# Department of Defense Fiscal Year (FY) 2020 Budget Estimates

March 2019



# **Missile Defense Agency**

Defense-Wide Justification Book Volume 2b of 2

# Procurement, Defense-Wide

(Includes O&M and MILCON)

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Missile Defense Agency • Budget Estimates FY 2020 • Procurement

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# **Introduction & Explanation of Contents**

The Department of Defense Fiscal Year (FY) 2020 Budget Estimates Submission 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 2020 Budget Estimates Overview
- MDA Appropriation Summary
- Acronyms
- RDT&E Exhibits in BA-03, BA-04, and BA-06

## Volume 2b

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

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Volume 2b - vi

#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

Appropriation	FY 2018 (Base + OCO)	FY 2019 Base Enacted	FY 2019 OCO Enacted	FY 2019 Total Enacted
Procurement, Defense-Wide	3,052,841	2,572,400		2,572,400
Total Defense-Wide	3,052,841	2,572,400		2,572,400

P-120PB: FY 2020 President's Budget (Published Version), as of March 11, 2019 at 12:38:18



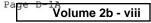
#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

FY 2020

Appropriation	FY 2020 Base	FY 2020 OCO for Base Requirements	OCO for Direct War and Enduring Costs	FY 2020 Total OCO
Procurement, Defense-Wide	1,493,793			
Total Defense-Wide	1,493,793			

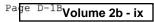
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#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

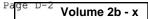
Appropriation	FY 2020 Total (Base + OCO)
Procurement, Defense-Wide	1,493,793
Total Defense-Wide	1,493,793



#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

Organization: Procurement, Defense-Wide	FY 2018 (Base + OCO)	FY 2019 Base Enacted	FY 2019 OCO Enacted	FY 2019 Total Enacted
Missile Defense Agency, MDA	3,052,841	2,572,400		2,572,400
Total	3,052,841	2,572,400		2,572,400



#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

Organization: Procurement, Defense-Wide	FY 2020 Base	FY 2020 OCO for Base Requirements	FY 2020 OCO for Direct War and Enduring Costs	FY 2020 Total OCO
Missile Defense Agency, MDA	1,493,793			
Total	1,493,793			

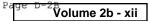
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#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

Organization: Procurement, Defense-Wide	FY 2020 Total (Base + OCO)
Missile Defense Agency, MDA	1,493,793
Total	1,493,793

P-120PB: FY 2020 President's Budget (Published Version), as of March 11, 2019 at 12:38:18



#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

#### Appropriation: Procurement, Defense-Wide

Budget Activity	FY 2018 (Base + OCO)	FY 2019 Base Enacted	FY 2019 OCO Enacted	FY 2019 Total Enacted
01. Major Equipment	3,052,841	2,572,400		2,572,400
Total Procurement, Defense-Wide	3,052,841	2,572,400		2,572,400



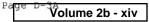
#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: Procurement, Defense-Wide

11 Mar 2019

Budget Activity	FY 2020 Base	FY 2020 OCO for Base Requirements	FY 2020 OCO for Direct War and Enduring Costs	FY 2020 Total OCO
01. Major Equipment	1,493,793			
Total Procurement, Defense-Wide	1,493,793			

P-120PB: FY 2020 President's Budget (Published Version), as of March 11, 2019 at 12:38:18



#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

Budget Activity	FY 2020 Total (Base + OCO)
01. Major Equipment	1,493,793
Total Procurement, Defense-Wide	1,493,793

Appropriation: Procurement, Defense-Wide

P-120PB: FY 2020 President's Budget (Published Version), as of March 11, 2019 at 12:38:18



