 analyses will be completed prior to the start of construction. The project is being coordinated with the Installation Master Plan.

Research, Development, Test & Evaluation (RDT&E) funds are programmed to provide security control and a temporary man camp to support lodging and dining in support of site activation. In addition, an RDT&E effort will demilitarize and remove the remaining BMEWS AN/FPS-50 detection radar fixed antenna, transmitter equipment, and two tracking radars.

The Radar structure, enclosure, and associated equipment will be provided with other appropriations by the radar prime contractor.

A follow-on Phase 2 project is planned to construct a mission power plant, diesel fuel storage and load/unload point, an on-site maintenance facility, and associated site support. Portions of the Mission Facilities must be HEMP protected in accordance with MIL-STD-188-125 "High Altitude Electromagnetic Pulse (HEMP) Protection".

This project has been evaluated for compliance with Executive Orders 11988 Flood Plain Management and 11990 Protection of Wetlands and the Flood Plain Management Guidelines of U.S. Water Resources Council. The project is not sited in the 100-year flood plain and will be sited to preserve and enhance the natural and beneficial values of wetlands; and minimize the destruction, loss or degradation of wetlands.

Cost estimates were derived from the LRDR System Complex 35% design.

MDA

### **FY 2017 MILITARY CONSTRUCTION PROJECT DATA**

2. DATE

Feb 2016

#### 3. INSTALLATION AND LOCATION

Clear AFS, Alaska

4. PROJECT TITLE Long Range Discrimination Radar System Complex, Phase 1

**5. PROJECT NUMBER** 

MDA 657

#### 12. SUPPLEMENTAL DATA:

- A. Estimated Design Data
  - (1) Status:

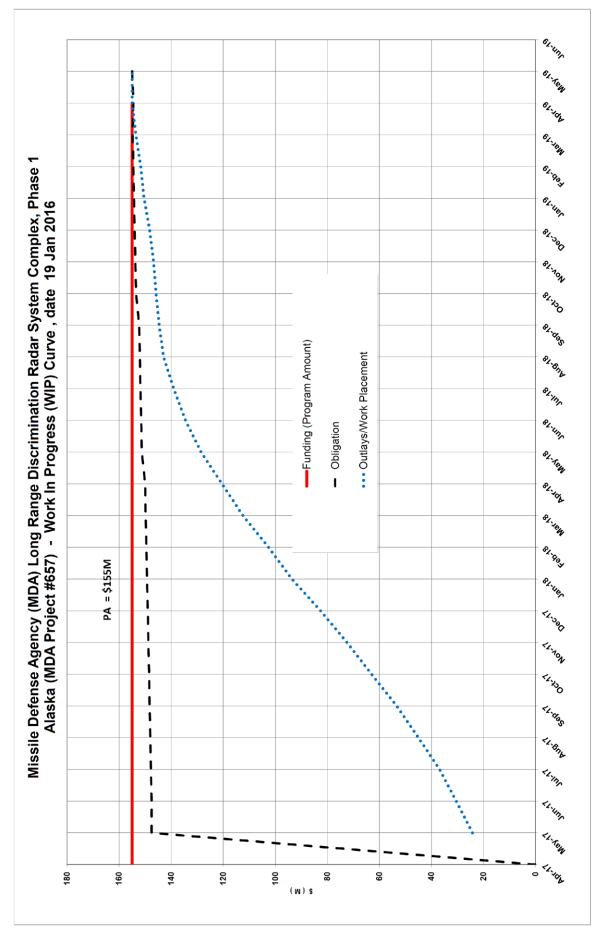
(a)	Date Design Started	Jan 2015
(b)	Percent Complete As Of January 2016	50%
(C)	Date 35% Design Complete	Oct 2015
(d)	Date Design Complete	Sep 2016
(e)	Parametric Cost Estimating Used To Develop Cost	No
(f)	Type of Design Contract	Design-Bid-Build

(2)	Basis	:	
	(a)	Standard or Repetitive Design	No
	(b)	Where Design Was Most Recently Used	N/A
(3)	Total	Design Cost (c) = $(a) + (b)$ or $(d) + (e)$	(\$000)
	(a)	Production of Plans and Specifications	9,300
	(b)	All Other Design Costs	6,200
	(C)	Total Design Costs	15,500
	(d)	Contract	10,850
	(e)	In-House	4,650
(4)	Contr	act Award	Mar 2017
(5)	Const	ruction Start	Jun 2017
(6)	Const	ruction Completion	Aug 2020

B. Equipment associated with this project which will be provided from other appropriations:

Equipment Nomenclature	Appropriation	FY Appropriated or Requested	Cost \$(000)
Radar System Equipment & Encl.	RDT&E	FY16-FY21	868,758
Mission Comms Equipment			
Security Equipment (IESS)			
Installed Building Equipment			
Commercial Power Extension			
Demil/Remove BMEWS Antenna/Equip/Radars	RDT&E	FY16-FY17	100
Site Activation	RDT&E	FY16-FY18	24 <b>,</b> 870
		TOTAL:	893 <b>,</b> 728





1. COMPONENT						2. DATE	
MDA	FY 2017 MILITARY	CONS	TRUCTION	Feb	Feb 2016		
3. INSTALLATION AND LOC	 ATION		4. COMMAND	<u> </u>	5. AREA	CONSTR.	
D C 71-	-1			_			Γ INDEX
Fort Greely, Ala	SKa		Missile	Defens	se Agency	2	.45
6. PERSONNEL	PERMANENT		STUDENTS		SUPPORT	ΓED	
STRENGTH:	OFFICER ENLISTED CIVILIAN	OFFICE	RENLISTED	CIVILIAN	OFFICER ENLISTE	D CIVILIAN	TOTAL
N/A: Tenant of U.S. Army							
	7. IN\	/ENTORY	DATA (\$000)				
A TOTAL AOFDAOF					NT / T		
A. TOTAL ACERAGE  B. INVENTORY TOTAL AS C	NE.				N/A N/A		
					N/A 0		
C. AUTHORIZATION NOT YILL D. AUTHORIZATION REQUE					9 <b>,</b> 560		
E. AUTHORIZATION REQUE					0		
F. PLANNED IN NEXT THRE					0		
G. REMAINING DEFICIENCY					0		
H. GRAND TOTAL.	•				9 <b>,</b> 560		
	IN THE EVOCAT RECORD AN						
8. PROJECTS REQUESTED CATEGORY						N STATUS	
	JECT TITLE sile Defense Complex		SCOPE 1,400 SF	( <b>\$0</b> 9,5	<b>00) START</b> 560 Jul 15	COMPLETE Sep 16	
	tchgear Facility <sup>1</sup>		•	,		-	
9. FUTURE PROJECTS:							
CATEGORY CODE PI	ROJECT TITLE	SC	OPE	CO (\$0			
			· -	(40	55,		
10. MISSION OR MAJOR FL	JNCTIONS: The mission of	the M	issile De	fense A	Agency (MDA)	is to deve	elop and
field an integrate	ed, layered Ballistic N ved forces, allies, and	Missile	Defense	System	(BMDS) to de	fend the	United
	nases of flight. The S						
	Midcourse Defense Syste cructs a shielded Switc						
and site electrica	al infrastructure upgra	ades to	support	curren	t survivabili		ar units
reliability, avail	ability, and maintaina	ability	(RAM) re	equirem	ents.		
	TION AND SAFETY DEFICIENCIES:		37 /-	75			
A. Air Pollu B. Water pol			N/2 N/2				
=	nal safety and health	(OSH):	N/2				
1	<u>.</u>	, -	,				

MDA

### **FY 2017 MILITARY CONSTRUCTION PROJECT DATA**

2. DATE

Feb 2016

3. INSTALLATION AND LOCATION

Fort Greely, Alaska

4. PROJECT TITLE

Missile Defense Complex Switchgear Facility

8. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST (\$000)	
0603882C	89113	MDA 653	9,560	

9. COST ESTIMATES									
ITEM	U/M	QUANTITY	UNIT CO	COST \$(000)					
PRIMARY FACILITIES					7,590				
Switchgear Facility (89113)	m2 (SF	) 130 (1,400)	31,831	(2 <b>,</b> 956)	(4,138)				
Electrical Switching Station (81350)	KV	12.47	151,0	83	(1,884)				
Special Construction	LS				(914)				
Switchgear Pad (85225)	m3 (CY	77 (100)	263	(480)	(48)				
Transformer (81360)	KV	12.47	244		(366)				
Security Fence/Force Protection/ESS	LS				(240)				
SUPPORTING FACILITIES					959				
Electrical	LS				(675)				
Water, Sewer, Gas	LS				(5)				
Paving, Walks	LS				(50)				
Mob / Demob	LS				(200)				
Site Improvements / Demo	LS				(20)				
Information/Communication Systems	LS				(9)				
SUBTOTAL					8 <b>,</b> 549				
CONTINGENCY (5.00%)					427				
TOTAL CONTRACT COST					8 <b>,</b> 976				
SIOH (6.50%)					583				
TOTAL REQUEST					9,560				
TOTAL REQUEST ROUNDED					9,560				
INSTALLED EQUIPMENT-OTHER APPROP					(100)				

10. DESCRIPTION OF PROPOSED CONSTRUCTION: Construct a shielded Switchgear Facility to include a switching station with switchgear and all necessary safety and security equipment, two shielded enclosures, concrete pad, and associated electrical infrastructure upgrades at Fort Greely, Alaska. The Switchgear Facility will provide redundant automatic switchgear units and other electrical equipment supporting the two existing In-Flight Interceptor Communications System (IFICS) Data Terminals (IDTs).

The shielded Switchgear Facility construction will contain the primary power equipment to support the IDT units: redundant switchgear units, electrical breakers, and two - 750 KVA transformers. The Switchgear Facilities' protection includes 1/4-inch thick steel plates and IDT test connection points. The shielding requires testing and certification.

The switchgear concrete pad construction will include features to meet site specific ground motion and seismic requirements. Security infrastructure will include fencing, bollards, and an electronic security system.

Supporting facilities include: site electrical power system and grounding system upgrades; coordination improvements, electrical conduits and manhole upgrades, paving, fire protection and alarm systems, and information management systems. Site preparation includes clearing, grubbing, site grading, and demolition of a fence and existing transformers.

MDA

#### **FY 2017 MILITARY CONSTRUCTION PROJECT DATA**

2. DATE

Feb 2016

NONE

#### 3. INSTALLATION AND LOCATION

Fort Greely, Alaska

4. PROJECT TITLE 5. PROJECT NUMBER

Missile Defense Complex Switchgear Facility

MDA 653

**11. REQUIRED:** 1,400 SF

ADEQUATE: NONE

SUBSTANDARD:

<u>PROJECT:</u> Construct a shielded Switchgear Facility, associated electrical infrastructure upgrades, and supporting facilities. (Current Mission)

REQUIREMENT: This project is required to provide the Ground-Based Midcourse Defense System with increased capabilities for homeland defense. This project constructs a shielded Switchgear Facility providing redundant switchgear units and site electrical infrastructure upgrades to support current survivability and reliability, availability, and maintainability (RAM) requirements. The redundant switchgear units will support the two existing IDT units on the Missile Defense Complex (MDC) at Fort Greely, Alaska. The shielded Switchgear Facility and site electrical infrastructure upgrades will contribute to the end-to-end protection of the mission assets on the MDC.

<u>CURRENT SITUATION:</u> The lack of this new shielded switchgear for the IDT units limits improvements to the mission readiness and capability of the Ground-Based Midcourse System to perform missile defense operations.

<u>IMPACT IF NOT PROVIDED:</u> Planned enhancements for the shielded protection of the Ballistic Missile Defense System will not be available for our Nation's homeland defense.

ADDITIONAL INFORMATION: This project is being coordinated with the appropriate physical security plans and includes required physical security and/or combating terrorism measures. All required NEPA and/or EO 12114 analyses will be completed prior to the start of construction. The project has been coordinated with the Installation Master Plan, and will be located on the Missile Defense Complex.

This project has been evaluated for compliance with Executive Orders 11988 Flood Plain Management and 11990 Protection of Wetlands and the Flood Plain Management Guidelines of U.S. Water Resources Council. The project has been sited to manage the risk of flood loss; minimize the impact of floods on human safety, health and welfare; preserve and enhance the natural and beneficial values of wetlands; and minimize the destruction, loss or degradation of wetlands.

The Switchgear Facility is an uninhabited space; and therefore exempt from Americans with Disabilities Act and Leadership in Energy and Environmental Design requirements.

#### 1. COMPONENT 2. DATE **FY 2017 MILITARY CONSTRUCTION PROJECT DATA** MDA Feb 2016

### 3. INSTALLATION AND LOCATION

Fort Greely, Alaska

4. PROJECT TITLE 5. PROJECT NUMBER Missile Defense Complex Switchgear Facility MDA 653

#### 12. SUPPLEMENTAL DATA:

- A. Estimated Design Data
  - (1) Status:

(a) Date Design Started	Jul 2015
(b) Percent Complete As Of January 2016	35%
(c) Date 35% Design Complete	Jan 2016
(d) Date Design Complete	Sep 2016
(e) Analogous Cost Estimating Used To Develop Cost	Yes
(f) Type of Design Contract	Design-Bid-Build

(2)	Basis	:		
	(a)	Standard or Repetitive Design		No
	(b)	Where Design Was Most Recently Used	N	/A
(3)	Total	Design Cost (c) = $(a) + (b)$ or $(d) + (e)$	(\$0	00)
	(a)	Production of Plans and Specifications	5	19
	(b)	All Other Design Costs	3	46
	(C)	Total Design Costs	8	65
	(d)	Contract	6	06
	(e)	In-House	2	59
(4)	Contr	act Award	Mar 20	17
(5)	Const	ruction Start	May 20	17
(6)	Const	ruction Completion	Aug 20	19

B. Equipment associated with this project which will be provided from other appropriations:

		FY	
Equipment Nomenclature	Procuring Appropriation	Appropriated or Requested	Cost \$(000)
Security Equipment	RDT&E	FY17	100
		Total:	100

1. COMPONENT									2. DATE		
MDA	F`	FY 2017 MILITARY CONSTRUCTION PROJECT DATA								Feb 2016	
3. INSTALLATION AND LO	CATION				4. COMMAND				5. AREA CONSTR. COST INDEX		
Wake Island					Missile Defense Agency 2.61						
6. PERSONNEL	F	PERMANEN	Γ	•	STUDENTS	}	5	SUPPORTE	D		
STRENGTH:	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	TOTAL	
N/A: Tenant of U.S. Air Force											
			7. IN\	VENTORY	DATA (\$000)						
							,				
A. TOTAL ACERAGE							N/A	A			
B. INVENTORY TOTAL AS	OF						N/A	A			
C. AUTHORIZATION NOT	YET IN INVEN	NTORY					0				
D. AUTHORIZATION REQI	JESTED IN TI	HE FY2017					11	L <b>,</b> 670			
E. AUTHORIZATION REQU	JESTED IN TI	HE FY2018					0				
F. PLANNED IN NEXT THE	EE PROGRA	M YEARS					0				
G. REMAINING DEFICIEN	CY						0				
H. GRAND TOTAL.							11	,670			
8. PROJECTS REQUESTED IN THE FY2017 PROGRAM:  CATEGORY  CODE  PROJECT TITLE  SCOPE  (\$000)  START  COMPLETE  37110  Test Support Facility  8,200 SF  11,670  Oct 15 Oct 16											
9. FUTURE PROJECTS:  CATEGORY  CODE	PROJECT TII	'LE		sco	DPE	CO (\$0					
10. MISSION OR MAJOR FUNCTIONS: The mission of the Missile Defense Agency (MDA) is to develop and field an integrated, layered Ballistic Missile Defense System (BMDS) to defend the United States, our deployed forces, allies, and friends against all ranges of enemy ballistic missiles in all phases of flight. The Test Support Facility project is required to support at least 12 flight tests planned at Wake Island through 2024 per the MDA Integrated Master Test Plan including FTO-03 E2 which is currently scheduled for 4th QTR FY18.											
11. OUTSTANDING POLLUA. Air Poll		AFETY DEF	ICIENCIES:		T/I	/A					
B. Water po						/ A / A					
=		ety and	health	(OSH):		/ A / A					
<u>.</u> .	C. Occupational safety and health (OSH): N/A										

### 1. COMPONENT 2. DATE

MDA FY 2017 MILITARY CONSTRUCTION PROJECT DATA Feb 2016

3. INSTALLATION AND LOCATION 4. PROJECT TITLE

Wake Island Test Support Facility

 5. PROGRAM ELEMENT
 6. CATEGORY CODE
 7. PROJECT NUMBER
 8. PROJECT COST (\$000)

 0603914C
 37110
 MDA 662
 11,670

		9. CO	ST ESTIM	ATES				
ITEM		ι	J/M	Q	UANTITY	UNIT	COST	COST \$(000)
PRIMARY FACILITIES								8,536
Test Support Facility (	(37110)	m2	(SF)	762	(8,200)	11,205	(1,041)	(8,536)
SUPPORTING FACILITIES								1,929
Site Electrical		]	S					(863)
Water, Sewer		]	S					(388)
Paving, Walks		]	LS .					(233)
Site Improvement/Demo		]	S					(213)
Information/Communicati	ons Systems	]	S					(174)
Antiterrorism/Force Pro	tection	]	LS .					(58)
SUBTOTAL								10,465
CONTINGENCY (5.00%)								523
TOTAL CONTRACT COST								10,988
SIOH (6.20%)								682
TOTAL REQUEST								11,670
TOTAL REQUEST ROUNDED								11,670
INSTALLED EQUIPMENT-OTH	IER APPROP							(500)

10. DESCRIPTION OF PROPOSED CONSTRUCTION: Construct supporting foundation and procure and install an insulated, pre-engineered, single-story, metal building. The facility includes mission execution workspace, office space, conference room, elevated storage, restrooms, and mechanical-electrical room. The project includes air conditioning (A/C), plumbing, power, lighting, lightning protection, fire alarm, and fire suppression.

Supporting facilities include site work to extend utilities to the facility; an aggregate access road; paving and walkways; information/communication infrastructure; connections to support backup power; and antiterrorism/force protection. The constructed facility will be designed to obtain LEED Silver Certification. A/C is estimated at 25 tons. The facility will provide work space for approximately 60 deployed personnel during test events.