11 Mar 2019

#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

11 Mar 2019

Appropriation: 0300D Procurement, Defense-Wide

Line No Item Nomenclature  Budget Activity 01: Major Equipment	Ident Code				-	FY 2019 OCO Enacted Quantity Cost		-	S e C
Major Equipment, Missile Defense Agency									
28 THAAD		100	1 105 500						
20 INAAD	В	109	1,125,732	96	1,014,068		96	1,014,068	U
29 Ground Based Midcourse Less: Advance Procurement (PY)	A	10	(180,000)	16	(505,600) (-88,000)		16	(505,600) (-88,000)	U
			180,000		417,600			417,600	
<pre>30 Ground Based Midcourse Advance Procurement (CY) C (FY 2018 for FY 2019) (M) C (FY 2019 for FY 2020) (M)</pre>			88,000 (88,000)		115,000 (115,000)			115,000 (115,000)	
31 Aegis BMD	В	64	1,083,353	44	700,490		44	700,490	U
32 Aegis BMD Advance Procurement (CY) C (FY 2020 for FY 2021) (M) C (FY 2020 for FY 2022) (M) C (FY 2020 for FY 2023) (M)									U
33 BMDS AN/TPY-2 Radars	A		11,947		13,185			13,185	U
34 Arrow 3 Upper Tier Systems	A	1	120,000	1	80,000		1	80,000	U
35 Short Range Ballistic Missile Defense (SRBMD)	A	1	120,000	1	50,000		1	50,000	U
36 Aegis Ashore Phase III	В	1	74,739	1	15,000		1	15,000	U
37 Iron Dome	A	1	92,000	1	70,000		1	70,000	U

#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 0300D Procurement, Defense-Wide

11 Mar 2019

Line No Item Nomenclature 	Ident Code	F Quanti 		FY 2020 OCO for Base Requirements Quantity Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity Cost	FY 2020 Total S OCO e Quantity Cost c
Major Equipment, Missile Defense Agency						
28 THAAD	В	37	425,863			U
29 Ground Based Midcourse Less: Advance Procurement (PY)	A		(124,471) (-115,000)  9,471			ט ט
<pre>30 Ground Based Midcourse Advance Procurement (CY) C (FY 2018 for FY 2019) (M) C (FY 2019 for FY 2020) (M)</pre>						U
31 Aegis BMD	В	37	600,773			U
<pre>32 Aegis BMD Advance Procurement (CY) C (FY 2020 for FY 2021) (M) C (FY 2020 for FY 2022) (M) C (FY 2020 for FY 2023) (M)</pre>			96,995 (46,024) (29,920) (21,051)			U
33 BMDS AN/TPY-2 Radars	A		10,046			U
34 Arrow 3 Upper Tier Systems	A	1	55,000			U
35 Short Range Ballistic Missile Defense (SRBMD)	A	1	50,000			U
36 Aegis Ashore Phase III	В	1	25,659			U
37 Iron Dome	A	1	95,000			U

#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

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

Line No Item Nomenclature	Ident Code	(Ba	TY 2020 Total ase + OCO) ty Cost	S e C
Budget Activity 01: Major Equipment				
Major Equipment, Missile Defense Agency				
28 THAAD	В	37	425,863	U
29 Ground Based Midcourse Less: Advance Procurement (PY)	А		(124,471) (-115,000)	
			9,471	
30 Ground Based Midcourse Advance Procurement (CY) C (FY 2018 for FY 2019) (M) C (FY 2019 for FY 2020) (M)				U
31 Aegis BMD	В	37	600,773	U
<pre>32 Aegis BMD Advance Procurement (CY) C (FY 2020 for FY 2021) (M) C (FY 2020 for FY 2022) (M) C (FY 2020 for FY 2023) (M)</pre>			96,995 (46,024) (29,920) (21,051)	
33 BMDS AN/TPY-2 Radars	A		10,046	U
34 Arrow 3 Upper Tier Systems	A	1	55,000	U
35 Short Range Ballistic Missile Defense (SRBMD)	A	1	50,000	U
36 Aegis Ashore Phase III	В	1	25,659	U
37 Iron Dome	A	1	95,000	U

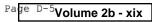
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#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

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

Line No Item Nomenclature	Ident Code		2018 + OCO) Cost	FY 2 Base H Quantity	2019 Enacted Cost	FY 20 OCO Ena Quantity	FY 20 Total En Quantity		S e C
							 		-
38 Aegis BMD Hardware and Software	A	22	157,070	28	97,057			97,057	
Total Major Equipment			,052,841	2,	572,400			572,400	
Total Procurement, Defense-Wide			,052,841		572,400			572,400	2



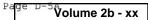
#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

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

11 Mar 2019

Line	Ident	FY 2 Ba		FY 20 OCO for Require	Base	FY 20 OCO f Direct and End Cost	or War uring	FY 20 Tota OCO	l	S
No Item Nomenclature	Code	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	С
										-
38 Aegis BMD Hardware and Software Total Major Equipment	A		124,986  493,793							U -
Total Procurement, Defense-Wide			493,793							-

P-120PB: FY 2020 President's Budget (Published Version), as of March 11, 2019 at 12:38:18