11. REQUIRED: 8,200 SF ADEQUATE: NONE SUBSTANDARD: 7,100 SF

PROJECT: Construct a new test support facility on Wake Island for Ballistic Missile Defense
System test missions. (Current Mission)

REQUIREMENT: MDA has an established test capability on and around Wake Island with an operational area covering almost a million square kilometers. The highly complex integrated test deployments executed by the Agency require extensive support. The Test Support Facility (TSF) is required to provide mission-critical support that would otherwise be unavailable on-island. The facility supports multiple Ballistic Missile Defense Test Stakeholders, including flight test communications and infrastructure personnel responsible for time critical infrastructure build-up activities; the Mission Execution Team responsible for managing and executing inherent on-island activities to support flight test execution; Operational Test Authority and other Warfighter representatives; and special dedicated contract Subject Matter Experts supporting birth to death test execution activities. The facility is a central hub from which test build-up, test support, and test execution personnel can support and manage all on-island mission activities. The facility also provides critical functionality necessary for forward deployed asset managers and test support personnel to coordinate with CONUS-based leadership prior to and during test execution, including voice communications, MDA network connectivity, and conference room

MDA

#### **FY 2017 MILITARY CONSTRUCTION PROJECT DATA**

2. DATE

Feb 2016

#### 3. INSTALLATION AND LOCATION

Wake Island

4. PROJECT TITLE 5. PROJECT NUMBER

Test Support Facility MDA 662

11. REQUIRED (CONTINUED): capacity to support MDA leadership. This facility enables deployed personnel to safely and securely meet all test support and test safety requirements on Wake Island. The new facility is required to replace the current functionality of Building 1601. Due to the facility's poor condition and lack of other similar and available space on Wake, future mission personnel will have to be re-located into a new facility.

<u>CURRENT SITUATION:</u> The current support facility, Building 1601, has been heavily damaged by the corrosive environment on Wake Island and is now in a state of disrepair. The 611th Civil Engineering Squadron inspects Building 1601 annually and estimates it must be vacated within five years or less due to its poor condition. There are no other on-island facilities available to provide sufficient operations and support space.

IMPACT IF NOT PROVIDED: If not funded, MDA will have insufficient test support space required during test deployments to ensure successful completion of 12 future flight tests presently planned at Wake Island through 2024 (per MDA Integrated Master Test Plan). Building 1601 stands to be condemned within five years. Without a new facility to replace its capabilities, MDA will incur interoperability and test support space deficiencies. The new facility need date is based on the FTO-03 E2 test event scheduled for 4th QTR FY18.

ADDITIONAL INFORMATION: This project shall comply with UFC 1-200-01, "General Building Requirements", providing model building codes and government-unique criteria for typical design disciplines and building systems, as well as for accessibility, antiterrorism, security, sustainability, and safety. All required NEPA and/or EO 12114 analyses will be completed prior to the start of construction. The siting master plan has been coordinated with the host installation and MDA will receive site approval prior to construction.

This project has been evaluated for compliance with Executive Order 11988 Flood Plain Management. Wake Island is subject to tsunamis and rogue waves which occasionally affect the island. The project has been sited to manage the risk of flood loss and minimize the impact of floods on human safety, health and welfare. Design will incorporate mitigation measures where feasible, and in accordance with current Air Force policy on island.

#### 12. SUPPLEMENTAL DATA:

A. Estimated Design Date

(a) Date Design Started

11	. ~ .
/	1 (tatile •
(1)	) Status:

	(d)	Percent Complete As Of Jan 2016	5%
	(C)	Date 35% Design Complete	May 2016
	(d)	Date Design Complete	Oct 2016
	(e)	Parametric Cost Estimating Used To Develop Cost	No
	(f)	Type of Design Contract	Design-Bid-Build
(2)	Basis	:	
	(a)	Standard or Repetitive Design	No
	(b)	Where Design Was Most Recently Used	N/A
(3)	Total	Cost (c) = $(a) + (b)$ or $(d) + (e)$	(\$000)
	(a)	Production of Plans and Specifications	588
	(b)	All Other Design Costs	392
	(C)	Total Design Costs	980
	(d)	Contract	800
	(e)	In-House	180

Oct 2015

#### 1. COMPONENT 2. DATE **FY 2017 MILITARY CONSTRUCTION PROJECT DATA** Feb 2016 MDA

#### 3. INSTALLATION AND LOCATION

Wake Island

4. PROJECT TITLE **5. PROJECT NUMBER** MDA 662 Test Support Facility

#### 12. SUPPLEMENTAL DATA (CONTINUED):

(4) Contract Award

Apr 2017 Jul 2017

(5) Construction Start

(6) Construction Completion

Mar 2018

B. Equipment associated with this project which will be provided from other appropriations:

		FY	
Equipment Nomenclature	Procuring Appropriation	Appropriated or Requested	Cost \$(000)
Furniture, Fixtures & Equipment	RDT&E	FY17	500
		Total:	500

### 1. COMPONENT 2. DATE **FY 2017 MILITARY CONSTRUCTION PROJECT DATA** Feb 2016 MDA 3. INSTALLATION AND LOCATION 4. PROJECT TITLE Various Worldwide Locations Unspecified Minor Construction 5. PROGRAM ELEMENT 6. CATEGORY CODE 7. PROJECT NUMBER 8. PROJECT COST (\$000) N/A N/A N/A 2,414 9. COST ESTIMATES U/M QUANTITY **UNIT COST** ITEM COST (\$000) Unspecified Minor Construction LS 2,414 2,414 SUBTOTAL CONTINGENCY PERCENT (0.0%) TOTAL CONTRACT COST 2,414

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

TOTAL REQUEST (ROUNDED)

TOTAL REQUEST

SUPERVISION, INSPECTION & OVERHEAD (0.0%)

INSTALLED EQPT-OTHER APPROPRIATIONS

<u>REQUIREMENT</u>: These funds provide MDA the capability to react in FY 2017 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 NEPA and/or EO 12114 analyses will be completed prior to the start of construction for each unspecified construction project.

2,414

2,414

(0)

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Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

Appropriation / Budget Activity / Budget Sub Activity:

ıh Δctivity:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

Equipment, Missile Defense Agency

ID Code (A=Service Ready, B=Not Service Ready): B

MD07 / THAAD

P-1 Line Item Number / Title:

Program Elements for Code B Items: 0603884C, 0603881C

Other Related Program Elements: 0603884C, 0603881C

Line Item MDAP/MAIS Code: 362 | Item MDAP/MAIS Code(s): N/A

Line item WDAF/WAIS Code: 502	Item MD	AF/IVIAIS COU	C(3). 14/A									
Resource Summary	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Procurement Quantity (Units in Each)	155	38	34	24	-	24	35	32	30	28	77	453
Gross/Weapon System Cost (\$ in Millions)	2,700.662	449.478	447.971	369.608	-	369.608	451.592	440.883	405.015	420.829	1,427.710	7,113.748
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,700.662	449.478	447.971	369.608	-	369.608	451.592	440.883	405.015	420.829	1,427.710	7,113.748
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2,700.662	449.478	447.971	369.608	-	369.608	451.592	440.883	405.015	420.829	1,427.710	7,113.748
(The following	Resource Sumi	mary rows are fo	r informational p	urposes only. Th	ne corresponding	g budget request	s are documente	d elsewhere.)				
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	11.378	10.100	10.100	11.765	-	11.765	11.765	12.031	12.031	13.713	17.037	14.337
Gross/Weapon System Unit Cost (\$ in Millions)	17.424	11.828	13.176	15.400	-	15.400	12.903	13.778	13.501	15.030	18.542	15.704

#### **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 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.

LI MD07 - THAAD Missile Defense Agency **UNCLASSIFIED** 

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

Appropriation / Budget Activity / Budget Sub Activity:

Sub Activity:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

Equipment, Missile Defense Agency

MD07 / THAAD

P-1 Line Item Number / Title:

ID Code (A=Service Ready, B=Not Service Ready): B

Program Elements for Code B Items: 0603884C, 0603881C

Other Related Program Elements: 0603884C, 0603881C

Line Item MDAP/MAIS Code: 362

Item MDAP/MAIS Code(s): N/A

	Exhibits Schedule			Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title*	Subexhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)					
P-5	THAAD	P-5a, P-21	В	155 / 2,700.662	38 / 449.478	34 / 447.971	24 / 369.608	- / -	24 / 369.608
P-40	Total Gross/Weapon System Cost			155 / 2,700.662	38 / 449.478	34 / 447.971	24 / 369.608	- 1 -	24 / 369.608
	Exhibits Schedule			FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)					
P-5	THAAD	P-5a, P-21	В	35 / 451.592	32 / 440.883	30 / 405.015	28 / 420.829	77 / 1,427.710	453 / 7,113.748
P-40	Total Gross/Weapon System Cost			35 / 451.592	32 / 440.883	30 / 405.015	28 / 420.829	77 / 1,427.710	453 / 7,113.748

<sup>\*</sup>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 2017 budget request decrease from FY 2016 is driven primarily by a decrease in THAAD interceptor procurement quantity from 30 to 24. The FY 2017 budget request funds 24 THAAD Interceptors, and includes the THAAD Stockpile Reliability Program, obsolescence mitigation efforts, battery modernization, Missile Round Pallet modifications, and training efforts such as one Radar Training Device (RTD), RTD spares, and non-recurring New Equipment Training (NET) for Battery 7 being delivered in FY 2017. Funding for the FY 2017 Battery 7 sustainment requirement is included as part of THAAD's 2017 Operations and Maintenance request.

The Radar Training Device provides THAAD soldiers with hands-on radar and fire control training that cannot be achieved through simulation. The procurement of an RTD is considerably more cost effective than the alternative of procuring a tactical AN/TPY-2 radar with which to train.

Beginning in FY 2015, the THAAD Project Office pursued a "synergy" lot buy approach to Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year, by utilizing this approach the THAAD Project Office 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.

Such a Lot 9 Interceptor procurement approach in FY2017 is planned as a synergy buy with the FY2018 Lot 10. However, potential future Foreign Military Sales of Interceptors may be combined with a Lot 9 and 10 synergy buy or with USG annual Lot procurements to further reduce the average unit price and enable the procurement of additional Interceptors.

The PB 2017 interceptor quantity procurement plan supports the Army's deployment plan for seven (7) THAAD batteries.

The first two (2) THAAD Batteries were RDT&E funded in 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".

LI MD07 - THAAD Missile Defense Agency UNCLASSIFIED
Page 2 of 12

P-1 Line #23

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

Item Number / Title [DODIC]:

0300D / 01 / 17 MD07 / THAAD - / THAAD

ID Code (A=Service Ready, B=Not Service Ready)	: B					MDAP/MAI	S Code:					
	Prior			FY 2017	FY 2017	FY 2017					То	
Resource Summary	Years	FY 2015	FY 2016	Base	oco	Total	FY 2018	FY 2019	FY 2020	FY 2021	Complete	Total
Procurement Quantity (Units in Each)	155	38	34	24	-	24	35	32	30	28	77	453
Gross/Weapon System Cost (\$ in Millions)	2,700.662	449.478	447.971	369.608	-	369.608	451.592	440.883	405.015	420.829	1,427.710	7,113.748
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,700.662	449.478	447.971	369.608	-	369.608	451.592	440.883	405.015	420.829	1,427.710	7,113.748
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2,700.662	449.478	447.971	369.608	-	369.608	451.592	440.883	405.015	420.829	1,427.710	7,113.748
(The following	Resource Sumi	mary rows are fo	r informational p	ourposes only. Th	e corresponding	budget requests	are documente	d elsewhere.)				
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	17.424	11.828	13.176	15.400	-	15.400	12.903	13.778	13.501	15.030	18.542	15.704

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

	P	rior Years	3		FY 2015			FY 2016		FY	′ 2017 Bas	se	F۱	/ 2017 OC	0	FY	2017 Tot	al
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Hardware Cost										·		,						
Recurring Cost																		
Interceptor <sup>(†)</sup>	11.378	155	1,763.634	10.100	38	383.800	10.100	34	343.400	11.765	24	282.353	-	-	-	11.765	24	282.353
Launcher <sup>(†)</sup>	8.110	36	291.977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Equipment	27.266	5	136.328	13.658	1	13.658	-	-	-	-	-	-	-	-	-	-	-	-
TFCC Tactical Station Group <sup>(†)</sup>	10.522	8	84.179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	2,276.118	-	-	397.458	-	-	343.400	-	-	282.353	-	-	-	-	-	282.353
Subtotal: Hardware Cost	-	-	2,276.118	-	-	397.458	-	-	343.400	-	-	282.353	-	-	-	-	-	282.353
Support Cost																		
Obsolescence and Modifications	20.964	2	41.927	30.884	1	30.884	52.268	1	52.268	30.936	1	30.936	-	-	-	30.936	1	30.936
Production Support & Testing	107.392	3	322.177	9.617	1	9.617	17.690	1	17.690	13.190	1	13.190	-	-	-	13.190	1	13.190
Training	20.147	3	60.440	11.519	1	11.519	34.613	1	34.613	43.129	1	43.129	-	-	-	43.129	1	43.129
Subtotal: Support Cost	-	-	424.544	-	-	52.020	-	-	104.571	-	-	87.255	-	-	-	-	-	87.255
Gross/Weapon System Cost	17.424	155	2,700.662	11.828	38	449.478	13.176	34	447.971	15.400	24	369.608	-	-	-	15.400	24	369.608

LI MD07 - THAAD Missile Defense Agency UNCLASSIFIED
Page 3 of 12

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / THAAD

ID Code (A=Service Read	dy, B=Not Servi	ce Ready):	3						М	DAP/MAIS	Code:							
		FY 2018			FY 2019			FY 2020	'		FY 2021		To	o Complet	e	•	Total Cost	,
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Interceptor <sup>(†)</sup>	11.765	35	411.765	12.031	32	384.996	12.031	30	360.933	13.713	28	383.969	14.984	77	1,153.801	12.072	453	5,468.651
Launcher <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.110	36	291.977
Support Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.998	6	149.986
TFCC Tactical Station Group <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.522	8	84.179
Subtotal: Recurring Cost	-	-	411.765	-	-	384.996	-	-	360.933	-	-	383.969	-	-	1,153.801	-	-	5,994.793
Subtotal: Hardware Cost	-	-	411.765	-	-	384.996	-	-	360.933	-	-	383.969	-	-	1,153.801	-	-	5,994.793
Support Cost																		
Obsolescence and Modifications	23.515	1	23.515	37.405	1	37.405	26.088	1	26.088	17.657	1	17.657	176.901	1	176.901	43.758	10	437.581
Production Support & Testing	16.312	1	16.312	18.482	1	18.482	17.994	1	17.994	19.203	1	19.203	97.008	1	97.008	48.334	11	531.673
Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.950	6	149.701
Subtotal: Support Cost	-	-	39.827	-	-	55.887	-	-	44.082	-	-	36.860	-	-	273.909	-	-	1,118.955
Gross/Weapon System Cost	12.903	35	451.592	13.778	32	440.883	13.501	30	405.015	15.030	28	420.829	18.542	77	1,427.710	15.704	453	7,113.748

#### Remarks:

"Procurement Quantity" above represents interceptors only, but the "Net Procurement" cost above includes the costs of all hardware. Prior FYs and FY 2015 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.

The increase in the Interceptor Unit Cost above from FY 2016 to FY 2017 is primarily driven by the lower quantity of interceptors purchased in FY 2017. Additional requirements to increase overall product quality and avoid counterfeit parts in the prime contractor and supply chain to improve reliability of the THAAD Interceptors also contribute to the increase in Unit Cost.

The increase in the Training line above from FY 2016 to FY 2017 is due to the procurement of Radar Training Device (RTD) spares to support the Institutional Training Base (ITB) used to train THAAD soldiers and AN/TPY-2 Forward Based Mode soldiers. The RTDs at the ITB are essential to radar crewmember training, as they avert the need to pull tactical AN/TPY-2 Radars from fielded THAAD Batteries and thus eliminate degradation of the Army's THAAD deployment plans. Without the RTD sufficient replacement soldiers cannot be trained to operate and maintain the AN/TPY-2 Radar for the fielded THAAD Batteries or fielded in Forward Based Mode.

Obsolescence above 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.

(†) indicates the presence of a P-5a

LI MD07 - THAAD Missile Defense Agency UNCLASSIFIED
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P-1 Line #23

Exhibit P-5a, Procurement History and Planning: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / THAAD

00000701711			''	1100171117010				' ' ' '	, , , , ,			
Cost Elements	0 0	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost	Specs Avail Now?	Date Revision Available	RFP Issu Date
Interceptor - Lot 1 <sup>(†)</sup>		2010	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2011	Jul 2012	26	14.480	Y		Oct 2009
Interceptor - Lot 2 <sup>(†)</sup>		2011	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2011	Jul 2013	22	12.100	Y		Oct 2009
Interceptor - Lot 4 <sup>(†)</sup>		2012	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Aug 2012	Jun 2015	46	11.022	Y		Aug 2011
Interceptor - Lot 5 <sup>(†)</sup>		2013	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Sep 2013	Oct 2016	34	11.022	Y		Aug 2011
Interceptor - Lot 6 <sup>(†)</sup>		2014	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2013	Jul 2017	27	11.022	Y		Jun 2013
Interceptor - Lot 7 <sup>(†)</sup>		2015	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2015	Apr 2018	38	10.100	Y		Mar 2014
Interceptor - Lot 8 <sup>(†)</sup>		2016	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2015	Jan 2019	34	10.100	Y		Apr 2015
Interceptor - Lot 9 <sup>(†)</sup>		2017	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Sep 2017	Apr 2020	24	11.765	N		Mar 2016
Launcher - Lot 1 <sup>(†)</sup>		2010	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	May 2011	Apr 2013	6	9.170	Y		Oct 2009
Launcher - Lot 3 <sup>(†)</sup>		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	May 2014	6	9.130	Y		Aug 2011
Launcher - Lot 2 <sup>(†)</sup>		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	May 2011	Oct 2013	6	9.130	Υ		Oct 2009
Launcher - Lot 4 <sup>(†)</sup>		2012	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Nov 2014	6	7.490	Y		Aug 2011
Launcher - Lot 6 <sup>(†)</sup>		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 $2^{(\dagger)}$		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 $3^{(\dagger)}$		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 $4^{(\dagger)}$		2012	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Oct 2014	2	9.260	Y		Aug 2011

<sup>(†)</sup> indicates the presence of a P-21

#### Romarks:

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<sup>-</sup> 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 5 completes in FY 2015; - Delivery of Battery 5 completes in FY 2016; - Delivery of Battery 7 completes in FY 2017; - Concurrent with the 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.