#### Defense-Wide FY 2020 President's Budget Exhibit P-1 FY 2020 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 0300D Procurement, Defense-Wide

		FY :	2020	
		То	tal	S
Line	Ident	(Base	+ OCO)	е
No Item Nomenclature	Code	Quantity	Cost	С
				-
38 Aegis BMD Hardware and Software	A	36	124,986	U
Total Major Equipment			,493,793	
Total Procurement, Defense-Wide			,493,793	

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

Appropriation 0300D: Procurement, Defense-Wide

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28	01	17	MD07	THAADVolume 2b - 1
29	01	17	MD08	Ground Based Midcourse Volume 2b - 21
30	01	17	MD08	Ground Based Midcourse, Advance Procurement
31	01	17	MD09	AEGIS BMDVolume 2b - 41
32	01	17	MD09	AEGIS BMD, Advance Procurement Volume 2b - 59
33	01	17	MD11	BMDS Sensors
34	01	17	MD26	Arrow 3 Upper Tier System Volume 2b - 83
35	01	17	MD34	Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weapon System (DSWS) Volume 2b - 87
36	01	17	MD73	Aegis Ashore Phase IIIVolume 2b - 91
37	01	17	MD83	Iron Dome Volume 2b - 95
38	01	17	MD90	Aegis BMD Hardware and SoftwareVolume 2b - 99

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## Missile Defense Agency • Budget Estimates FY 2020 • Procurement

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

Line Item Title	Line Item Number	Line #	BA	BSA Page
AEGIS BMD	MD09	31	01	17 Volume 2b - 41
AEGIS BMD, Advance Procurement	MD09	32	01	17 Volume 2b - 59
Aegis Ashore Phase III	MD73	36	01	17 Volume 2b - 91
Aegis BMD Hardware and Software	MD90	38	01	17 Volume 2b - 99
Arrow 3 Upper Tier System	MD26	34	01	17 Volume 2b - 83
BMDS Sensors	MD11	33	01	17 Volume 2b - 63
Ground Based Midcourse	MD08	29	01	17 Volume 2b - 21
Ground Based Midcourse, Advance Procurement	MD08	30	01	17 Volume 2b - 33
Iron Dome	MD83	37	01	17 Volume 2b - 95
Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weapon System (DSWS)	MD34	35	01	17 Volume 2b - 87
THAAD	MD07	28	01	17 Volume 2b - 1

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# Fiscal Year (FY) 2020 President's Budget

Operation and Maintenance, Defense-Wide Missile Defense Agency



March 2019

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### MISSILE DEFENSE AGENCY Operation and Maintenance, Defense-Wide Fiscal Year (FY) 2020 President's Budget

Appropriation Summary	FY 2018	Price	Program	FY 2019	Price	Program	FY 2020
	<u>Actuals</u>	<u>Change</u>	<u>Change</u>	Enacted	<u>Change</u>	<u>Change</u>	<u>Estimate</u>
O&M, Defense-Wide	\$491.2	\$8.8	\$-27.5	\$472.5	\$9.4	\$40.6	\$522.5

#### Description of Operations Financed:

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

PBA-19 Exhibit, Introductory Statement (PBA-19, Appropriation Highlights) MDA-1

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### MISSILE DEFENSE AGENCY Operation and Maintenance, Defense-Wide Fiscal Year (FY) 2020 President's Budget

	FY 2018 <u>Actuals</u>	FY 2019 <u>Enacted</u>	FY 2020 <u>Estimate</u>
4. Administrative and Servicewide Activities	491,179	472,473	522,529
Aegis BMD Program	74,208	78,074	75,237
BMDS Radars Program	208,176	167 <b>,</b> 635	194,255
Ground-Based Midcourse Program	138,751	139,204	153,218
THAAD Program	70,044	87,560	99,819
Total Operation and Maintenance, Defense-Wide	491,179	472,473	522,529

O-1 Exhibit, O&M Funding by Budget Activity/Activity Group/Subactivity Group MDA-3

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	FY 2018 <u>Actuals</u>	FY 2019 <u>Enacted</u>	FY 2020 <u>Estimate</u>
4. Administrative and Servicewide Activities	491,179	472,473	522,529
Aegis BMD Program	74,208	78,074	75,237
BMDS Radars Program	208,176	167 <b>,</b> 635	194,255
Ground-Based Midcourse Program	138,751	139,204	153,218
THAAD Program	70,044	87,560	99,819
Total Operation and Maintenance, Defense-Wide		472,473	522,529

O-1A Exhibit, O&M Funding by Budget Activity/Activity Group/Subactivity Group MDA-5

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		FY 2018 Program	Price Growth <u>Percent</u>	Price <u>Growth</u>	Program <u>Growth</u>	FY 2019 Program	Price Growth <u>Percent</u>	Price <u>Growth</u>	Program <u>Growth</u>	FY 2020 Program
	Travel									
308	Travel of Persons	188	1.80%	3	-191	0	2.00%	0	220	220
399	Total Travel	188		3	-191	0		0	220	220
	Supplies & Materials									
401	DLA Energy (Fuel Products)	0	-0.40%	0	700	700	-0.67%	-5	151	846
499	Total Supplies & Materials	0		0	700	700		-5	151	846
	DWCF Purchases									
677	DISA Telecomm Svcs - Reimbursable	2,425	1.90%	46	-2,471	0	2.00%	0	0	0
699	Total DWCF Purchases	2,425		46	-2,471	0		0	0	0
	<u>Transportation</u>									
771	Commercial Transport	4,452	1.80%	80	1,366	5,898	2.00%	118	-2,421	3,595
799	Total Transportation	4,452		80	1,366	5,898		118	-2,421	3,595
	Other Purchases									
912	Rental Payments to GSA (SLUC)	0	1.80%	0	253	253	2.00%	5	-10	248
913	Purchased Utilities (Non-	2,269	1.80%	41	24	2,334	2.00%	47	41	2,422
914	Fund) Purchased Communications (Non-Fund)	83	1.80%	1	666	750	2.00%	15	1,768	2,533
915	Rents (Non-GSA)	1,226	1.80%	22	-1,248	0	2.00%	0	0	0
920	Supplies & Materials (Non- Fund)	31,988	1.80%	576	11,327	43,891	2.00%	878	-24,188	20,581
922	Equipment Maintenance By Contract	338,326	1.80%	6,090	-35,278	309,138	2.00%	6,183	30,236	345,557
923	Facilities Sust, Rest, & Mod by Contract	35,760	1.80%	644	-13,406	22,998	2.00%	460	3,685	27,143
925	Equipment Purchases (Non- Fund)	0	1.80%	0	3,448	3,448	2.00%	69	-3,266	251
930	Other Depot Maintenance (Non-Fund)	13,966	1.80%	251	19,377	33,594	2.00%	672	44,481	78,747
932	Mgt Prof Support Svcs	1,602	1.80%	29	-681	950	2.00%	19	117	1,086

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

934	Engineering & Tech Svcs	<b>FY 2018</b> <u>Program</u> 2,137	Price Growth <u>Percent</u> 1.80%	Price <u>Growth</u> 38	<b>Program</b> <u>Growth</u> 327	FY 2019 Program 2,502	Price Growth <u>Percent</u> 2.00%	Price <u>Growth</u> 50	<b>Program</b> <u>Growth</u> 900	<b>FY 2020</b> <u>Program</u> 3,452
937	Locally Purchased Fuel (Non-Fund)	1,250	-0.40%	-5	-1,245	0	-0.67%	0	0	0
984	Equipment Contracts	3,814	1.80%	69	-3,842	41	2.00%	1	1,804	1,846
987	Other Intra-Govt Purch	34,131	1.80%	614	2,105	36,850	2.00%	737	-13,250	24,337
989	Other Services	9,710	1.80%	175	-826	9,059	2.00%	181	-575	8,665
990	IT Contract Support Services	7,852	1.80%	141	-7,926	67	2.00%	1	932	1,000
999	Total Other Purchases	484,114		8,686	-26,925	465,875		9,318	42,675	517,868
	Total	491,179		8,815	-27,521	472,473		9,431	40,625	522,529

OP-32 Exhibit, Appropriation Summary of Price/Program Growth MDA-8

	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	Change FY 2019/2020
Contractor FTEs (Total)	986	1,067	1,031	-36

#### Personnel Summary Explanations:

The FY 2019 to FY 2020 the net decrease in contractor FTEs reflects the following changes:

- A reduction of -40 contractor FTEs in the BMDS Radar Program due to reduced contractor requirements.
- The THAAD Program decrease of -11 contractor FTEs is due to the continued transition from the prime contractor to an organic capability for sustainment and maintenance of THAAD post-deployed system software.
- The decrease of -9 FTEs in Aegis BMD Program is due to the reduction in SM-3 IA/IB recertification, G-switch and TSRM efforts.
- Ground-Based Midcourse Defense Program increases at GMD sites to support added requirements due to missile field expansion and host base increased communications support at Fort Greely, AK, twenty-four hour assured maintenance response capability, and increased cyber defense at GMD sites resulting in an overall increase of +24 FTEs.