Exhibit F	P-21, Pr	oducti	on Sc	hedul	e: PE	3 201	7 Mis	sile D	efens	e Age	ency											Date	: Fel	oruary	/ 2016	3			
<b>Appropr</b> 0300D /		Budge	t Acti	vity /	Budç	get Su	ub Ad	ctivity	:		<b>Line</b> 07 / T			ber /	Title:								Nun HAA[		Title	[DOE	DIC]:		
		lements								=:												=:							В
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)	SERVICE	PROC QTY	TO 1 OCT 2010	DUE AS OF 1 OCT	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	N N	J U	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	N C E
nterceptor - L	ot 1																												
1 2010	MDA	26	-	26						Α -	-	-	-	-	-	-	-	- 1	-	-	-	-	-	-	-	1	-	-	
nterceptor - L	ot 2																	,		· · · · · ·								,	
2 2011	MDA	22	-	22						Α -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
nterceptor - L	ot 4																												
3 2012	MDA	46	-	46																							Α -	-	
nterceptor - L	ot 5																												
4 2013	MDA	34	-	34																									
nterceptor - L																													
5 2014	MDA	27	-	27																									
nterceptor - L	ot 7																												
6 2015	MDA	38	-	38																									
nterceptor - L	_ot 8																												
7 2016	MDA	34	-	34																									
nterceptor - L	_ot 9																												
8 2017	MDA	24	-	24																									
auncher - Lo	ot 1																												
9 2010		6	-	6								Α -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
auncher - Lo																													
10 2011	MDA	6	-	6																						A -	-	-	
auncher - Lo		,											,										,	,					
11 2011	MDA	6	-	6								Α -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
auncher - Lo		,																										, ,	_
12 2012		6	-	6																						Α -	-	-	
auncher - Lo		,																											
13 2014		12	-	12																									
	Station Grou	<del>.</del>										-										-						r	
14 2011		4	-	4						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Station Grou	<del>:</del>																											
15 2011		2	-	2																						Α -	-	-	
	Station Grou	<del>:</del>																											
16 2012	MDA	2	-	2					1	1	1	1	1			,	-	ı		-		1	1		1	Α -	-	-	<u> </u>
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P-1 Line #23

Exhibit F	P-21, Pro	oducti	on Sc	hedul	e: PE	3 201	7 Mis	sile D	efens	e Age	ency											Date	: Fel	oruary	2016	3			
<b>Appropr</b> 0300D / 0		Budge	t Acti	vity /	Budg	jet Sı	ıb Ac	tivity	:		<b>Line</b> 07 / T			ber /	Title:								Nun HAA[		Title	[DOI	DIC]:		
		lements								=:																			В
	(Units i	in Each)								Fiscal Ye	ear 2013			· • • • • • • • • • • • • • • • • • • •					1			Fiscal Ye			2011				A
м			ACCEPT PRIOR	BAL			1						aiendar	Year 201	3					Г			Calei	ndar Yea	r 2014				Ā
D F   C R   FY	SERVICE	PROC QTY	TO 1 OCT 2012	DUE AS OF 1 OCT	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	N U	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	U L	A U G	S E P	N C E
Interceptor - L	ot 1																												
1 2010	MDA	26	1	25	-	-	-	-	-	3	6	6	7	3															
nterceptor - L	ot 2																										,		
2 2011	MDA	22	-	22	-	-	-	-	-	-	-	-	-	4	4	4	3	3	3	-	-	-	1						
nterceptor - L	ot 4					'	,				,									· ·									
3 2012	MDA	46	-	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
nterceptor - L	ot 5	•																											
4 2013	MDA	34	-	34												Α -	-	-	-	-	-	-	-	-	-	-	-	-	
nterceptor - L	ot 6																									<u>'</u>			
5 2014	MDA	27	-	27															A -	-	-	-	-	-	-	-	-	-	
nterceptor - L	ot 7																			·				<u>'</u>		<u>'</u>			
6 2015	MDA	38	-	38																									
nterceptor - L	ot 8																												
7 2016	MDA	34	-	34																									
nterceptor - L	ot 9	· '																											
8 2017	MDA	24	-	24																									
auncher - Lo	t 1	·																											
9 2010	MDA	6	-	6	-	-	-	-	-	-	1	2	-	-	3														
auncher - Lo	t 3																												
10 2011	MDA	6	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	
auncher - Lo	t 2																												
11 2011	MDA	6	-	6	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1							
auncher - Lo	t 4																<u> </u>												
12 2012	MDA	6	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- [	-	-	-	-	-	-	-	-	-	
auncher - Lo	t 6													· · · · · ·			<u> </u>												
13 2014	MDA	12	-	12																							Α -	-	
FCC Tactica	I Station Grou	ıp - Lot 2																											
14 2011	MDA	4	-	4	-	-	-	-	-	-	-	1	1	-	-	-	-	-	2										
FCC Tactica	I Station Grou	ıp - Lot 3																											
15 2011	MDA	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-	-	-	-	-	_	1	1	
	l Station Groυ																												
16 2012		2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_	-	-	-	-	
	1				0	N	D	J	F	М	Α	М	J	J	Α	s	0	N	D	J	F	М	Α	М	J	J	Α	s	
					С	0	E	Α	E	A	P	Α	U	U	U	S E	С	0	E	Α	E	Α	P	Α	U	U	U	E	1
					Т	V	С	N	В	R	R	Υ	N	L	G	P	T	V	С	N	В	R	R	Y	N	L	G	P	1

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Exhibit F	P-21, Pro	oducti	on Sc	hedul	e: PB	201	7 Mis	sile D	efens	e Age	ency											Date	: Fel	oruary	/ 2016	3			
<b>Appropr</b> 0300D / 0		Budge	t Acti	vity /	Budg	et Sı	ıb Ac	tivity	:	- 1	<b>Line</b> 07 / T			ber /	Title:								Nun HAA[		Title	[DOI	DIC]:		
		lements in Each)								Fiscal Y	ear 2015											Fiscal Ye	ear 2016						В
	(00		ACCEPT										alendar	Year 201	5									ndar Yea	r 2016				. A
M			PRIOR	BAL	_		_			T										. Г	_			1					A
)	SERVICE	PROC QTY	TO 1 OCT 2014	DUE AS OF 1 OCT	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	N N J	U L	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	U L	U G	S E P	C
nterceptor - L	ot 1														l														
1 2010	MDA	26	26	-	_																								
nterceptor - L	ot 2																												
2 2011		22	22	-																									
nterceptor - L	ot 4				<del></del>																								
3 2012	MDA	46	-	46	-	-	-	-	-	-	-	-	3	-	-	- 1	3	3	3	4	4	4	4	4	4	3	3	4	
nterceptor - L	ot 5													l															
4 2013	MDA	34	-	34	-	-	-	-	-	-	-	-	-	-	-	- 1	-	-	-	-	-	-	-	-	-	-	-	-	
nterceptor - L	ot 6																												
5 2014	MDA	27	-	27	-	-	-	-	-	-	-	-	-	-	-	- 1	-	-	- 1	-	-	-	-	-	-	-	-	-	
nterceptor - L																													
6 2015	MDA	38	-	38															Α -	-	-	-	-	-	-	-	-	-	
nterceptor - L	ot 8				_																				_				
7 2016	MDA	34	-	34															Α -	-	-	-	-	-	-	-	-	-	
nterceptor - L	ot 9																												
8 2017	MDA	24	-	24																									
auncher - Lo	t 1																												
9 2010	MDA	6	6	-																									
auncher - Lo	t 3																												
10 2011	MDA	6	5	1	1																								
auncher - Lo	t 2																												
11 2011	MDA	6	6	-																									
Launcher - Lo	t 4																												
12 2012	MDA	6	-	6	-	1	1	1	1	1	1																		
_auncher - Lo	t 6																												
13 2014	MDA	12	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	1	2	1	
TFCC Tactica	Station Grou	ıp - Lot 2																											
14 2011	MDA	4	4	-																									
TFCC Tactica	Station Grou	ıp - Lot 3																											
15 2011	MDA	2	2	-	_																								
	I Station Groυ	ıp - Lot 4																											
16 2012		2	-	2	1	1																							
	l.				0	N	D	J	F	М	Α	М	J	J	Α	S	0	N	D	J	F	М	Α	М	J	J	Α	s	
					С	0	E	A	E	Α	A P	Α	U	U	U	S E	O C	0	E	A	E	Α	Р	Α	U	Ü	U	E	
					T	V	С	N	В	R	R	Υ	N	L	G	P	T	V	C	N	В	R	R	Y	N	L	G	P	1

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Interriphor   Lot   S	Exhibit P	P-21, Pro	oducti	on Sc	hedu	le: PB	201	7 Mis	sile D	efens	e Age	ency											Date	e: Fel	oruary	/ 2016	3			
The content of the			Budge	et Acti	vity /	Budg	et Sı	ub A	ctivity	:					nber /	Title										/ Title	[DOI	DIC]:		
A C C C P											Finant V	/a.a.r 204	•								,		Figure 1	/a.a.r. 2046						В
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1 200   MAA	C R	SERVICE		ОСТ	AS OF	C	0	E	A	E	Α	P	Α	U	U	U	S E P	С	0	E	A	E	Α	P	Α	U	U	U	E	N C
	Interceptor - Lo	ot 1																												
2   2011   MOA   22   22   2   1   1   1   1   1   1			26	26	-																									
Interruption   Lot	nterceptor - Lo	ot 2																												
3   2012   MOA	2 2011	MDA	22	22	-																									П
A	nterceptor - Lo	ot 4																												
4   2013   MDA	3 2012	MDA	46	46	-																									
Test Ceptor - Lot 6    S   2014   MDA	nterceptor - Lo	ot 5																												
S   2014   MDA	4 2013	MDA	34	-	34	4	4	. 4	4 4	4	4	4	3	3	3															
Second   S	nterceptor - Lo	ot 6	,	'																										
6   2015   MDA   38   38   38   38   30   30   30   30	5 2014	MDA	27	-	27	-	-	-	-	-	-	-	-	-	12	15														
Terceptor - Lot 8    7	terceptor - Lo	ot 7	,												•															
7   2016   MDA	6 2015	MDA	38	-	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	
Terresptor - Lot 9    8   2017   MDA	nterceptor - Lo	ot 8	<u> </u>												•															
R   2017   MDA	7 2016	MDA	34	-	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
auncher - Lot 1    9	nterceptor - Lo	ot 9			•																				•					
9 2010 MDA 6 6 6 -  auncher - Lot 3  10 2011 MDA 6 6 6 -  auncher - Lot 2  11 2011 MDA 6 6 6 -  11 2011 MDA 6 6 6 -  12 2012 MDA 6 6 6 -  13 2014 MDA 12 10 2 1 1  15 2014 MDA 12 10 2 1 1  16 2018 MDA 4 4 -  FCC Tactical Station Group - Lot 3  16 2011 MDA 2 2 2 -  FCC Tactical Station Group - Lot 4  16 2012 MDA 2 2 2 -	8 2017	MDA	24	-	24												Α -	-	-	-	-	-	-	-	-	-	-	-	-	
10   2011   MDA	auncher - Lot	1			•																									
10   2011   MDA	9 2010	MDA	6	6	-																									
auncher - Lot 2    11   2011   MDA	auncher - Lot	3		,																										
11   2011   MDA	10 2011	MDA	6	6	-																									
12   2012   MDA	auncher - Lot	2		•																										
12   2012   MDA	11 2011	MDA	6	6	-																									
13   2014   MDA   12   10   2   1   1   1   1   1   1   1   1   1	auncher - Lot	t 4																												
13   2014   MDA   12   10   2   1   1     FCC Tactical Station Group - Lot 2   14   2011   MDA   4   4   -     FCC Tactical Station Group - Lot 3   15   2011   MDA   2   2   -     FCC Tactical Station Group - Lot 4   16   2012   MDA   2   2   -	12 2012	MDA	6	6	-																									
TFCC Tactical Station Group - Lot 2	auncher - Lot	16																												
14     2011     MDA     4     4     -       FFCC Tactical Station Group - Lot 3       15     2011     MDA     2     2     -       FFCC Tactical Station Group - Lot 4       16     2012     MDA     2     2     -	13 2014	MDA	12	10	2	1	1																							
TFCC Tactical Station Group - Lot 3	FCC Tactical	Station Grou	up - Lot 2																											
15         2011         MDA         2         2         -           FCC Tactical Station Group - Lot 4           16         2012         MDA         2         2         -	14 2011	MDA	4	4	-																									
FCC Tactical Station Group - Lot 4  16   2012   MDA	FCC Tactical	Station Grou	up - Lot 3																											
16   2012   MDA   2   2   -	15 2011	MDA	2	2	-																									
	FCC Tactical	Station Grou	up - Lot 4																											
O N D J F M A M J J A S O N D J F M A M J J A S	16 2012	MDA	2	2	-																									
C O E A E A P A U U U E C O E A E A P A U U U E C O E A F A P A U U U E C O E A E A P A U U U E C O D E A E A P A D U U U E C O D E A E A P A D U U U E C O D E A E A P A D U U U E C O D E A E A P A D U U U D E C O D E A E A P A D U U U D E C O D E A E A P A D U U U D E C O D E A E A P A D U U U D E C O D E A E A P A D U U U D E C O D E A E A P A D U U D U D E C O D E A E A P A D U U D U D E C O D E A E A P A D U U D U D E C O D E A E A P A D U D U D E C O D E A E A P A D U D U D U D E C O D E A E A P A D U D U D E C O D E A E A P A D U D U D U D E C O D E A E A P A D U D U D U D E C O D E A E A P A D U D U D U D E C O D E A E A P A D U D U D U D E C O D E A E A P A D U D U D U D E C O D E A E A P A D U D U D U D E C O D E A E A P A D U D U D U D E C O D E C O D E A E A P A D U D U D U D E C O D						C	0	E	J A N	E	Α	P	M A Y	U	U	U	E	O C T	0	E	J A N	E	Α	P	M A Y	U	U	U	E	

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EXIIIDIL F	P-21, Pro	oducti	on Sc	hedu	le: PE	3 201	7 Mis	sile D	efens	e Age	ency											Date	e: Fe	bruary	/ 2016	3			
<b>Appropr</b> 0300D / 0		Budge	et Acti	vity /	Budg	et Su	ıb Ad	ctivity	:		<b>Line</b> 007 / 1		-	ber /	Title:								<b>Nur</b> HAAI	nber /	Title	[DOI	DIC]:		
		lements								Fi 1 N	/ · · 0040											Fi13	· 000						В
	(Units i	in Each)	ACCEPT		-		_	1	-	FISCAI Y	ear 2019		0-11	Year 20						1		Fiscal Y		ndar Yea	- 0000				_ Α
м			PRIOR	BAL						1	1	1	Calendar	Tear 20	19			1				1	Cale	nuar rea	7 2020				L
O F C R O # FY	SERVICE	PROC QTY	TO 1 OCT 2018	DUE AS OF 1 OCT	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	N U	J 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	N C
Interceptor - L	ot 1											<u> </u>				1													
1 2010		26	26	-																									T
nterceptor - L	ot 2																												
2 2011	MDA	22	22	-																									1
nterceptor - L	ot 4			•	•																								
3 2012	MDA	46	46	-																									1
nterceptor - L	ot 5																												
4 2013	MDA	34	34	-																									
nterceptor - L	ot 6				•																								
5 2014	MDA	27	27	-																									
nterceptor - L	ot 7																												
6 2015	MDA	38	24	14	4	4	4	2																					T
nterceptor - L	ot 8																												
7 2016	MDA	34	-	34	-	-	-	2	4	4	4	4	4	4	4	4													
nterceptor - L	ot 9																												
8 2017	MDA	24	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2
auncher - Lo	t 1																												
9 2010	MDA	6	6	-																									
auncher - Lo	t 3																												
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Appropriation / Budget Activity / Budget Sub Activity:	Exhibit P	P-21, Pr	oducti	on Sc	hedul	le: PB	201	7 Mis	sile D	efens	e Age	ency											Date	e: Fel	bruary	2016	3			
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Exhibit P-21, Production Schedule: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / THAAD

<b>—</b>					_							
		Produc	tion Rates (Each	Month)				Procurement Le	adtime (Months)			
MFR						lni	tial			Red	rder	
Ref #	Manufacturer Name - Location	MSR For 2017	1-8-5 For 2017	MAX For 2017	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	7	6	6	16	22	6	4	27	31
2	Lockheed Martin - Troy, AL	1	4	5	6	6	28	34	6	4	27	31
3	Lockheed Martin - Troy, AL	1	4	5	6	11	36	47	6	11	36	47
4	Lockheed Martin - Troy, AL	1	4	5	6	12	37	49	6	12	37	49
5	Lockheed Martin - Troy, AL	1	4	5	6	3	43	46	6	3	43	46
6	Lockheed Martin - Troy, AL	1	4	5	6	12	31	43	6	12	31	43
7	Lockheed Martin - Troy, AL	1	4	4	6	4	39	43	6	4	39	43
8	Lockheed Martin - Troy, AL	1	4	5	6	12	31	43	6	12	31	43
	Lockheed Martin - Camden, AR	1	1	3	6	8	23	31	6	4	21	25
	Lockheed Martin - Camden, AR	1	1	2	6	10	22	32	6	4	21	25
	Lockheed Martin - Camden, AR	1	1	2	6	8	29	37	6	4	21	25
	Lockheed Martin - Camden, AR	1	1	2	6	10	28	38	6	3	21	24
	Lockheed Martin - Camden, AR	1	1	2	6	6	22	28	6	4	21	25
	Lockheed Martin - Camden, AR	1	2	2	6	6	26	32	6	4	24	28
	Lockheed Martin - Camden, AR	1	1	1	6	10	25	35	6	4	24	28
	Lockheed Martin - Camden, AR	1	1	1	6	10	27	37	6	3	24	27

#### Remarks:

- 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. Interceptor Lots 5 and 6 are being delivered on an accelerated schedule to mitigate prior delays in interceptor deliveries and recover to the original Lot 6 baseline end date.
- Any gaps in deliveries between U.S. Interceptor Lots are mitigated by FMS Interceptor production.
- "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 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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P-1 Line #23

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

MD09 / AEGIS BMD

Equipment, Missile Defense Agency

ID Code (A=Service Ready, B=Not Service Ready); B

Program Elements for Code B Items: 0604881C, 0603892C

Other Related Program Elements: 0603892C, 0604881C

Line Item MDAP/MAIS Code: 362 Item MDAP/MAIS Code(s): N/A

Line Item MDAP/MAIS Code: 362	Item MD	AP/MAIS Cod	e(s): N/A									
Resource Summary	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Procurement Quantity (Units in Each)	172	67	49	35	-	35	46	51	58	75	Continuing	Continuing
Gross/Weapon System Cost (\$ in Millions)	2,033.418	663.316	566.711	463.801	-	463.801	727.291	962.410	1,079.913	1,221.081	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	=	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,033.418	663.316	566.711	463.801	-	463.801	727.291	962.410	1,079.913	1,221.081	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2,033.418	663.316	566.711	463.801	-	463.801	727.291	962.410	1,079.913	1,221.081	Continuing	Continuing
(The following	Resource Sumi	mary rows are fo	r informational p	urposes only. Th	e corresponding	g budget request	s are documente	d elsewhere.)	•			
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	11.315	11.639	10.439	10.896	-	10.896	11.003	11.181	11.040	10.360	Continuing	Continuing
Gross/Weapon System Unit Cost (\$ in Millions)	11.822	9.900	11.566	13.251	-	13.251	15.811	18.871	18.619	16.281	Continuing	Continuing

#### **Description:**

Noto:

Beginning in FY 2016, funds transferred from MD09 "Aegis BMD" to the newly created MD90 "Aegis BMD Hardware and Software" line item in accordance with the FY 2016 Omnibus.

Flyaway costs reflect the SM-3 Block IB only. Net Procurement and Gross Weapon System costs include all hardware and support costs but are detailed in separate P5s. Prior Year procurement quantity of 170 includes 71 Standard Missile 3 (SM-3) Block IAs and 99 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). Initial production of the SM-3 Block IB began in FY 2012 (quantity of 14), with a larger rate production procured in FY 2013 (quantity of 33), and an increased production quantity in FY 2014 (quantity of 52).

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 ABMD and increase the probability of kill against a larger threat set. Initial production decision anticipated 4Q FY 2017 with an initial procurement contract starting in FY 2018 for a planned quantity of 7.

For FY 2017

Missiles:

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.

MDA's P40 is correct for dollars and quantities and PRCP is correct for dollar values. However due to an oversight there were some quantities for Shipsets (Qty 15 in FY15) and SM3 IIA interceptors (Qty 71 FY18 and out) that were inadvertently left off in PRCP. MDA will adjust PRCP to include SM3 IIA and Shipsets at the next opportunity

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P-1 Line #24

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

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

ID Code (A=Service Ready, B=Not Service Ready): B

Program Elements for Code B Items: 0604881C, 0603892C

Other Related Program Elements: 0603892C, 0604881C

Line Item MDAP/MAIS Code: 362

Item MDAP/MAIS Code(s): N/A

	Exhibits Schedule			Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title*	Subexhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)         Quantity / Total Cost (Each) I (\$ M)         Quantity / Total Cost (Each) I (\$ M)           52 / 626.202         49 / 566.711         35 / 463.801           15 / 37.114         - / -         - / -           - / -         - / -         - / -           67 / 663.316         49 / 566.711         35 / 463.801           FY 2019         FY 2020         FY 2021	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	В	Quantity / Total Cost (Each) / (\$ M)         Quantity / Total Cost (Ea	- / -	35 / 463.801			
P-5	Aegis BMD Shipsets		В	2 / 22.500	15 / 37.114	- / -	- / -	- / -	- / -
P-5	Aegis BMD SM-3 Block IIA		В	- / -	- / -	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost			172 / 2,033.418	Ost (Each) I (\$ M)         Quantity / Total Cost (Each) I (\$ M)	- 1 -	35 / 463.801		
	Exhibits Schedule		Day   Company   Company	To Complete	Total				
Exhibit Type	Title*	Subexhibits				Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)		
P-5	Aegis BMD SM-3 Block IB	Subexhibits   D   Quantity / Total Cost	Continuing	Continuing					
P-5	Aegis BMD Shipsets		D	- / -	17 / 59.614				
P-5	Aegis BMD SM-3 Block IIA		В	7 / 213.113	18 / 514.622	Quantity / Total Cost (Each) / (\$ M)         Quantity / Total Cost (Each) / (\$ M)           52 / 626.202         49 / 566.711           15 / 37.114         - / -           - / -         - / -           67 / 663.316         49 / 566.711           FY 2019         FY 2020           Quantity / Total Cost (Each) / (\$ M)         Quantity / Total Cost (Each) / (\$ M)           33 / 447.788         35 / 452.847           - / -         - / -           18 / 514.622         23 / 627.066	23 / 610.051	- / -	71 / 1,964.852
P-40	Total Gross/Weapon System Cost			Quantity / Total Cost (Each) / (\$ M)         Quantity / Total Cost (Ea	Continuing	Continuing			

<sup>\*</sup>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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P-1 Line #24

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency Date: February 2016 Appropriation / Budget Activity / Budget Sub Activity: Item Number / Title [DODIC]: P-1 Line Item Number / Title: 0300D / 01 / 17 MD09 / AEGIS BMD - I Aegis BMD SM-3 Block IB ID Code (A=Service Ready, B=Not Service Ready): B MDAP/MAIS Code: FY 2017 FY 2017 FY 2017 Prior To **Resource Summary** Years FY 2015 **FY 2016** Base OCO **Total FY 2018 FY 2019 FY 2020** FY 2021 Complete Total 35 35 39 33 35 Procurement Quantity (Units in Each) 170 52 49 52 Continuina Continuina Gross/Weapon System Cost (\$ in Millions) 2,010.918 626.202 566.711 463.801 463.801 514.178 447.788 452.847 611.030 Continuing Continuing Less PY Advance Procurement (\$ in Millions) Net Procurement (P-1) (\$ in Millions) 2,010.918 626.202 463.801 463.801 514.178 447.788 452.847 611.030 566.711 Continuing Continuing Plus CY Advance Procurement (\$ in Millions) Total Obligation Authority (\$ in Millions) 2.010.918 626.202 566.711 463.801 463.801 514.178 447.788 452.847 611.030 Continuina Continuina (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) 11.829 12.938 Continuing Continuing 12.042 11.566 13.251 13.251 13.184 13.569 11.751 Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding. FY 2015 **FY 2016 FY 2017 Base FY 2017 OCO** FY 2017 Total **Prior Years** Total Total Total Total Total Total **Unit Cost** Qty Cost Cost Elements (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (Each) (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (\$ M) (\$ M) Flyaway Cost Recurring Cost SM-3 Block IA 10.800 71 766.765 Procurement(†) SM-3 Block IB 11.315 99 1.120.160 11.411 593.383 10.439 511.493 10.896 35 381.370 52 49 35 381.370 10 896 Procurement(†) Subtotal: Recurring Cost 1,886.925 593.383 511.493 381.370 381.370 Subtotal: Flyaway Cost 1.886.925 593.383 511.493 381.370 381.370 Hardware Cost Recurring Cost Ballistic Barriers for Transportation SM-3 0.259 16 4.146 0.590 12 7.075 0.590 12 7.075 Block IB Canisters Procurement SM-3 0.233 110 25.608 0.211 53 11.186 0.245 50 12.272 0.284 36 10.238 0.284 36 10.238 Block IA/IB SM-3 Block IB 9.440 9.440 9.440 9.440 Investment Spares Subtotal: Recurring Cost 25.608 11.186 16.418 26.753 \_ 26.753 Subtotal: Hardware Cost 25.608 11.186 16.418 26.753 26.753 Support Cost

LI MD09 - AEGIS BMD Missile Defense Agency UNCLASSIFIED Page 3 of 18

P-1 Line #24

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

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. FY 2015 FY 2016 **FY 2017 Base FY 2017 OCO** FY 2017 Total **Prior Years** Total Total Total Total Total Total **Unit Cost** Qtv Cost **Unit Cost** Qtv Cost **Unit Cost** Qtv Cost **Unit Cost** Qtv Cost Unit Cost Qtv Cost **Unit Cost** Qtv Cost **Cost Elements** (\$ M) (Each) (\$ M) Diminishing 3.829 Manufacturing Sources 5.300 5.300 3.829 3.829 3.829 Mitigation SM-3 Block IB Production 32.795 3 98.385 21.633 21.633 33.500 33.500 33.701 33.701 33.701 33.701 Engineering SM-3 Block IB Service 18.148 18.148 18.148 18.148 Life Evaluation Program Subtotal: Support Cost 98.385 21.633 38.800 55.678 Gross/Weapon System 11.829 170 2,010.918 12.042 52 626.202 11.566 49 566.711 13.251 35 463.801 13.251 35 463.801 Cost FY 2018 FY 2019 **FY 2020** FY 2021 **Total Cost** To Complete Total Total Total Total Total Total **Unit Cost** Qtv Cost **Cost Elements** (\$ M) (Each) (\$ M) Flyaway Cost Recurring Cost SM-3 Block IA 10.800 71 766.765 Procurement(†) SM-3 Block IB 11.003 39 429.134 11.181 33 368.986 11.040 35 386.383 10.360 52 538.727 Continuing Continuing Procurement(†) Subtotal: Recurring Cost 429.134 368.986 386.383 538.727 Continuing Continuing 386.383 Subtotal: Flyaway Cost 429.134 368.986 538.727 Continuing Continuing Hardware Cost Recurring Cost Ballistic Barriers for Transportation SM-3 0.401 28 11.221 Block IB Canisters Procurement SM-3 0.290 40 0.296 34 10.067 0.302 10.874 0.307 Continuing 11.613 36 53 16.276 Continuing Block IA/IB SM-3 Block IB 17.262 17.262 12.128 12.128 12.373 12.373 12.621 12.621 Continuing Continuing Investment Spares Subtotal: Recurring Cost 28.875 23.247 22.195 -28.897 Continuing Continuing 23.247 Subtotal: Hardware Cost 28.875 22.195 28.897 Continuing Continuing Support Cost Diminishing Manufacturing Sources 3.909 3.909 3.987 3.987 4.067 4.067 4.148 4.148 Continuing Continuing Mitigation

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Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:

- / Aegis BMD SM-3 Block IB

							_	_						- 5 -	_			
ID Code (A=Service Read	dy, B=Not Serv	ice Ready):	В						M	DAP/MAIS	Code:							
		FY 2018			FY 2019			FY 2020			FY 2021		T	o Complet	te		Total Cost	t
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
SM-3 Block IB Production Engineering	33.732	1	33.732	33.726	1	33.726	33.732	1	33.732	33.732	1	33.732		Continuing	,		Continuing	
SM-3 Block IB Service Life Evaluation Program	18.528	1	18.528	18.894	1	18.894	5.418	1	5.418	5.526	1	5.526	-	-	-	13.303	5	66.514
Subtotal: Support Cost	-	-	56.169	-	-	56.607	-	-	43.217	-	-	43.406		Continuing			Continuing	
Gross/Weapon System Cost	13.184	39	514.178	13.569	33	447.788	12.938	35	452.847	11.751	52	611.030		Continuing			Continuing	

#### Remarks:

SM-3 Block IB unit costs depend on number of units procured.

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.

SM-3 Block IB Investment Spares are procured to coincide with the delivery of the missile and are required to support All Up Rounds (AURs) during 4 year maintenance period.

Diminishing Manufacturing Sources Mitigation (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. This situation may cause shortages that endanger the life cycle support and capability of the weapon system or equipment. These issues often affect combat operations and safety.

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.

Production Engineering Support includes labor and material to support the production of SM-3 guided missiles. This includes obsolescence mitigation, ordinance assessment, new vendor qualification, configuration management, quality assurance, quality control, and test equipment maintenance. Production Engineering further covers applying design and analysis to produce a specified product as well as planning, specifying, and coordinating the application of required resources: analyzing producibility and production operations, processes, and systems.

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2017 Missile Defense AgencyDate: February 2016Appropriation / Budget Activity / Budget Sub Activity:P-1 Line Item Number / Title:<br/>MD09 / AEGIS BMDItem Number / Title [DODIC]:<br/>- / Aegis BMD SM-3 Block IB

	0			Method/Type or		Award	Date of First	Qty	Unit Cost	Specs Avail	Revision	RFP Issue
Cost Elements	0	FY	Contractor and Location	Funding Vehicle	Location of PCO	Date	Delivery	(Each)	(\$ M)	Now?	Available	Date
SM-3 Block IA Procurement <sup>(†)</sup>		2009	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Feb 2008	Mar 2010	11	8.405	Υ		Mar 2007
SM-3 Block IA Procurement <sup>(†)</sup>		2010	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Apr 2008	Aug 2010	24	8.119	Υ		Mar 2007
SM-3 Block IA Procurement <sup>(†)</sup>		2011	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Aug 2012	Sep 2013	22	9.525	Υ		Nov 2010
SM-3 Block IA Procurement <sup>(†)</sup>		2012	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Aug 2012	Jul 2014	14	9.867	Υ		Aug 2011
SM-3 Block IB Procurement <sup>(†)</sup>		2012	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	May 2012	Dec 2013	14	13.400	Υ		Aug 2011
SM-3 Block IB Procurement <sup>(†)</sup>		2013	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Jun 2013	Jun 2014	33	12.130	Υ		Aug 2012
SM-3 Block IB Procurement <sup>(†)</sup>		2014	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Apr 2014	Jan 2016	52	10.236	Υ		Aug 2013
SM-3 Block IB Procurement <sup>(†)</sup>		2015	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2015	Apr 2017	52	11.411	Υ		Aug 2014
SM-3 Block IB Procurement <sup>(†)</sup>		2016	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2016	Jul 2018	49	10.416	Υ		Aug 2015
SM-3 Block IB Procurement <sup>(†)</sup>		2017	Raytheon / Tucson, AZ	SS/FP	Dahlgren, VA	Mar 2017	Oct 2019	35	10.896	Υ		Aug 2016

<sup>(†)</sup> indicates the presence of a P-21

Exh	ibit F	P-21, Pro	oducti	on Sc	hedul	le: PE	3 201	7 Mis	sile D	efens	e Ag	ency											Date	: Feb	ruary	2016	6			
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P-1 Line #24

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Exhibit P-21, Production Schedule: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / Aegis BMD SM-3 Block IB

		Produc	tion Rates (Each /	Month)				Procurement Le	adtime (Months)			
MF	۹					Ini	tial			Red	rder	
Re					ALT	ALT	Manufacturing	Total	ALT	ALT	Manufacturing	Total
#	Name - Location	MSR For 2017	1-8-5 For 2017	MAX For 2017	Prior to Oct 1	After Oct 1	PLT	After Oct 1	Prior to Oct 1	After Oct 1	PLT	After Oct 1
	1 Raytheon - Tucson, AZ	1	4	8	4	-	30	30	4	-	30	30
	Raytheon - Tucson, AZ	1	4	8	-	-	-	-	-	-	-	-

<sup>&</sup>quot;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 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-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / Aegis BMD Shipsets

ID Code (A=Service Ready, B=Not Service Ready): B

MDAP/MAIS Code:

	Prior			FY 2017	FY 2017	FY 2017					То	
Resource Summary	Years	FY 2015	FY 2016	Base	oco	Total	FY 2018	FY 2019	FY 2020	FY 2021	Complete	Total
Procurement Quantity (Units in Each)	2	15	-	-	-	-	-	-	-	-	-	17
Gross/Weapon System Cost (\$ in Millions)	22.500	37.114	-	-	-	-	-	-	-	-	-	59.614
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	22.500	37.114	-	-	-	-	-	-	-	-	-	59.614
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	22.500	37.114	-	-	-	-	-	-	-	-	-	59.614
(The following	Resource Sumi	mary rows are fo	r informational p	ourposes only. Ti	ne corresponding	budget request	s are documente	ed elsewhere.)		:		
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	11.250	2.474	-	-	-	-	-	-	-	-	-	3.507

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

	F	Prior Years	5		FY 2015			FY 2016		FY	/ 2017 Ba	se	FY	/ 2017 OC	0	F۱	2017 Tot	tal
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)									
Hardware Cost				,														
Recurring Cost																		
Aegis BMD 3.6 to 4.x Hardware Procurements	-	-	-	18.955	1	18.955	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BMD 9.C1 (5.0CU) Hardware Procurements	-	-	-	4.721	1	4.721	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BMD 9.C1 (5.0CU) Installs	-	-	-	1.400	3	4.200	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BMD 9C.2 (5.x) Inline Procurements	-	-	-	4.502	1	4.502	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	-	-	-	32.378	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	-	-	-	32.378	-	-	-	-	-	-	-		-	-	-	-
Software Cost																		
Recurring Cost																		
Aegis BMD 3.6.1 Software and Installs	11.250	2	22.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BMD 4.0 to 4.x Software Installs	-	-	-	0.526	9	4.736	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	22.500	-	-	4.736	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Software Cost	-	-	22.500	-	-	4.736	-	-	-	-	-	-	-		-	-	-	-
Gross/Weapon System Cost	11.250	2	22.500	2.474	15	37.114	-	-	-	-	-	-	-	-	-	-	-	-

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P-1 Line #24

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Date: February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

Item Number / Title [DODIC]:

0300D / 01 / 17

MD09 / AEGIS BMD

- / Aegis BMD Shipsets

ID Code (A=Service Rea	idy, B=Not Serv	ice Ready):	В						М	DAP/MAIS	S Code:							
		FY 2018			FY 2019			FY 2020	, II		FY 2021		T	o Comple	te	-	Total Cost	
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Hardware Cost			·	<u>'</u>			'								'	<u>'</u>	'	
Recurring Cost	_																	
Aegis BMD 3.6 to 4.x Hardware Procurements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.955	1	18.95
Aegis BMD 9.C1 (5.0CU) Hardware Procurements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.721	1	4.72
Aegis BMD 9.C1 (5.0CU) Installs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.400	3	4.20
Aegis BMD 9C.2 (5.x) Inline Procurements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.502	1	4.50
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.37
Subtotal: Hardware Cost	-	•	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	32.37
Software Cost																		
Recurring Cost																		
Aegis BMD 3.6.1 Software and Installs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.250	2	22.50
Aegis BMD 4.0 to 4.x Software Installs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.526	9	4.73
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	27.23
Subtotal: Software Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.23
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	_	-	3.507	17	59.61

#### Remarks:

FY 2016 Omnibus transferred all Aegis BMD Hardware and Software to Budget Project MD90.

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency **Date:** February 2016 Appropriation / Budget Activity / Budget Sub Activity: Item Number / Title [DODIC]: P-1 Line Item Number / Title: - / Aegis BMD SM-3 Block IIA 0300D / 01 / 17 MD09 / AEGIS BMD  $\textbf{ID Code} \,\, (\textbf{A=Service Ready}, \, \textbf{B=Not Service Ready}) \,\, \vdots \,\, B$ MDAP/MAIS Code: **FY 2017 FY 2017** FY 2017 **Prior** To **Resource Summary Years** FY 2015 FY 2016 **Base** OCO **Total FY 2018 FY 2019 FY 2020** FY 2021 Complete **Total** Procurement Quantity (Units in Each) 18 23 23 71 610.051 Gross/Weapon System Cost (\$ in Millions) 213.113 514.622 627.066 1,964.852 Less PY Advance Procurement (\$ in Millions) Net Procurement (P-1) (\$ in Millions) 213.113 514.622 627.066 610.051 1,964.852 \_ \_ Plus CY Advance Procurement (\$ in Millions) \_ Total Obligation Authority (\$ in Millions) 514.622 610.051 1.964.852 213.113 627.066 (The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.) Initial Spares (\$ in Millions)

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

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

	F	Prior Years	5		FY 2015			FY 2016		FY	' 2017 Bas	se	FY	2017 OC	0	FY	2017 Tot	al
Cost Elements	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)												
Flyaway Cost				1												1		
Recurring Cost																		
SM-3 Block IIA Procurement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Subtotal: Flyaway Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hardware Cost																		
Recurring Cost	_																	
Canisters Procurement SM-3 Block IIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Recurring Cost	-	-	-	-	-	-	- 1	-	-	-	-	-	-	-	-	-	-	
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	 I
Support Cost																		
SM-3 Block IIA Diminishing Manufacturing Sources Mitigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SM-3 Block IIA Production Engineering	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Support Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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P-1 Line #24

30.445

28.590

27.264

26.524

Volume 2b - 29

27.674

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Date: February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

Item Number / Title [DODIC]:
- / Aegis BMD SM-3 Block IIA

0300D / 01 / 17

Block IIA

Subtotal: Support Cost

Gross/Weapon System

30.445

MD09 / AEGIS BMD

34.634

514.622

27.264

18

						1												
ID Code (A=Service Read	dy, B=Not Servi	ice Ready): <b>[</b>	3						М	DAP/MAIS	Code:							
		FY 2018			FY 2019			FY 2020	·		FY 2021		To	o Comple	te	7	Total Cost	ì
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost	_																	
SM-3 Block IIA Procurement	27.665	7	193.652	26.066	18	469.187	24.539	23	564.387	23.770	23	546.712	-	-	-	24.985	71	1,773.938
Subtotal: Recurring Cost	-	-	193.652	-	-	469.187	-	-	564.387	-	-	546.712	-	-	-	-	-	1,773.938
Subtotal: Flyaway Cost	-	-	193.652	-	-	469.187	-	-	564.387	-	-	546.712	-	-	-	-	-	1,773.938
Hardware Cost																		
Recurring Cost	_																	
Canisters Procurement SM-3	0.624	8	4.993	0.568	19	10.801	0.546	24	13.097	0.537	24	12.888	-	-	-	0.557	75	41.779

Subtotal: Recurring Cost	-	-	4.993	-	-	10.801	-	-	13.097	-	-	12.888	-	-	-	-	-	41.779
Subtotal: Hardware Cost	-	-	4.993	-	-	10.801	-	-	13.097	-	-	12.888	-	-	-	-	-	41.779
Support Cost																		
SM-3 Block IIA Diminishing Manufacturing Sources Mitigation	1.081	1	1.081	2.572	1	2.572	3.748	1	3.748	3.823	1	3.823	-	-	-	2.806	4	11.224
SM-3 Block IIA Production Engineering	13.387	1	13.387	32.062	1	32.062	45.834	1	45.834	46.628	1	46.628	-	-	-	34.478	4	137.911

23

49.582

627.066

26.524

#### Remarks:

No funding requested in FY 2017. Anticipate a 4Q FY 2017 Initial Production decision for 2018 missile procurement.