PB-31R Exhibit, Personnel Summary MDA-9

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PB-31R Exhibit, Personnel Summary MDA-10

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FY 2019 President's Budget Request (Amended, if applicable)	<u>TOTAL</u> 499,817
1. Congressional Adjustments	
a. Distributed Adjustments	
1) Re-baselining of Requirements	-26,150
b. Undistributed Adjustments	
<ol> <li>Across-The-Board Reduction: Historical Underexecution</li> <li>Adjustments to Meet Congressional Intent</li> </ol>	-1,283
d. General Provisions	
1) Fuel Increase (Section 8118)	89
FY 2019 Appropriated Amount	472,473
2. War-Related and Disaster Supplemental Appropriations	
3. Fact-of-Life Changes	
FY 2019 Baseline Funding	472,473
4. Reprogrammings (Requiring 1415 Actions)	
Revised FY 2019 Estimate	472,473
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings	
FY 2019 Normalized Current Estimate	472,473
6. Price Change	9,431
7. Functional Transfers	
8. Program Increases	
a. Annualization of New FY 2019 Program	
b. One-Time FY 2020 Increases	
c. Program Growth in FY 2020	

	TOTAL				
1) BMDS Radars Program	23,274				
2) Aegis BMD Program	12,545				
3) Ground-Based Midcourse Defense Program	12,460				
4) THAAD Program	10,511				
9. Program Decreases					
a. Annualization of FY 2019 Program Decreases					
b. One-Time FY 2019 Increases					
c. Program Decreases in FY 2020					
1) Aegis BMD SM-3 Program	-14,941				
2) Aegis Ashore Program	-2,000				
3) Ground Based Midcourse Defense Program	-1,224				
FY 2020 Budget Request	522,529				

PB-31D Exhibit, Summary of Funding Increases and Decreases

#### Operation and Maintenance, Defense-Wide Summary (\$ in thousands) Budget Activity (BA) 4: Administration and Service-Wide Activities

	FY 2018	Price	Program	FY 2019	Price	Program	FY 2020
	<u>Actuals</u>	<u>Change</u>	<u>Change</u>	<u>Enacted</u>	<u>Change</u>	<u>Change</u>	<u>Estimate</u>
MDA	491 <b>,</b> 179	8,815	-27,521	472,473	9,431	40,625	522 <b>,</b> 529

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

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

The SM-3 sustainment program includes the recertification/repair of missiles, installation of software and hardware updates, demilitarization of SM-3 missiles, modeling and simulation and logistics efforts, and also provides missile transportation back to the second destination upon completion of recertification and repairs.

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

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

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

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

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

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

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

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

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

1. Field and sustainment level supply, maintenance, modernization, hazardous materials/waste disposal, and depot-level maintenance for THAAD missile defense unique equipment.

2. Spares, Interceptor spares, repair parts, and maintenance capability at the location of each THAAD battery.

3. Engineering support for the THAAD missile defense unique equipment.

4. Deployment software support for fielded software, to include deficiency report review, error correction, incremental capability improvements, and hardware/system interface compatibility maintenance.

5. Missile transportation and handling from the missile storage location to the site of the THAAD launchers.

6. IETM updates software users' guide updates, and software revision certification.

7. Maintenance and upkeep for all THAAD training devices.

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

 Supply, maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades.
 Special tools and test equipment for the organic depot.