28.590

14.468

213.113

50.451

610.051

23

149.135

1,964.852

71

27.674

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

Date: February 2016

Appropriation / Budget Activity / Budget Sub Activity:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars

Equipment, Missile Defense Agency ID Code (A=Service Ready, B=Not Service Ready): A

Program Elements for Code B Items: 0603881C. 0603884C

Other Related Program Elements: 0603881C, 0603884C

Line Item MDAP/MAIS Code: 362	Item MD	AP/MAIS Cod	e(s): N/A									
	Prior			FY 2017	FY 2017	FY 2017					То	
Resource Summary	Years	FY 2015	FY 2016	Base	oco	Total	FY 2018	FY 2019	FY 2020	FY 2021	Complete	Total
Procurement Quantity (Units in Each)	5	-	-	-	-	-	-	-	-	-	-	5
Gross/Weapon System Cost (\$ in Millions)	1,005.650	87.803	78.634	5.503	-	5.503	2.408	3.016	11.017	53.898	-	1,247.929
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,005.650	87.803	78.634	5.503	-	5.503	2.408	3.016	11.017	53.898	-	1,247.929
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,005.650	87.803	78.634	5.503	-	5.503	2.408	3.016	11.017	53.898	-	1,247.929
(The following	Resource Sumi	mary rows are fo	r informational p	urposes only. Th	e corresponding	g budget request	s are documente	ed elsewhere.)	•			
Initial Spares (\$ in Millions)	10.901	-	-	-	-	-	-	-	-	-	-	10.901
Flyaway Unit Cost (\$ in Millions)	172.502	-	-	-	-	-	-	-	-	-	Continuing	Continuing
Gross/Weapon System Unit Cost (\$ in Millions)	201.130	-	-	-	-	-	-	-	-	-	-	249.586

#### 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 (one Antenna Equipment Unit, one Cooling Equipment Unit, one Electronic Equipment Unit, and two Prime Power Units) only, but the "Net Procurement" cost plus the Initial Spares amount includes the costs of all hardware. The FY 2015 funding included procurement of long lead Transmit/Receive Integrated Microwave Modules (TRIMMs) for the Float Antenna Equipment Unit (AEU). The FY 2015 funding also included three Electronic Equipment Unit (EEU) Modification Kits, three Antenna Equipment Unit (AEU) Transformers to include completion of reliability enhancements and qualification testing, contractor production line set-up and certification and critical spares.

The FY 2016 funding includes the procurement of one Float Antenna Equipment Unit (AEU) structure, population of long lead TRIMMs and final delivery, one Electronic Equipment Unit (EEU) Modification Kit and four Antenna Equipment Unit (AEU) transformers. The FY 2017 funding includes one AEU transformer, one EEU Modification Kit and one Radar Field Upgrade (RAFU) Kit.

The FY 2018 - FY 2021 funding includes procurement of three EEU Modification Kits, four AEU transformers, four PPUs and three RAFU Kits.

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Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

Date: February 2016

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

ID Code (A=Service Ready, B=Not Service Ready): A

Program Elements for Code B Items: 0603881C, 0603884C

Other Related Program Elements: 0603881C, 0603884C

Line Item MDAP/MAIS Code: 362

Item MDAP/MAIS Code(s): N/A

	Exhibits Schedule			Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title*	Subexhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)					
P-5	BMDS AN/TPY-2 Radars	P-5a, P-21	Α	5 / 1,005.650	- / 87.803	- / 78.634	- / 5.503	- / -	- / 5.503
P-40	Total Gross/Weapon System Cost			5 / 1,005.650	- / 87.803	- / 78.634	- / 5.503	- 1 -	- / 5.503
	Exhibits Schedule			FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)					
P-5	BMDS AN/TPY-2 Radars	P-5a, P-21	Α	- /2.408	- /3.016	- / 11.017	- / 53.898	- / -	5 / 1,247.929
P-40	Total Gross/Weapon System Cost			- / 2.408	- / 3.016	- / 11.017	- / 53.898	- 1 -	5 / 1,247.929

<sup>\*</sup>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.

#### Justification:

FY 2015: Procured long lead Transmit/Receive Integrated Microwave Modules (TRIMMs) for the Float Antenna Equipment Unit (AEU). Also procured three Electronic Equipment Unit (EEU) Modification Kits, three Antenna Equipment Unit (AEU) Transformers to include completion of reliability enhancements and qualification testing, contractor production line set-up and certification and critical spares.

FY 2016: Procure one Float AEU structure, population of long lead TRIMMs and final delivery, one EEU Modification Kit and four AEU transformers.

FY 2017: Procure one AEU Transformer, one EEU Modification Kit and one Radar Field Upgrade (RAFU) Kit.

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

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / BMDS AN/TPY-2 Radars

ID Code (A=Service Ready, B=Not Service Ready)	) : A					MDAP/MA	IS Code:					
	Prior			FY 2017	FY 2017	FY 2017					То	
Resource Summary	Years	FY 2015	FY 2016	Base	oco	Total	FY 2018	FY 2019	FY 2020	FY 2021	Complete	Total
Procurement Quantity (Units in Each)	5	-	-	-	-	-	-	-	-	-	-	5
Gross/Weapon System Cost (\$ in Millions)	1,005.650	87.803	78.634	5.503	-	5.503	2.408	3.016	11.017	53.898	-	1,247.929
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,005.650	87.803	78.634	5.503	-	5.503	2.408	3.016	11.017	53.898	-	1,247.929
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,005.650	87.803	78.634	5.503	-	5.503	2.408	3.016	11.017	53.898	-	1,247.929
(The following	g Resource Sum	mary rows are fo	or informational p	urposes only. Ti	ne corresponding	g budget request	s are documente	ed elsewhere.)	•			
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	201.130	-	-	-	-	-	-	-	-	-	-	249.586

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

	F	Prior Years	3		FY 2015			FY 2016		F۱	/ 2017 Bas	se	FY	/ 2017 OC	0	FY	Y 2017 Tot	.al
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
lardware Cost				·			'	'					·		'	<u>'</u>		
Recurring Cost																		
Antenna Equipment Unit (AEU) <sup>(†)</sup>	130.482	5	652.411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>	-	-	-	1.775	3	5.326	0.685	4	2.740	0.919	1	0.919	-	-	-	0.919	1	0.9
Cooling Equipment Unit (CEU) <sup>(†)</sup>	6.996	5	34.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Critical Spares <sup>(†)</sup>	14.361	1	14.361	11.391	1	11.391	-	-	-	-	-	-	-	-	-	-	-	
Electronic Equipment Unit (EEU) <sup>(†)</sup>	20.914	5	104.572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>	-	-	-	2.795	3	8.384	3.171	1	3.171	3.134	1	3.134	-	-	-	3.134	1	3.1
Float Antenna Equipment Unit (AEU) <sup>(†)</sup>	-	-	-	-	-	-	72.723	1	72.723	-	-	-	-	-	-	-	-	
Float Cooling Equipment Unit (CEU) <sup>(†)</sup>	12.929	2	25.857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Date: February 2016

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

D Code (A=Service Read									IVIL	DAP/MAIS	Code:							
Note: Subtotals or Totals i		P-5 may no		r sum exactl	y due to rour FY 2015	nding.		FY 2016		F	′ 2017 Bas		F	′ 2017 OC	0	FY	′ 2017 Tot	al
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost
Float Electronic Equipment Unit (EEU) <sup>(†)</sup>	21.491	2	42.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Forward-Based Mode Prime Power Units (PPU) <sup>(†)</sup>	10.985	4	43.940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Prime Power Unit (PPUs - 2 each radar system) <sup>(†)</sup>	14.109	5	70.545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Radar Factory Unit (RAFU) Kit <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	1.450	1	1.450	-	-	-	1.450	1	1.4
Transmit/Receive Integrated Microwave Module (TRIMMs) <sup>(†)</sup>	-	-	-	59.840	1	59.840	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Recurring Cost	-	-	989.650	-	-	84.941	-	-	78.634	-	-	5.503	-	-	-	-	-	5.5
Non Recurring Cost																		
Contractor Certification <sup>(†)</sup>	-	-	-	2.862	1	2.862	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Non Recurring Cost	-	-	-	-	-	2.862	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Hardware Cost	-	-	989.650	-	-	87.803	-	-	78.634	-	-	5.503	-	-	-	-	-	5.5
Support Cost																		
Program Support*	16.000	1	16.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: Support Cost	-	-	16.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gross/Weapon System Cost	201.130	5	1,005.650	-	-	87.803	-	-	78.634	-	-	5.503	-	-	-	-	-	5.5
		FY 2018			FY 2019			FY 2020			FY 2021		To	o Complet	е	1	Total Cost	
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Antenna Equipment Unit (AEU) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	130.482	5	652.4
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>	0.947	1	0.947	-	-	-	0.991	2	1.982	0.914	1	0.914	-	-	-	1.069	12	12.8

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

0300D / 01 / 17

MD11 / BMDS AN/TPY-2 Radars

Date: February 2016

Item Number / Title [DODIC]:
- / BMDS AN/TPY-2 Radars

ID Code (A=Service Ready, B=Not Service Ready): A

MDAP/MAIS Code:

D Code (A=Service Read	dy, B=Not Servi	ice Ready):	А						MI	DAP/MAIS	Code:							
		FY 2018			FY 2019			FY 2020			FY 2021		To	Complet	e	-	Total Cost	
Cost Elements	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)									
Cooling Equipment Unit (CEU) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.996	5	34.9
Critical Spares <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.876	2	25.
Electronic Equipment Unit (EEU) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.914	5	104.
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>	-	-	-	3.016	1	3.016	2.979	2	5.957	-	-	-	-	-	-	2.958	8	23.0
Float Antenna Equipment Unit (AEU) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72.723	1	72.
Float Cooling Equipment Unit (CEU) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.929	2	25.
Float Electronic Equipment Unit (EEU) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.491	2	42.
Forward-Based Mode Prime Power Units (PPU) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	13.246	4	52.984	-	-	-	12.116	8	96.
Prime Power Unit (PPUs - 2 each radar system) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.109	5	70.
Radar Factory Unit (RAFU) Kit <sup>(†)</sup>	1.461	1	1.461	-	-	-	1.539	2	3.078	-	-	-	-	-	-	1.497	4	5
Transmit/Receive Integrated Microwave Module (TRIMMs) <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59.840	1	59.
Subtotal: Recurring Cost	-	-	2.408	-	-	3.016	-	-	11.017	-	-	53.898	-	-	-	-	-	1,229
Non Recurring Cost																		
Contractor Certification <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.862	1	2
Subtotal: Non Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Subtotal: Hardware Cost	-	-	2.408	-	-	3.016	-	-	11.017	-	-	53.898	-	-	-	-	-	1,231
Support Cost								,		,								
Program Support*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.000	1	16
Subtotal: Support Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
Gross/Weapon System	-	-	2.408	-	-	3.016	-	-	11.017	-	-	53.898	-	-	-	249.586	5	1,247

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Ager	ncy	Date: February 2016
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
D Code (A=Service Ready, B=Not Service Ready): A	MDAP/MAIS Code:	<u>,                                      </u>
Remarks: AN/TPY-2 Radar consists of one Antenna Equipment Unit (AEU), one Coo	oling Equipment Unit (CEU), one Electronic Equipment Unit (EEU) a	and two Prime Power Units (PPUs).
(†) indicates the presence of a P-5a		

LI MD11 - BMDS AN/TPY-2 Radars Missile Defense Agency UNCLASSIFIED Page 6 of 24

P-1 Line #25 **Volume 2b - 36** 

Exhibit P-5a, Procurement History and Planning: PB 2017 Missile Defense Agency

Date: February 2016 Appropriation / Budget Activity / Budget Sub Activity: P-1 Line Item Number / Title:

Item Number / Title [DODIC]: 0300D / 01 / 17 MD11 / BMDS AN/TPY-2 Radars - / BMDS AN/TPY-2 Radars

Cost Elements	0 0	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	<b>Qty</b> (Each)	Unit Cost	Specs Avail Now?	Date Revision Available	RFP Issue
Antenna Equipment Unit (AEU) <sup>(†)</sup>		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	144.290	Υ		
Antenna Equipment Unit (AEU) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	144.090	Υ		
Antenna Equipment Unit (AEU) - 1 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	126.400	Υ		
Antenna Equipment Unit (AEU) - $2^{(\dagger)}$		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	126.400	Υ		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Sep 2015	3	1.775	Υ		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Sep 2016	4	0.685	Υ		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Sep 2017	1	0.919	Υ		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2018	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2017	Sep 2018	1	0.947	Υ		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Sep 2020	2	0.991	Υ		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2021	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2020	Sep 2021	1	0.914	Υ		
Cooling Equipment Unit (CEU) <sup>(†)</sup>		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	7.800	Υ		
Cooling Equipment Unit (CEU) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	7.668	Υ		
Cooling Equipment Unit (CEU) - 1 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	6.802	Υ		
Cooling Equipment Unit (CEU) - 2 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	6.802	Υ		
Critical Spares <sup>(†)</sup>		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	May 2014	May 2015	1	14.361	Υ		
Critical Spares <sup>(†)</sup>		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Dec 2015	1	11.391	Υ		
Electronic Equipment Unit (EEU) <sup>(†)</sup>		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	23.400	Υ		
Electronic Equipment Unit (EEU) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	23.000	Υ		
Electronic Equipment Unit (EEU) - 1 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	20.220	Υ		
Electronic Equipment Unit (EEU) - $2^{(\dagger)}$		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	20.220	Υ		

Exhibit P-5a, Procurement History and Planning: PB 2017 Missile Defense Agency

Date: February 2016

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

Method/Type 0 Date Specs Date С Award of First Avail Revision RFP Issue **Unit Cost** Qty 0 FΥ Cost Elements Contractor and Location Funding Vehicle Location of PCO Date Delivery (Each) (\$ M) Now? **Available** Date Electronic Equipment Unit (EEU) Υ Raytheon / Woburn, MA SS / FFP Jun 2015 2015 MDA, Huntsville, AL Dec 2014 2.795 Modification Kit<sup>(†)</sup> Electronic Equipment Unit (EEU) 2016 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Dec 2015 Jun 2016 3.171 Υ Modification Kit<sup>(†)</sup> Electronic Equipment Unit (EEU) 2017 Raytheon / Woburn, MA SS / FFP MDA. Huntsville, AL Dec 2016 Jun 2017 3.134 Υ Modification Kit<sup>(†)</sup> Electronic Equipment Unit (EEU) 2019 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Dec 2018 Jun 2019 3.016 Υ Modification Kit<sup>(†)</sup> Electronic Equipment Unit (EEU) 2020 Raytheon / Woburn, MA SS / FFP MDA. Huntsville, AL Dec 2019 Jun 2020 2 2.979 Υ Modification Kit<sup>(†)</sup> Float Antenna Equipment Unit Raytheon / Woburn, MA Dec 2015 Jun 2018 2016 SS / FFP MDA. Huntsville. AL 72.723 Ν (AEU)<sup>(†)</sup> Float Cooling Equipment Unit Raytheon / Woburn, MA SS / FFP Jun 2014 Υ 2012 MDA. Huntsville. AL Dec 2011 7.140 (CEU)<sup>(†)</sup> Float Cooling Equipment Unit 2014 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Sep 2014 Dec 2015 18.721 Υ (CEU)<sup>(†)</sup> Float Electronic Equipment Unit 2012 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Dec 2011 Jun 2014 20.260 (EEU)<sup>(†)</sup> Float Electronic Equipment Unit 2014 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Sep 2014 Sep 2016 22.718 Υ (EEU)<sup>(†)</sup> Forward-Based Mode Prime Power Raytheon / Woburn, MA Υ 2013 SS / FFP MDA. Huntsville. AL Dec 2012 Dec 2014 10.985 Units (PPU)(†) Forward-Based Mode Prime Power 2021 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Dec 2020 Dec 2022 13.246 Υ Units (PPU)(†) Prime Power Unit (PPUs - 2 each 2010 Raytheon / Woburn, MA SS / FFP MDA. Huntsville, AL Jun 2010 Dec 2012 15.600 Υ radar system)(†) Prime Power Unit (PPUs - 2 each 2 Υ 2012 Raytheon / Woburn, MA SS / FFP MDA. Huntsville. AL Dec 2011 Jun 2014 15.336 radar system)(†) Prime Power Unit (PPUs - 2 each 2013 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Dec 2012 Jun 2015 13.895 Υ radar system) - 1<sup>(†)</sup> Prime Power Unit (PPUs - 2 each Υ 2013 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Dec 2013 Jun 2016 13.895 radar system) - 2<sup>(†)</sup> Υ Radar Factory Unit (RAFU) Kit<sup>(†)</sup> 2017 Raytheon / Woburn, MA SS / FFP MDA, Huntsville, AL Dec 2016 Jun 2017 1 1.450 Raytheon / Woburn, MA SS / FFP MDA. Huntsville. AL Jun 2018 Υ Radar Factory Unit (RAFU) Kit<sup>(†)</sup> 2018 Dec 2017 1.461

**UNCLASSIFIED** 

LI MD11 - BMDS AN/TPY-2 Radars

Exhibit P-5a, Procurement History and Planning: PB 2017 M	/lissile Defense Agency	Date: February 2016
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	0 0 0	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost	Specs Avail Now?	Revision	RFP Issue Date
Radar Factory Unit (RAFU) Kit <sup>(†)</sup>		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Jun 2020	2	1.539	Y		
Transmit/Receive Integrated Microwave Module (TRIMMs) <sup>(†)</sup>		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Jun 2016	1	59.840	Y		
Contractor Certification <sup>(†)</sup>		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Dec 2015	1	2.862	Υ		

<sup>(†)</sup> indicates the presence of a P-21

Remarks: N/A

Exhibit	P-21, Pr	oducti	on Sc	hedul	e: PE	3 201	7 Mis	sile D	efens	se Age	ency											Date	e: Fe	bruary	/ 2016	3 			
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Exhibit P-21, Produc	ction Sc	hedu	le: PE	3 201	7 Mis	sile D	efens	e Age	ency											Date	e: Fel	oruary	/ 2016	3			
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Exh	ib	it P-	21, Pro	oducti	on Sc	hedu	le: PE	3 201	17 Mis	ssile D	efens	e Ag	ency											Date	e: Fel	oruary	2010	6			
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11	20	012 M	/IDA	2	-	2			Α -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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P-1 Line #25

Exhibit P-21, Production Schedule: PB 2017 Missile Defense Agency  Date: February	2016			
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17  P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars  Item Number / - / BMDS AN/TPY	Title [[ PY-2 R	DODIC]: adars		
Cost Elements			В	— В
(Units in Each)         Fiscal Year 2014         Fiscal Year 2015           ACCEPT         Calendar Year 2014         Calendar Year	r 2015		A	
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Antenna Equipment Unit (AEU)		'	· · · · · · · · · · · · · · · · · · ·	
1 2010 MDA 1 1 -				-
1 2012 MDA 2 - 2 2				-
Antenna Equipment Unit (AEU) - 1				
1   2013   MDA   1   -   1   -   -   -   -   -   -   -	1			-
Antenna Equipment Unit (AEU) - 2				
1 2013 MDA   1 -   1   A   -   -   -   -   -   -   -   -	-		-	1
Antenna Equipment Unit (AEU) Transformer				
2 2015 MDA 3 - 3 A	-		1	2
2 2016 MDA 4 - 4				4
2 2017 MDA 1 - 1				1
2 2018 MDA 1 - 1				1
2 2020 MDA 2 - 2				2
2 2021 MDA 1 - 1				1
Cooling Equipment Unit (CEU)				
3 2010 MDA 1 1 -				-
3   2012   MDA   2   -   2   -   -   -   -   -   2				-
Cooling Equipment Unit (CEU) - 1				
3 2013 MDA 1 - 1	1			-
Cooling Equipment Unit (CEU) - 2				
3 2013 MDA 1 - 1 A	-		-	1
Critical Spares				
4   2014   MDA   1   -   1			_	-
4 2015 MDA 1 - 1 A	-		-	1
Electronic Equipment Unit (EEU)				
5 2010 MDA 1 1 -				-
5 2012 MDA 2 - 2 2				-
Electronic Equipment Unit (EEU) - 1				
5 2013 MDA 1 - 1	1			-
Electronic Equipment Unit (EEU) - 2				
5 2013 MDA 1 - 1 A	-		-	1
Electronic Equipment Unit (EEU) Modification Kit	لبسب			
6 2015 MDA 3 - 3 A	1	- '	1 -	1
O         N         D         J         F         M         A         M         J         J         A         S         O         N         D         J         F         M         A         M         J         J         A         S         O         N         D         J         F         M         A         M         M         A         M         D         J         F         M         A         M         M         A         N         D         J         F         M         A         M         M         A         N         D         J         F         M         A         M         M         D         U         U         U         U         U         E         C         O         E         A         E         A         P         A         I         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N         D         N		J A U U L G	S E P	

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Exh	ib	it P-	-21, Pro	oducti	on Sc	hedul	le: PE	3 20	17 Mi	ssile [	Defen	se Aç	gency											Date	e: Fel	oruary	2016	3			
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7	2	016 N	MDA	1	-	1																									
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9	2	2014 N	MDA	1	-	1			,									Α -	-	-	-	-	-	-	-	-	-	-	-	-	
orwa	ard-	Based	Mode Prime	e Power Ur	nits (PPU)													•	,							<u> </u>					
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rime	Po	wer Ur	nit (PPUs - 2	2 each rada	ar system)																										
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11	2	2013 N	MDA	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1				
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P-1 Line #25

Exhibit	P-21, Pr	oducti	on Sc	hedul	e: PB	201	7 Mis	sile De	efens	e Age	ency											Date	e: Fel	oruary	2016	6			
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1 2012	MDA	2	2	-																									-
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Exhibit F	P-21, Pro	oducti	on Sc	hedu	le: Pl	3 201	7 Mis	sile D	efens	e Age	ency											Dat	e: Fel	oruary	/ 2016	3			
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6 2017	MDA	1	-	1														_	Α -	-	-	-	-	-	1				
6 2019	MDA	1	-	1																									
6 2020	MDA	2	-	2																									
Float Antenna	Equipment U	nit (AEU)																											
7 2016	MDA	1	-	1			Α -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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Float Electron	nic Equipment	Unit (EEU)	)																										
9 2012	MDA	1	1	-													,												
9 2014	MDA	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1													
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10 2013		4	3																										
10 2021	MDA	4	-	4		_																							
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P-1 Line #25

Exhibit F	P-21, Pr	oducti	on Sc	hedul	le: PE	3 201	7 Mis	sile D	efens	e Age	ency											Date	e: Fel	oruary	2016	3			
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		lements in Each)								Fiscal Y	ear 2018	3										Fiscal Y	ear 2019	1					В
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1 2012	MDA	2	2	-																									-
Antenna Equi		EU) - 1																											
1 2013	MDA	1	1	-																									_
Antenna Equi	ipment Unit (A	EU) - 2																											
1 2013	MDA	1	1	-																									-
Antenna Equi	ipment Unit (A	EU) Transf	former																										
2 2015	MDA	3	3	-																									-
2 2016	MDA	4	4	-																									-
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2 2018	MDA	1	-	1			Α -	-	-	-	-	-	-	-	-	1													-
2 2020	MDA	2	-	2					,																				
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Cooling Equip	oment Unit (C	EU)																											
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3 2013	MDA	1	1	-																									-
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4 2014	MDA	1	1	-																									T -
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Electronic Eq	uipment Unit	(EEU)																											
5 2010	MDA	1	1	-																									-
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5 2013	MDA	1	1	-																									-
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Exhibit F	P-21, Pro	oducti	on Sc	hedu	le: Pl	B 201	7 Mis	sile D	efens	e Age	ency											Dat	e: Fel	bruary	/ 201	6			
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Prime Power	Unit (PPUs - 2	2 each rada	ar system)	- 2																									
11 2013	MDA	1	1	-																									
Radar Factory	/ Unit (RAFU)	Kit																											
12 2017	MDA	1	1	-																									
12 2018	MDA	1	-	1			Α -	-	-	-	-	-	1																
12 2020	MDA	2	-	2																							_		
Transmit/Rece			ve Module	<del>-</del>	s)																								
13 2015		1	1	-																									Ш.
Contractor Ce		Γ.	1 .	T	1																								_
14 2015	MDA	1	1	-																	-		1 .			Τ.			₩.
					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	U L	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	N U	U L	U G	S E P	
																						,					,		j

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P-1 Line #25

Exhibit F	P-21, Pr	oducti	on Sc	hedul	le: PE	3 201	7 Mis	sile D	efens	e Age	ency											Date	e: Fel	oruary	2016	3			
<b>Appropr</b> 0300D / 0		Budge	t Acti	vity /	Budg	jet Sı	ub Ac	ctivity	:					<b>ber</b> / PY-2		ars								n <b>ber</b> / AN/T					
		lements in Each)								Fiscal Y	ear 2020											Fiscal Y	ear 2021						В
			ACCEPT									C	Calendar	Year 202	0								Cale	ndar Yea	r 2021				Ļ
O F C R O # FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	0 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	N C E
Antenna Equip																													
1 2010		1	1	-																									Τ.
1 2012	MDA	2	2	-																									-
Antenna Equip		EU) - 1																											
1 2013	MDA	1	1	-																									Τ.
Antenna Equip	pment Unit (A	EU) - 2																											
1 2013	MDA	1	1	-																									Τ.
Antenna Equip	pment Unit (A	EU) Transf	former																										
2 2015	MDA	3	3	-																									
2 2016	MDA	4	4	-																									<u> </u>
2 2017	+	1	1	-																									
2 2018	MDA	1	1	-																									
2 2020	MDA	2	-	2			Α -	-	-	-	-	-	-	-	-	2													
2 2021	MDA	1	-	1															Α -	-	-	-	-	-	-	-	-	1	١.
Cooling Equip	ment Unit (Cl	EU)																											
3 2010	MDA	1	1	-																									
3 2012	MDA	2	2	-																									-
Cooling Equip	ment Unit (Cl	EU) - 1																											
3 2013	MDA	1	1	-																									1 -
Cooling Equip	ment Unit (Cl	EU) - 2																											
3 2013	MDA	1	1	-																									
Critical Spares	s	'																											
4 2014	MDA	1	1	-																									-
4 2015	MDA	1	1	-																									-
Electronic Equ	uipment Unit (	(EEU)																											
5 2010	MDA	1	1	-																									
5 2012	MDA	2	2	-																									
Electronic Equ	uipment Unit (	(EEU) - 1																											
5 2013	MDA	1	1	-																									-
Electronic Equ	uipment Unit (	(EEU) - 2																											
5 2013	MDA	1	1	-																									
Electronic Equ	uipment Unit (	(EEU) Modi	ification Ki	t																									
6 2015	MDA	3	3	-																									
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P-1 Line #25

Exhibit I	P-21, Pro	oducti	on Sc	hedul	le: PE	3 201	7 Mis	sile D	efens	e Age	ency											Dat	e: Fel	oruary	/ 2016	3			
Appropr 0300D /	r <b>iation /</b> 01 / 17	Budge	t Acti	vity /	Budç	get S	ub Ac	tivity	:						Title: 2 Rad							Iten - / E	<b>Nun</b>	nber / AN/T	Title PY-2	[DOI Rada	DIC]: ars		
		lements in Each)								Fiscal Y	ear 2020	)										Fiscal \	ear 2021						В
	(00		ACCEPT			_	_						Calendaı	Year 20	20									ndar Yea	r 2021				A L
M O F C R O # FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 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	J 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	A N C E
6 2016		1	1	-																					1				<u> </u>
6 2017	MDA	1	1	-	Ì																								
6 2019	MDA	1	1	-																									
6 2020	MDA	2	-	2			Α -	-	-	-	-	-	1	-	1														
Float Antenna	Equipment U	Init (AEU)												•															
7 2016	MDA	1	1	-																									
Float Cooling	Equipment U	nit (CEU)																											
8 2012	MDA	1	1	-																									
8 2014	MDA	1	1	-																									
Float Electron		Unit (EEU)	)																										
9 2012	MDA	1	1	-																									
9 2014		1	1																										
	ed Mode Prime	e Power U	nits (PPU)	, ,																									
10 2013		4	3	_														_				1						1	<u> </u>
10 2021		4	-	4															Α -		-	-	-		<u> </u>	<u> </u>		-	
Prime Power					1																								_
11 2010		1	1																										<u> </u>
11 2012		2	2																										
	Unit (PPUs - 2			_	I																								_
11 2013		1	1																										
Prime Power		each rada	ar system) 1	_																									_
		1	1	-																									<u> </u>
Radar Factor		Kit 1	1	_																									1
12 2017		1	1																										
12 2010		2	- '	2			Α -	_	_	-	-	-	2	٦.															
	eive Integrate		e Module		.)		A -		_			<u> </u>																	
13 2015	_	1	1	-																									1
Contractor Ce																													
14 2015		1	1	-																									
					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 N	J 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 I	P-21, Pr	oducti	on Sc	hedul	e: PE	3 201	7 Mis	sile D	efens	e Age	ency											Date	e: Fel	oruary	2016	6			
Appropr 0300D/		Budge	t Acti	vity /	Budg	jet Su	ıb Ac	tivity	<b>':</b>	- 1	<b>Line</b> 11 / E													nber / AN/T					
		lements in Each)								Fiscal Y	ear 2022											Fiscal Y	ear 2023						В
			ACCEPT									C	Calendar	Year 202	2								Cale	ndar Yea	r 2023				Ļ
M O F C R O # FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	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	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	N C E
Antenna Equi																													
1 2010		1	1	-																									-
1 2012	MDA	2	2	-																									-
Antenna Equi		NEU) - 1																											
1 2013	MDA	1	1	-																									-
Antenna Equi	ipment Unit (A	AEU) - 2																											
1 2013	MDA	1	1	-																									-
Antenna Equi	ipment Unit (A	AEU) Transf	former																										
2 2015	MDA	3	3	-																									-
2 2016	MDA	4	4	-																									-
2 2017		1	1	-																									-
2 2018	MDA	1	1	-																									-
2 2020	MDA	2	2	-																									-
2 2021		1	1	-																									-
Cooling Equip	pment Unit (C	EU)																											
3 2010	MDA	1	1	-																									-
3 2012	MDA	2	2	-																									-
Cooling Equip	pment Unit (C	EU) - 1																											
3 2013	MDA	1	1	-																									-
Cooling Equip	pment Unit (C	EU) - 2																											
3 2013	MDA	1	1	-																									-
Critical Spare	es																												
4 2014	MDA	1	1	-																									-
4 2015	MDA	1	1	-																									-
Electronic Eq	uipment Unit	(EEU)																											
5 2010	MDA	1	1	-																									-
5 2012	MDA	2	2	-																									-
Electronic Eq	uipment Unit	(EEU) - 1																											
5 2013	MDA	1	1	-																									-
Electronic Eq	uipment Unit	(EEU) - 2																											
5 2013	MDA	1	1	-																									-
Electronic Eq		(EEU) Modi	ification Ki	t																									
6 2015	MDA	3	3	-																									-
					0	N	D	J	F	М	Α	М	J	J	Α	S	0	N	D	J	F	М	Α	М	J	J	Α	S	
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P-1 Line #25

Exh	ıib	it P	-21, Pro	oducti	on Sc	hedu	le: Pl	B 201	7 Mis	sile D	efens	e Age	ency											Dat	e: Fel	oruary	2016	6			
			<b>ation</b> / 1 / 17	Budge	et Acti	ivity /	Bud	get S	ub A	ctivity	:			Item BMDS											<b>Nun</b>						
				lements in Each)								Fiscal Y	ear 2022	2										Fiscal	ear 2023						В
					ACCEPT									(	Calendar	Year 202	22								Cale	ndar Yea	r 2023				î
M O F C R		FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	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	0 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	N C
6	_		MDA	1	1	-						1	1				1										1				
_	+	017	MDA	1	1	-																									
6	2	019	MDA	1	1	-																									
6	2	020	MDA	2	2	-																									
loat	Ant	enna E	Equipment U	Jnit (AEU)			'																								
7	2	016	MDA	1	1	-																									
loat	Coc	oling E	quipment U	nit (CEU)																											
8	2	012	MDA	1	1	-																									
8	2	014	MDA	1	1	-																									
loat	Ele	ctronic	Equipment	Unit (EEU)	)																										
9	2	012	MDA	1	1	-																									
9	2	014	MDA	1	1	-																									
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_	+	.013 N		4	3				1	_				1	1					ĭ .		1									
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_	_	010		1	1																										
		012		2	2																										
_	_		nit (PPUs - 2			_																									
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P-1 Line #25

Exhibit P-21, Production Schedule: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / BMDS AN/TPY-2 Radars

		Produc	tion Rates (Each /	Month)				Procurement Le	adtime (Months)			
MFR						Ini	tial			Rec	rder	
Ref #	Manufacturer Name - Location	MSR For 2017	1-8-5 For 2017	MAX For 2017	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	-	-	-	-
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	-	-	-	=
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	-	-	-	-
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	-	-	-	=
8	Raytheon - Woburn, MA	1	1	4	4	2	15	17	-	-	-	=
9	Raytheon - Woburn, MA	1	1	4	4	2	24	26	-	-	-	-
10	Raytheon - Woburn, MA	1	1	4	4	2	24	26	-	-	-	-
11	Raytheon - Woburn, MA	1	1	4	4	2	30	32	-	-	-	-
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

<sup>&</sup>quot;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 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).

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency		Date: February 2016
Appropriation / Budget Activity / Budget Sub Activity:	P-1 Line Item Number / Title:	
0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major	MD20 / Arrow Upper Tier	
Equipment, Missile Defense Agency		

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 | Item MDAP/MAIS Code(s): N/A

			(-)									
Resource Summary	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	-	15.000	-	-	-	-	-	-	-	-	15.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	15.000	-	-	-	-	-	-	-	-	15.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	15.000	-	-	-	-	-	-	-	-	15.000
(The following	g Resource Sum	mary rows are fo	or informational p	urposes only. Ti	ne corresponding	g budget request	ts are documente	ed elsewhere.)	•			
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-

### **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.

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

Appropriation / Budget Activity / Budget Sub Activity:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

Equipment, Missile Defense Agency

MD20 / Arrow Upper Tier

P-1 Line Item Number / Title:

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

Item MDAP/MAIS Code(s): N/A

	Exhibits Schedule	,		Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title* Subo	exhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)					
P-5	Upper Tier Interceptor		Α	- / -	- / -	- / 15.000	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost	- / / / 15.000 - / -		- 1 -	- 1 -	- 1 -			
Exhibits Schedule				FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Exhibit Type	Title* Subo	exhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)					
P-5	Upper Tier Interceptor		Α	- / -	- / -	- / -	- / -	- / -	- / 15.000
P-40	Total Gross/Weapon System Cost	- / -	- / -	- / -	- / -	- / -	- / 15.000		

<sup>\*</sup>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

Exhibit P-5, Cost	Analysis	• PB 20	17 Missi	le Defen	se An	encv								Date: F	ebruary 2	2016		
Appropriation / B 0300D / 01 / 17						P-1	<b>Line Item</b> 20 / Arrow			:				Item Nu	imber / T r Tier Int	itle [DO	DIC]:	
ID Code (A=Service Read	ly, B=Not Service	e Ready):	A			·			М	DAP/MA	IS Code:							
December 6			Prior	FY 20	45	FY 2016	FY 2017	FY 20		Y 2017	FY 2018	FY 2	040 5	Y 2020	FY 202	T Com	-	Total
Resource S			Years	F1 20		F1 2016	Base	00	-	Total	F1 2010	) F12	UIS F	1 2020	F1 202	1 Com	piete	Total
Procurement Quantity (Uni		- )	-		-	15 000	-		-	-	-		-	-		-	-	15 000
Gross/Weapon System Co	· ·		-		-	15.000	-		-		-			-				15.000
Less PY Advance Procure  Net Procurement (P-1) (\$ i	•	oris)	-		-	15.000			-		-		-	-		-	-	15.000
Plus CY Advance Procure	<u> </u>	ona)			-	15.000			-		-	-	-			_	-	13.000
Total Obligation Authorit					-	15.000			-		-	-	-			-	-	15.000
Total Obligation Authorit								The serve on								-	-	13.000
Initial Spares (\$ in Millions)	(THE	IOIIOWING F	-	Illiliary rows	- I	nformational p -	urposes orny.	The corresp	- Jonaing but	iget request	s are documer		- l			_	_	
Gross/Weapon System Ur	nit Cost (\$ in M	lillions)			-				-		_	_	-			_	-	
Oross/Weapon System or	iii COSt (\$ iii ivi	illions)			-				-				-			-	_	
Note: Subtotals or Totals i	n this Exhibit	P-5 may no	ot be exact o	r sum exact	ly due to	rounding.								,				
Prior Years			•	FY 2015			FY 2016			FY 2017 Base			F	Y 2017 O	0	FY 2017 Total		
			Total			Total			Total			Total			Total			Total
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each		Unit Cost (\$ M)	<b>Qty</b> (Each)	Cost (\$ M)	Unit Cost	t Qty (Each)	Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Cost (\$ M)
Hardware Cost																		
Non Recurring Cost			1		ı					. 1				1	1			
Upper Tier Interceptor	-	-	-	-			15.000	1	15.000	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	-	-		-   -	-	-	15.000	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	-	-			-	-	15.000		-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-			-	-	15.000	-	-	-	-	-	-	-	-	-
FY 2018			FY 2019			FY 2020			FY 2021			To Complete			e Total C		st	
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each		Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	t Qty	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Hardware Cost				<u> </u>														
Non Recurring Cost																		
Upper Tier Interceptor	-	-	-	-			-	-	-	-	-	-	-	-	-	15.000		1 15.000
Subtotal: Non Recurring Cost	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	15.000
Subtotal: Hardware Cost	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	15.000
Gross/Weapon System Cost	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	15.000
Remarks:																		