#### II. Force Structure Summary:

N/A

MDA-16

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

	-				_		
		_	Cong	ressional	Action		
A. <u>BA Subactivities</u>	FY 2018 <u>Actuals</u>	Budget <u>Request</u>	Amount	Percent	Appropriated	Current <u>Enacted</u>	FY 2020 <u>Estimate</u>
4. Administrative and	491,179	499,817	-27,344	-5.5	472,473	472,473	522,529
Servicewide Activities							
Aegis BMD Program	74,208	83,837	-5,763	-6.9	78,074	78,074	75 <b>,</b> 237
BMDS Radars Program	208,176	176,143	-8,508	-4.8	167 <b>,</b> 635	167,635	194,255
Ground-Based Midcourse	138,751	147,229	-8,025	-5.5	139,204	139,204	153,218
Program							
THAAD Program	70,044	92 <b>,</b> 608	-5,048	-5.5	87 <b>,</b> 560	87,560	99 <b>,</b> 819
Total	491,179	499,817	-27,344	-5.5	472,473	472,473	522,529

### III. <u>Financial Summary</u> (\$ in thousands)

	Change	Change
B. <u>Reconciliation Summary</u>		<u>FY 2019/FY 2020</u>
Baseline Funding	499,817	472,473
Congressional Adjustments (Distributed)	-26,150	
Congressional Adjustments (Undistributed)	-1,283	
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)	89	
Subtotal Appropriated Amount	472,473	
Fact-of-Life Changes (2019 to 2019 Only)		
Subtotal Baseline Funding	472,473	
Supplemental		
Reprogrammings		
Price Changes		9,431
Functional Transfers		
Program Changes		40,625
Current Estimate	472,473	522,529
Less: Wartime Supplemental		
Normalized Current Estimate	472,473	

# Missile Defense Agency

# Operation and Maintenance, Defense-Wide

Fiscal Year (FY) 2020 President's Budget

### III. <u>Financial Summary</u> (\$ in thousands)

C. <u>Reconciliation of Increases and Decreases</u> FY 2019 President's Budget Request (Amended, if applicable) 1. Congressional Adjustments	Amount	<u>Totals</u> 499,817 -27,344
a. Distributed Adjustments		_ / / 0 1 1
1) Re-baselining of Requirements	-26,150	
b. Undistributed Adjustments	,	
1) Across-The-Board Reduction: Historical Underexecution	-1,283	
c. Adjustments to Meet Congressional Intent	·	
d. General Provisions		
1) Fuel Increase (Section 8118)	89	
FY 2019 Appropriated Amount		472,473
2. War-Related and Disaster Supplemental Appropriations		
3. Fact-of-Life Changes		
FY 2019 Baseline Funding		472,473
4. Reprogrammings (Requiring 1415 Actions)		
Revised FY 2019 Estimate		472,473
5. Less: Item 2, War-Related and Disaster Supplemental		
Appropriations and Item 4, Reprogrammings		
FY 2019 Normalized Current Estimate		472,473
6. Price Change		9,431
7. Functional Transfers		
8. Program Increases		58 <b>,</b> 790
a. Annualization of New FY 2019 Program		
b. One-Time FY 2020 Increases		
c. Program Growth in FY 2020		
<ol> <li>BMDS Radars Program +\$13,681 increase for AN/TPY-2 Cooling Equipment Unit (CEU) refurbishments due to criticality for both forward based and terminal mode radars located in</li> </ol>	23,274	
multiple geographical locations. Depot-level		

### III. <u>Financial Summary</u> (\$ in thousands)

C.	Recor	nciliation of Increases and Decreases	Amount	<u>Totals</u>
		maintenance is required to restore CEU equipment used in the high optempo corrosive environments to ensure 24 hours a day, 365 days per year availability.		
		24 nouis a day, 303 days per year availability.		
		+\$9,593 provides increased funding to procure mission-critical and fleet spares required due to the high optempo corrosive environments to ensure 24 hours a day, 365 days per year availability. (FY 2019		
	21	Baseline: \$167,635 thousand; +0 FTEs)	12,545	
	۷)	Aegis BMD Program +\$12,545 provides for the transition from RDT&E to O&M for non-developmental engineering site and Common	IZ, 343	
		Source Library (CSL) Software Maintenance costs for the BMDS mission specific Aegis BL 9.2 (BMD 5.1) which has now been certified and operational. (FY		
	23	2019 Baseline: \$78,074 thousand; +0 FTEs)	10 400	
	3)	Ground-Based Midcourse Defense Program +3,897 provides increased cyber defense posture and cyber threat awareness at GMD sites; includes establishing a Network Intrusion Monitoring (NIM) team at Fort Greely to provide greater cyber defense.	12,460	
		coam at fore creer, to provide groater epoer actimet.		
		+3,589 provides additional contractor personnel required to ensure immediate 24/7 maintenance response and operational reporting for weapon system issues at all GMD sites.		
		+\$3,514 funds increased operations, sustainment, maintenance, operational support and equipment		