LI MD20 - Arrow Upper Tier Missile Defense Agency UNCLASSIFIED
Page 3 of 4

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agen	Date: February 2016					
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				
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	,				

LI MD20 - Arrow Upper Tier Missile Defense Agency UNCLASSIFIED
Page 4 of 4

xhibit P-40. Budge	t Line Item	Justification:	PB 2017	Missile Defense Agency	
.XIIIDIL I <del>-T</del> U. DUUUC		ousuncation, i	D 2011	MISSIC DCICIISC AGCITO	

Date: February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

Equipment, Missile Defense Agency

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

Item MDAP/MAIS Code(s): N/A

			` '									
Resource Summary	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	-	150.000	-	-	-	-	-	-	-	-	150.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	150.000	-	-	-	-	-	-	-	-	150.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	150.000	-	-	-	-	-	-	-	-	150.000
(The followin	g Resource Sum	mary rows are fo	or informational p	ourposes only. Ti	he corresponding	g budget reques	ts are documente	ed elsewhere.)	,	<del>-</del> (-		
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-

## **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.

LI MD34 - David's Sling Missile Defense Agency **UNCLASSIFIED** 

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P-1 Line #27

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

Date: February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

MD34 / David's Sling

Equipment, Missile Defense Agency

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

Item MDAP/MAIS Code(s): N/A

	Exhibits Schedule		Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title* Subexh	bits C		Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	David's Sling Weapon System Components	Α	- / -	- / -	- / 150.000	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost		- 1 -	- 1 -	- / 150.000	- 1 -	- / -	- 1 -
	Exhibits Schedule		FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Exhibit Type	Title* Subexh	bits C		Quantity / Total Cost (Each) / (\$ M)				
P-5	David's Sling Weapon System Components	А	- / -	- / -	- / -	- / -	- / -	- / 150.000
P-40	Total Gross/Weapon System Cost		- 1 -	- 1 -	- 1 -	- 1 -	- 1 -	- / 150.000

<sup>\*</sup>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

							UN	ICLAS		,								
Exhibit P-5, Cost	Analysis	s: PB 20	17 Missi	le Defens	se Agen	су								Date: Fe	ebruary 2	2016		
<b>Appropriation / B</b> 0300D / 01 / 17	Sudget A	ctivity /	Budget	Sub Acti	vity:		<b>Line Item</b> 34 / David'		r / Title:						imber / 1 d's Sling \ nents			1
ID Code (A=Service Read	dy, B=Not Servi	ce Ready):	Ą			'			МІ	DAP/MAI	S Code:							
Resource S	ummary		Prior Years	FY 20	15 FY	2016	FY 2017 Base	FY 20 OCC	I	/ 2017 Гotal	FY 2018	FY 2	:019 F	Y 2020	FY 202	- I	o plete	Total
Procurement Quantity (Uni	its in Each)		-		-	-	-		-	-	-		-	-		-	-	-
Gross/Weapon System Co	ost (\$ in Million	s)	-		-	150.000	-		-	-	-		-	-		-	-	150.000
Less PY Advance Procure	ement (\$ in Mil.	lions)	-		-	-	-		-	-	-		-	-		-	-	-
Net Procurement (P-1) (\$ i	in Millions)		-		-	150.000	-		-	-	-		-	-		-	-	150.000
Plus CY Advance Procure	ment (\$ in Mill	ions)	-		-	-	-		-	-	-		-	-		-	-	-
Total Obligation Authorit	ty (\$ in Millions	)	-		-	150.000	-		-	-	-		-	-		-	-	150.000
	(The	following R	esource Su	mmary rows	are for info	rmational pu	urposes only.	he correspo	onding bud	get requests	s are documen	ted elsewi	here.)					
Initial Spares (\$ in Millions)			-		-	-	-		-	-	-		-	-		-	-	-
Gross/Weapon System Ur	nit Cost (\$ in N	Aillions)	-		-	-	-		-	-	-		-	-		-	-	-
		,			·				·			•	,			,		
Note: Subtotals or Totals i	n this Exhibit	P-5 may no	t be exact o	r sum exactl	y due to rou	unding.												
	P	rior Years	3		FY 2015			FY 2016		F	Y 2017 Base	•	F	Y 2017 OC	co	F'	Y 2017 To	otal
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Hardware Cost	(4)	(2001)	(4)	(\$)	(2001.)	(\$)	(\$,	(2001)	(\$)	(\$)	(2001)	(4)	(\$)	(2001)	(\$)	(0)	(2001)	(\$)
Non Recurring Cost																		_
David's Sling Weapon System Components	-	-	-	-	-	-	150.000	1	150.000	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	-	-	-	-	-	-	150.000	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	150.000	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	150.000	-	-	-	-	-	-	-	-	-
		FY 2018			FY 2019			FY 2020			FY 2021			To Comple	te		Total Cos	st
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Hardware Cost	,			'														
Non Recurring Cost																		
David's Sling Weapon System Components	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.000		1 150.000
Subtotal: Non Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.000
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.000
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150.000

LI MD34 - David's Sling Missile Defense Agency UNCLASSIFIED
Page 3 of 4

P-1 Line #27

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agen	су	Date: February 2016
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	:
Remarks: N/A		
N/A		

LI MD34 - David's Sling Missile Defense Agency UNCLASSIFIED
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P-1 Line #27

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

Date: February 2016

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

ID Code (A=Service Ready, B=Not Service Ready): B

Program Elements for Code B Items: 0603892C. 0604880C. 0604881C

Other Related Program Elements: 0604880C

Line Item MDAP/MAIS Code: 362

Item MDAP/MAIS Code(s): N/A

Line item Widar/Wai3 Code. 302	Itelli MD	AF/IVIAIS COU	ie(5). IV/A									
Resource Summary	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Procurement Quantity (Units in Each)	1	1	1	1	-	1	1	-	-	-	-	5
Gross/Weapon System Cost (\$ in Millions)	131.400	205.601	30.587	57.493	-	57.493	69.880	-	-	-	-	494.961
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	131.400	205.601	30.587	57.493	-	57.493	69.880	-	-	-	-	494.961
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	131.400	205.601	30.587	57.493	-	57.493	69.880	-	-	-	-	494.961
(The following	Resource Sumi	mary rows are fo	or informational p	urposes only. Th	ne corresponding	g budget request	s are documente	ed elsewhere.)				
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	131.400	205.601	30.587	57.493	-	57.493	69.880	-	-	-	-	98.992

### **Description:**

The increase in FY 2016 to FY 2017 accounts for installation of the Weapon system into the deckhouse. Shipment of the Aegis Weapon System to Poland as second destination transportation via the military transportation system has been moved to PE: 0604880C.

This program supports the procurement of Aegis Ashore. On 17 September 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. It will provide sophisticated engagement strategies. 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.

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

Date: February 2016

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

ID Code (A=Service Ready, B=Not Service Ready): B

Program Elements for Code B Items: 0603892C. 0604880C. 0604881C

Other Related Program Elements: 0604880C

Line Item MDAP/MAIS Code: 362

Item MDAP/MAIS Code(s): N/A

		( - )							
	Exhibits Schedule			Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title*	Subexhibits	ID CD	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)				
P-5	Aegis Ashore Poland, Equipment and Deckhouse		В	1 / 131.400	1 / 205.601	1 / 30.587	1 / 57.493	- / -	1 / 57.493
P-40	Total Gross/Weapon System Cost			1 / 131.400	1 / 205.601	1 / 30.587	1 / 57.493	- 1 -	1 / 57.493
	Exhibits Schedule			FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Exhibit Type	Title*	ID CD	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	
P-5	Aegis Ashore Poland, Equipment and Deckhouse	В	1 / 69.880	- / -	- / -	- / -	- / -	5 / 494.961	
P-40	Total Gross/Weapon System Cost		1 / 69.880	- 1 -	- 1 -	- 1 -	- 1 -	5 / 494.961	

<sup>\*</sup>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 in 2018, keep the individual components up to date with the Navy's destroyer modernization plan and install RDT&E modifications as required to enhance coexistence with Broadband Wireless Access systems in the European theater. MDA will continue to use RDT&E (PE-0604880C) funds to modernize the R&D test center in Hawaii and develop and test Aegis Ashore capability improvements at the Aegis Ashore Missile Defense Test Complex AAMDTC in Hawaii for implementation at operational sites.

FY 2015 Procured remainder of the Aegis Ashore Weapon System components, Vertical Launching System (VLS), Command, Control, Communications, Computers and Intelligence (C4I) systems, and started site preparations in Poland.

FY 2016 Start 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

P-1 Line #28

Exhibit P-5, Cost	Analysis	s: PB 20	17 Missile	e Defense	Agency									Date: Fe	ebruary 2	016		
<b>Appropriation / B</b> 0300D / 01 / 17	udget A	ctivity /	Budget S	Sub Activi	ty:		<b>Line Item</b> 73 / Aegis <i>F</i>								mber / T Ashore use			ent and
ID Code (A=Service Read	ly, B=Not Serv	ice Ready):	В						М	DAP/MAI	S Code:							
Resource S	ummary	,	Prior Years	FY 2015	5 FY 2		FY 2017 Base	FY 20 OCC	I	7 2017 Total	FY 2018	FY 20	019 F	Y 2020	FY 202	To 1 Com	-	Total
Procurement Quantity (Unit	its in Each)		1		1	1	1		-	1	,	1	-	-		-	-	:
Gross/Weapon System Co	ost (\$ in Millior	ıs)	131.400	205.60	01 3	30.587	57.493		-	57.493	69.880	)	-	-		-	-	494.96
Less PY Advance Procure	ement (\$ in Mi	llions)	-	-		-	-		-	-	-		-	-		-	-	-
Net Procurement (P-1) (\$ ii	n Millions)		131.400	205.60	01 3	30.587	57.493		-	57.493	69.880	ס	-	-		-	-	494.96
Plus CY Advance Procure	ment (\$ in Mil	lions)	-	-		-	-		-	-	-		-	-		-	-	-
Total Obligation Authorit	<b>y</b> (\$ in Millions	5)	131.400	205.60	)1 3	30.587	57.493		-	57.493	69.880	)	-	-		-	-	494.96
	(The	following F	Resource Sum	mary rows are	for informa	tional pu	ırposes only. Tl	he correspo	onding bud	get requests	are documen	ted elsewh	ere.)					
Initial Spares (\$ in Millions)			-	-		-	-		-	-	-		-	-		-	-	-
Gross/Weapon System Ur	nit Cost (\$ in I	Millions)	131.400	205.60	01 3	30.587	57.493		-	57.493	69.880	)	-	-		-	-	98.99
		'			·	<u>'</u>		,	'								'	
Note: Subtotals or Totals in	n this Exhibit	P-5 may no	ot be exact or	sum exactly d	ue to roundi	ng.												_
	F	Prior Year	s	F`	Y 2015		F	Y 2016		F	Y 2017 Base	•	F	FY 2017 OC	0	F	/ 2017 Tot	tal
Cost Elements	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost		Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	t Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
Aegis Ashore Poland, Equipment and Deckhouse	131.400	1	131.400	205.601	1	205.601	30.587	1	30.587	57.493	1	57.493	-	-	-	57.493	1	57.49
Subtotal: Recurring Cost	-	-	131.400	-	-	205.601	-	-	30.587	-	-	57.493	-	-	-	-	-	57.49
Subtotal: Flyaway Cost	-	-	131.400	-	-	205.601	-	-	30.587	-	-	57.493	-	-	-	-	-	57.49
Gross/Weapon System Cost	131.400	1	131.400	205.601	1	205.601		1	30.587	57.493	1	57.493	-	-	-	57.493	1	57.49
		FY 2018		F'	Y 2019		F	Y 2020			FY 2021			To Comple	1		Total Cost	t
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	t Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost													<u> </u>					
Aegis Ashore Poland, Equipment and Deckhouse	69.880	1	69.880	-	-	-	-	-	-	-	-	-	-	-	-	98.992	5	494.96
Subtotal: Recurring Cost	-	-	69.880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	494.96
Subtotal: Flyaway Cost	-	-	69.880	-	-	-	-	-	-	-	-	-	-	-	-	-	-	494.96
Gross/Weapon System Cost	69.880	1	69.880	_	-	_	_	_	_	_	_	_	_	_	_	98.992	5	494.96

LI MD73 - Aegis Ashore Phase III Missile Defense Agency UNCLASSIFIED
Page 3 of 4

P-1 Line #28

	UNCLASSIFIED	
Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agen	псу	Date: February 2016
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) : B	MDAP/MAIS Code:	
Remarks: FY 2015 Procure remainder of the Aegis Ashore Weapon System components Ashore Deckhouse structure. Start site preparations in Poland. FY 2016 Start site activation and assembly of Aegis Ashore Deckhouse street 2017 Install Aegis Ashore Weapon System in the Aegis Ashore Deckhouse FY 2018 Conduct final configuration test validation.	ructure in Poland.	ommunications, Computers and Intelligence (C4I) systems, and Aegis

LI MD73 - Aegis Ashore Phase III Missile Defense Agency UNCLASSIFIED
Page 4 of 4

P-1 Line #28

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

MD83 / Iron Dome

Equipment, Missile Defense Agency

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

Item MDAP/MAIS Code(s): N/A

Line Item MDAP/MAIS Code: 362	item MD	AP/IVIAIS Cod	ie(s): N/A									
Resource Summary	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Procurement Quantity (Units in Each)	3	1	1	1	-	1	-	-	-	-	-	6
Gross/Weapon System Cost (\$ in Millions)	843.658	350.972	55.000	42.000	-	42.000	-	-	-	-	-	1,291.630
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	843.658	350.972	55.000	42.000	-	42.000	-	-	-	-	-	1,291.630
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	843.658	350.972	55.000	42.000	-	42.000	-	-	-	-	-	1,291.630
(The following	Resource Sumi	mary rows are fo	or informational p	urposes only. Th	ne corresponding	g budget request	s are documente	ed elsewhere.)	•			
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	281.219	350.972	55.000	42.000	-	42.000	-	-	-	-	-	215.272

## **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.

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

Date: February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

MD83 / Iron Dome

Equipment, Missile Defense Agency

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

Item MDAP/MAIS Code(s): N/A

	Exhibits Schedule			Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title* Sut	bexhibits	ID CD	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)				
P-5	Iron Dome		Α	3 / 843.658	1 / 350.972	1 / 55.000	1 / 42.000	- / -	1 / 42.000
P-40	Total Gross/Weapon System Cost			3 / 843.658	1 / 350.972	1 / 55.000	1 / 42.000	- 1 -	1 / 42.000
	Exhibits Schedule			FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Exhibit Type	Title* Sub	bexhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)					
P-5	Iron Dome		Α	- / -	- / -	- / -	- / -	- / -	6 / 1,291.630
P-40	Total Gross/Weapon System Cost			- 1 -	- 1 -	- 1 -	- 1 -	- 1 -	6 / 1,291.630

<sup>\*</sup>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.

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency Date: February 2016 Appropriation / Budget Activity / Budget Sub Activity: Item Number / Title [DODIC]: P-1 Line Item Number / Title: 0300D / 01 / 17 MD83 / Iron Dome - I Iron Dome MDAP/MAIS Code: ID Code (A=Service Ready, B=Not Service Ready): A FY 2017 FY 2017 FY 2017 Prior To **Resource Summary** Years FY 2015 **FY 2016** Base OCO **Total FY 2018** FY 2019 **FY 2020** FY 2021 Complete Total 3 Procurement Quantity (Units in Each) Gross/Weapon System Cost (\$ in Millions) 843.658 350.972 55.000 42.000 42.000 1,291.630 Less PY Advance Procurement (\$ in Millions) Net Procurement (P-1) (\$ in Millions) 843.658 350.972 42.000 42.000 1,291.630 55.000 \_ Plus CY Advance Procurement (\$ in Millions) Total Obligation Authority (\$ in Millions) 843.658 350.972 55.000 42.000 42.000 1.291.630 (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) 281.219 42.000 215.272 350.972 55.000 42.000 Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding. FY 2015 **FY 2016 FY 2017 Base FY 2017 OCO** FY 2017 Total **Prior Years** Total Total Total Total Total Total Qty **Unit Cost** Qty Cost **Unit Cost** Cost **Unit Cost** Qty Cost **Unit Cost** Qty Cost **Unit Cost** Qty Cost **Unit Cost** Qty Cost **Cost Elements** (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (\$ M) Hardware Cost Recurring Cost Iron Dome 281.219 3 843.658 350.972 350.972 55.000 55.000 42.000 42.000 42.000 42.000 1 Subtotal: Recurring Cost 843.658 350.972 55.000 42.000 42.000 Subtotal: Hardware Cost \_ 843.658 -350.972 \_ 55.000 -42.000 \_ \_ 42.000 Gross/Weapon System 281.219 843.658 350.972 350.972 55.000 55.000 42.000 42.000 42.000 42.000 Cost FY 2018 FY 2019 FY 2020 FY 2021 **Total Cost** To Complete Total Total Total Total Total Total **Unit Cost Unit Cost** Qty **Unit Cost** Cost **Unit Cost Unit Cost** Qty **Unit Cost** Qty Qty Cost Cost Qty Qty Cost Cost Cost **Cost Elements** (\$ M) (\$ M) (\$ M) (Each) (\$ M) (\$ M) (Each) (Each) (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (\$ M) (Each) (\$ M) (\$ M) Hardware Cost Recurring Cost Iron Dome 215.272 6 1,291.630 Subtotal: Recurring Cost 1.291.630 \_ ----\_ --Subtotal: Hardware Cost 1,291.630 \_ \_ \_ Gross/Weapon System 215.272 1.291.630 Cost Remarks: Quantities are classified. The unit quantity of one is used as a proxy in each Fiscal Year with funding.

LI MD83 - Iron Dome Missile Defense Agency UNCLASSIFIED
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P-1 Line #29



Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

Appropriation / Budget Activity / Budget Sub Activity:

P-1 Line Item Number / Title:

0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major

MD90 / Aegis BMD Hardware and Software

Equipment, Missile Defense Agency 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	Item MD	AP/MAIS Cod	le(s): N/A									
	Prior			FY 2017	FY 2017	FY 2017	->//-	->//-	->/	=>/.000/	То	
Resource Summary	Years	FY 2015	FY 2016	Base	oco	Total	FY 2018	FY 2019	FY 2020	FY 2021	Complete	Total
Procurement Quantity (Units in Each)	-	-	26	6	-	6	17	11	14	9	-	83
Gross/Weapon System Cost (\$ in Millions)	-	-	145.300	50.098	-	50.098	139.502	93.184	122.025	85.987	-	636.096
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	145.300	50.098	-	50.098	139.502	93.184	122.025	85.987	-	636.096
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	145.300	50.098	-	50.098	139.502	93.184	122.025	85.987	-	636.096
(The following	Resource Sum	mary rows are fo	or informational p	ourposes only. Th	ne corresponding	g budget request	s are documente	ed elsewhere.)				
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	5.588	8.350	-	8.350	8.206	8.471	8.716	9.554	-	7.664

## **Description:**

Beginning in FY 2016, the MD90 Aegis BMD Hardware and Software line item was created in accordance with the FY 2016 Omnibus; funds transferred from MD09 Aegis BMD.

A shipset consists of the procurement of cabinets, cabling, equipment, and other material required for the installation of the ABMD baselines on a ship. Upgrading the 3.6 and 4.0 shipsets to 4.x adds capability and capacity in support of the European Phased Adaptive Approach (EPAA), Phase II requirements. Upgrading the 5.x shipsets adds capability and capacity in support of achieving the European Phased Adaptive Approach (EPAA). Phase III requirements.

Exhibit P-40, Budget Line Item Justification: PB 2017 Missile Defense Agency

**Date:** February 2016

Appropriation / Budget Activity / Budget Sub Activity:

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

MD90 / Aegis BMD Hardware and Software

P-1 Line Item Number / Title:

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

Item MDAP/MAIS Code(s): N/A

	Exhibits Schedule			Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Exhibit Type	Title*	Subexhibits	ID CD	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)				
P-5	Aegis BMD Shipsets	P-5a, P-21	Α	- / -	- / -	26 / 145.300	6 / 50.098	- / -	6 / 50.098
P-40	Total Gross/Weapon System Cost			- 1 -	- 1 -	26 / 145.300	6 / 50.098	- 1 -	6 / 50.098
								'	· · · · · · · · · · · · · · · · · · ·
	Exhibits Schedule			FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Exhibit Type	Exhibits Schedule  Title*	Subexhibits	ID CD	FY 2018  Quantity / Total Cost (Each) / (\$ M)	FY 2019  Quantity / Total Cost (Each) / (\$ M)	FY 2020  Quantity / Total Cost (Each) / (\$ M)	FY 2021  Quantity / Total Cost (Each) / (\$ M)	To Complete  Quantity / Total Cost (Each) / (\$ M)	Total  Quantity / Total Cost (Each) / (\$ M)
1		Subexhibits P-5a, P-21		Quantity / Total Cost	Quantity / Total Cost				

<sup>\*</sup>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

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

P-1 Line Item Number / Title:

MD90 / Aegis BMD Hardware and Software

- / Aegis BMD Shipsets

									-5	- 1-		
ID Code (A=Service Ready, B=Not Service Ready)	: A					MDAP/MA	IS Code:					
Resource Summary	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Procurement Quantity (Units in Each)	-	-	26	6	-	6	17	11	14	9	-	83
Gross/Weapon System Cost (\$ in Millions)	-	-	145.300	50.098	-	50.098	139.502	93.184	122.025	85.987	-	636.096
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	145.300	50.098	-	50.098	139.502	93.184	122.025	85.987	-	636.096
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	145.300	50.098	-	50.098	139.502	93.184	122.025	85.987	-	636.096
(The following	g Resource Sum	mary rows are fo	or informational p	ourposes only. Th	e corresponding	budget request	s are documente	ed elsewhere.)	i			
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	- 1
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	5.588	8.350	-	8.350	8.206	8.471	8.716	9.554	-	7.664

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

	P	rior Years	S		FY 2015			FY 2016		F۱	/ 2017 Bas	se	FY	/ 2017 OC	:0	F	/ 2017 Tot	tal
Cost Elements	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
Hardware Cost			·	<u>'</u>		·		'		'			'		·	'		
Recurring Cost																		
Aegis BMD 3.6 to 4.x Hardware Procurements <sup>(†)</sup>	-	-	-	-	-	-	18.000	4	72.000	17.875	1	17.875	-	-	-	17.875	1	17.8
Aegis BMD 3.6 to 4.x Installs <sup>(†)</sup>	-	-	-	-	-	-	18.800	2	37.600	18.800	1	18.800	-	-	-	18.800	1	18.8
Aegis BMD 5.3.x/SPY Refurbishment Installs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aegis BMD 5.3.x/ SPY Refurbishment Procurements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aegis BMD 9.C1 (5.0 CU) Installs	-	-	-	-	-	-	1.400	1	1.400	-	-	-	-	-	-	-	-	
Aegis BMD 9C.2 (5.x) BackFit Installs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aegis BMD 9C.2 (5.x) BackFit Procurement <sup>(†)</sup>	-	-	-	-	-	-	2.009	11	22.097	2.800	2	5.600	-	-	-	2.800	2	5.6
Aegis BMD 9C.2 (5.x) BackFit Procurement Modification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aegis BMD 9C.2 (5.x) Inline Installs <sup>(†)</sup>	-	-	-	-	-	-	-	-	-	3.310	1	3.310	-	-	-	3.310	1	3.3

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Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency Date: February 2016 Appropriation / Budget Activity / Budget Sub Activity: Item Number / Title [DODIC]: P-1 Line Item Number / Title: 0300D / 01 / 17 MD90 / Aegis BMD Hardware and Software - / 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. FY 2015 FY 2016 **FY 2017 Base FY 2017 OCO** FY 2017 Total **Prior Years** Total Total Total Total Total Total **Unit Cost** Qtv Cost **Unit Cost** Qtv Cost **Unit Cost** Qtv Cost **Unit Cost** Qtv Cost Unit Cost Qtv Cost **Unit Cost** Qtv Cost **Cost Elements** (\$ M) (Each) (\$ M) Aegis BMD 9C.2 (5.x) 4.502 9.003 4.513 4.513 4.513 4.513 Inline Procurements(†) Subtotal: Recurring Cost 142.100 50.098 50.098 Subtotal: Hardware Cost 142.100 50.098 50.098 Software Cost Recurring Cost Aegis BMD 4.0 to 4.x 0.533 3.200 6 Software Installs Subtotal: Recurring Cost 3.200 -Subtotal: Software Cost 3.200 Gross/Weapon System 26 5.588 145.300 8.350 50.098 8.350 50.098 Cost **FY 2018** FY 2019 **FY 2020** FY 2021 **Total Cost** To Complete Total Total Total Total Total Total **Unit Cost** Qty **Unit Cost Unit Cost** Qty Qty Qty Cost **Unit Cost** Cost **Unit Cost** Qty Cost Qty Cost Cost **Unit Cost** Cost Cost Elements (\$ M) (\$ M) (\$ M) (\$ M) (Each) (Each) (\$ M) (\$ M) (Each) Hardware Cost Recurring Cost Aegis BMD 3.6 to 4.x Hardware 17.875 35.750 17.875 35.750 17.875 35.750 17.920 11 197.125 Procurements(†) Aegis BMD 3.6 to 4.x 37.458 12 18.761 75.042 18.729 18.575 18.575 18.774 2 37.547 18.752 225.022 Installs<sup>(†)</sup> Aegis BMD 5.3.x/SPY 5.225 5.225 5.225 5.225 Refurbishment Installs Aegis BMD 5.3.x/ SPY Refurbishment 44.646 44.646 22.059 22.059 33.353 66.705 Procurements Aegis BMD 9.C1 (5.0 1.400 1.400 CU) Installs Aegis BMD 9C.2 (5.x) 2.553 6 15.315 2.400 9.600 2.258 9.030 2.425 14 33.945 BackFit Installs Aegis BMD 9C.2 (5.x) BackFit 2 800 2.800 2 178 14 30.497 Procurement(†) Aegis BMD 9C.2 (5.x) BackFit Procurement 0.285 0.285 0.285 2 0.570 0.285 3 0.855 Modification

LI MD90 - Aegis BMD Hardware and Software Missile Defense Agency

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P-1 Line #30

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agency Date: February 2016 Appropriation / Budget Activity / Budget Sub Activity: Item Number / Title [DODIC]: P-1 Line Item Number / Title: 0300D / 01 / 17 MD90 / Aegis BMD Hardware and Software - / Aegis BMD Shipsets

ID Code (A=Service Read	ly, B=Not Servi	ice Ready):	Д						MI	DAP/MAIS	Code:							
		FY 2018			FY 2019			FY 2020	,		FY 2021		Te	o Complet	te	-	Total Cost	
Cost Elements	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Aegis BMD 9C.2 (5.x) Inline Installs <sup>(†)</sup>	1.512	1	1.512	1.512	1	1.512	1.512	2	3.024	1.512	2	3.024	-	-	-	1.769	7	12.382
Aegis BMD 9C.2 (5.x) Inline Procurements <sup>(†)</sup>	4.399	2	8.798	4.432	2	8.864	5.215	2	10.430	6.044	3	18.132	-	-	-	4.978	12	59.740
Subtotal: Recurring Cost	-	-	139.502	-	-	93.184	-	-	122.025	-	-	85.987	-	-	-	-	-	632.896
Subtotal: Hardware Cost	-	-	139.502	-	-	93.184	-	-	122.025	-	-	85.987	-	-	-	-	-	632.89
Software Cost																		
Recurring Cost																		
Aegis BMD 4.0 to 4.x Software Installs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.533	6	3.200
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.200
Subtotal: Software Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.200
Gross/Weapon System	8.206	17	139.502	8.471	11	93.184	8.716	14	122.025	9.554	9	85.987	-	-	-	7.664	83	636.096

#### Remarks:

Beginning in FY 2016, funds transferred from MD09 "Aegis BMD" to the newly created MD90 "Aegis BMD Hardware and Software" line item in accordance with the FY 2016 Omnibus.

BMD 3.6 to 4.x Hardware Procurements consist of material necessary to upgrade an existing BMD 3.6 shipset with advanced BMD 4.x capability (Aegis BMD 4.x weapon system, Vertical Launching System delta hardware, Communication hardware, and various installation material (steel, aluminum, piping, etc.)

Aegis BL 9.C2 Inline Procurements consist of BMD unique hardware to upgrade a non-BMD ship to full BMD 5.1

Aegis BL 9.C2 Backfit Procurements consist of an Aegis weapon system, command/control/communication and Vertical Launching System hardware necessary to upgrade a 9.C1 shipset to 9.C2 Aegis BL 9.C2 Backfit Procurement modification kits consist of hardware necessary to upgrade new construction DDGs 116, 117, and 118 to BMD 5.1 being that 116-118 have some BMD 5.1 compatible hardware installed in initial construction

Aegis BL 5.3.x/SPY Refurbishment Procurements and Installs include hardware and support necessary to procure and upgrade/refurbish SPY antennas on BMD 4.x configured FLT I/II DDGs

#### Shipset Procurements:

FY 2017

Consists of 1 BMD 3.6 to 4.x Hardware Procurement

Consists of 1 Aegis BL 9C.2 (5.x) Inline Procurement

Consists of 2 Aegis BL 9C.2 (5.x) Backfit Procurements

FY 2018<sup>-</sup>

Consists of 2 BMD 3.6 to 4.x Hardware Procurements

Consists of 2 Aegis BL 9C.2 (5.x) Inline Procurements

Consists of 1 Aegis BL 9C.2 (5.x) Backfit Procurement

Consists of 1 Aegis BL 9C.2 (5.x) Backfit Procurement Modification

FY 2019:

Exhibit P-5, Cost Analysis: PB 2017 Missile Defense Agend	су	Date: February 2016
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:	

ID Code (A=Service Ready, B=Not Service Ready): A

Consists of 2 BMD 3.6 to 4.x Hardware Procurements

Consists of 2 Aegis BL 9C.2 (5.x) Inline Procurements

#### FY 2020:

Consists of 2 BMD 3.6 to 4.x Hardware Procurements

Consists of 2 Aegis BL 9C.2 (5.x) Inline Procurements

Consists of 2 Aegis BL 9C.2 (5.x) Backfit Procurement Modifications

Consists of 1 Aegis BL 5.3.x/SPY Refurbishment Hardware Procurement (Shipset of AN/SPY SPY-1D Antennas (QTY 4) necessary to populate refurbishment rotatable pool)

#### FY 2021:

Consists of 3 Aegis BL 9C.2 (5.x) Inline Procurements

Consists of 1 Aegis BMD 5.3.x/SPY Refurbishment Hardware Procurement

### Shipset Installs:

### FY 2017:

Consists of 1 Aegis BMD 3.6 to 4.x Hardware Install

Consists of 1 Aegis BL 9.C2 (5.x) Inline Install; Installation cost on DDG 80 in FY17 is higher than follow-on ships due to changes in the Modernization Configuration. In Nov 2015, IWS1 MPM approved a configuration change on DDG 80 from Aegis BL 9.C1 to Aegis BL 9.C2. DDG 80 shipset was procured in FY15 as a 9.C1 shipset. DDG 80 will require both the 9.C1 base kit and the 9.C2 backfit kit, which will be installed separately during the year of execution. All follow-on 9.C2 in-line ships will receive the full-up 9.C2 inline kit with only one installation cost.

#### FY 2018:

Consists of 4 Aegis BMD 3.6 to 4.x Hardware Installs

Consists of 1 Aegis BL 9C.2 (5.x) Inline Install

Consists of 6 Aegis BL 9C.2 (5.x) Backfit Installs

#### FY 2019<sup>-</sup>

Consists of 2 Aegis BMD 3.6 to 4.x Hardware Installs

Consists of 1 Aegis BL 9C.2 (5.x) Inline Install

Consists of 4 Aegis BL 9C.2 (5.x) Backfit Installs

#### FY 2020.

Consists of 1 Aegis BMD 3.6 to 4.x Hardware Install

Consists of 2 Aegis BL 9C.2 (5.x) Inline Installs

Consists of 4 Aegis BL 9C.2 (5.x) Backfit Installs

#### FY 2021:

Consists of 2 Aegis BMD 3.6 to 4.x Hardware Installs

Consists of 2 Aegis BL 9C.2 (5.x) Inline Installs

Consists of 1 Aegis BMD 5.3.x/SPY Refurbishment Install

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:

- / Aegis BMD Shipsets

	0		·	Method/Type or		Award	Date of First	Qty	Unit Cost	Specs Avail	Date Revision	RFP Issue
Cost Elements	0	FY	Contractor and Location	Funding Vehicle	Location of PCO	Date	Delivery	(Each)	(\$ M)	Now?	Available	Date
Aegis BMD 3.6 to 4.x Hardware Procurements		2017	Raytheon / Norfolk, VA	SS / FFP	Washington, D.C.	Feb 2017	Aug 2018	-	0.980	Y		Jul 2016
Aegis BMD 3.6 to 4.x Hardware Procurements <sup>(†)</sup>		2017	Lockheed Martin / Morristown, NJ	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 / Morristown, NJ	SS / CPIF	Dahlgren, VA	Jan 2017	Jun 2018	1	9.100	Υ		May 2016
Aegis BMD 9C.2 (5.x) BackFit Procurement <sup>(†)</sup>		2017	Lockheed Martin / Morristown, NJ	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	2	2.800	Y		Jul 2016
Aegis BMD 9C.2 (5.x) Inline Installs <sup>(†)</sup>		2017	Lockheed Martin / Morristown, NJ	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	1	3.310	Y		Jul 2016
Aegis BMD 9C.2 (5.x) Inline Procurements <sup>(†)</sup>		2017	Lockheed Martin / Morristown, NJ	SS / FPIF	Washington, D.C.	May 2017	Nov 2018	1	3.913	Y		Jul 2016
Aegis BMD 9C.2 (5.x) Inline Procurements		2017	Raytheon / Norfolk, VA	SS / FFP	Washington, D.C.	May 2017	Nov 2018	-	0.600	Y		Jul 2016

 $<sup>^{(\</sup>dagger)}$  indicates the presence of a P-21

Ex	chik	oit F	P-21, Pro	oduct	ion Sc	hedu	le: PE	3 201	7 Mis	sile D	efens	se Age	ency											Date	: Feb	ruary	2016	<b>i</b>			
	-	-	<b>iation</b> / 1 01 / 17	Budge	et Acti	ivity /	Budç	get Sı	ub Ac	tivity	<b>':</b>	1		e Item Aegis					oftwa	ire					Num egis E				IC]:		
				lements in Each)		,						Fiscal Y	ear 201	7										Fiscal Y	ear 2018						В
					ACCEPT									C	alendar	Year 20	17								Caler	dar Year	2018				L
0 C 0	M F R #	FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	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	n n	A U G	S E P	0 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	A N C E
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Appropriation / Budget Activity / Budget Sub Activity:    D300D / 01 / 17	xhibit P	2-21, Pro	oducti	on Sc	hedul	e: PE	3 201	7 Mis	sile De	efens	e Ag	ency											Date	: Feb	ruary	2010	6		
Continue   Fiscal Year 2019			Budge	t Acti	vity /	Budg	jet Sı	ub Ac	tivity	:								Softwa	are									OIC]:	
PRIOR   PRIO											Fiscal '	Year 201	9										Fiscal Y	ear 2020					
D							Calenda	r Year 20	)19								Calen	dar Year	r 2020										
1 2017   MDA	F R	SERVICE		TO 1 OCT	DUE AS OF	C	0	E	A	E	Α	P	Α			U	E	С	0	E	A	E	Α	P	Α	Ü	U	U	E
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Exhibit P-21, Production Schedule: PB 2017 Missile Defense Agency

Appropriation / Budget Activity / Budget Sub Activity:

0300D / 01 / 17

Date: February 2016

Item Number / Title [DODIC]:
- / Aegis BMD Shipsets

		Produc	tion Rates (Each /	Month)				Procurement Le	adtime (Months)			
MFR						Ini	tial			Red	order	
Ref #		MSR For 2017	1-8-5 For 2017	MAX For 2017	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 - Morristown, NJ	1	1	1	-	-	-	-	-	-	-	-
2	Lockheed Martin - Morristown, NJ	1	1	2	-	-	-	-	-	-	-	-
3	Lockheed Martin - Morristown, NJ	1	1	1	-	-	-	-	-	-	-	-
4	Lockheed Martin - Morristown, NJ	1	1	1	-	-	-	-	-	-	-	-

<sup>&</sup>quot;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 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).