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

c.	Reconciliation	of Increases and Decreases	Amount	<u>Totals</u>
	required AK.	for the new missile field at Fort Greely,		
	communica obsolesce infrastru telephone thousand; 4) THAAD Pro +\$4,140 f Support f resolve f Software	funds additional Post Deployment Software for the 4th deployed THAAD battery, to increased User anomaly submissions and Change Requests, multi-version integration and simultaneous development of multiple S/W	10 <b>,</b> 511	
	(below th establish level rep were prev facility depot pro DoD maint owned and equipment Managemen	funds the purchase of test program sets (TPS) he procurement funding threshold) to h the capability to repair and maintain depot parables (DLR) at Letterkenny Army Depot that viously tested at a prime contractor . The transition from contract repair to a ogram is IAW 10 U.S.C. 2464 which mandates tain a core capability that is government- d government operated with government t and facilities. The DLRs (ie: Power ht Unit, Power Filter Unit, Tactical h Station and Launch Control Station Power		

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

#### C. Reconciliation of Increases and Decreases

Distribution Units, Radio Power Supply etc.) require testing as a quality measure and final step in the overhaul or repair before the asset is returned to the field. The TPS provide the depot with this testing capability.

+\$1,651 provides additional sustainment support, deployed contractor support, and increased transportation cost for spares/repair parts required for the increase from three in FY 2019 to four deployed OCONUS batteries in FY 2020. Deployments are planned based on COCOM requirements and needs. Additional information can be provided at the appropriate level of security classification.

+\$1,600 funds an increase in THAAD battery sustainment costs due to the addition of new site requirements associated with the implementation of the remote launcher capability concept for support. This new support concept means that batteries with a remote launcher capability will no longer operate from a single location, and will instead need to be able to be supported at multiple locations in that area of operations beginning in FY 2020.

+\$1,330 funds the purchase of spare components required to repair increasing numbers of failed THAAD interceptors and return them to the field in a timely manner. Due to the age and quantity of fielded Amount

Totals

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

C. <u>Reconciliation of Increases and Decreases</u> interceptors, the use of spares is cost effective tool that can provide a quick repair and return of	<u>Amount</u>	<u>Totals</u>
interceptors to the field, supporting the demanding readiness levels for this weapon system. (FY 2019 Baseline: \$87,560 thousand; +0 FTEs)		
9. Program Decreases a. Annualization of FY 2019 Program Decreases b. One-Time FY 2019 Increases c. Program Decreases in FY 2020		-18,165
1) Aegis BMD SM-3 Program -\$7,849 reflects a reduction of SM-3 Block IA/B missile recertifications from 79 in FY 2019 to 32 in FY 2020 due to Navy Fleet Forces Command changes in ship and missile availability. The reductions in recertifications will not impact fleet capacity. Missiles are planned for recertification every 4 years based on the placed-in-service date and when ships are planned to be in port for the offload and replacement of the missiles; the timing of recertifications is based upon warfighter requirements and availability of missiles.	-14,941	
<ul> <li>-\$7,092 reflects a reduction in estimated repairs made during missile recertification (such as G-switch replacement and Third Stage Rocket Motor (TSRM) nozzle replacement) that corresponds with the reduction of planned missile recertifications. (FY 2019 Baseline: \$78,074 thousand)</li> <li>2) Aegis Ashore Program</li> </ul>	-2,000	

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

C. <u>Reconciliation of Increases and Decreases</u> -\$2,000 reflects the delay in completion of the Poland Military Construction project and stand up the Aegis Ashore Commission System from FY 2018 to FY 2020. (A warranty is in place while the project undergoes construction which includes engineering, preventive and corrective maintenance of the systems.) (FY 2019 Baseline: \$78,074 thousand; +0 FTEs)	<u>Amount</u>	<u>Totals</u>
<ul> <li>3) Ground Based Midcourse Defense Program <ul> <li>\$1,224 reflects fewer requirements for operational weapons system materiel purchases resulting from completion of the High Powered Amplifier (HPA) Radio Frequency Output Assembly (RFOA) obsolescence mitigation effort in FY 2019 at the GMD remote communication sites. The previous shortage of spare parts required the prime contractor to initiate obsolescence mitigation efforts resulting in a purchase of additional HPA RFOAs which are now in use. (FY 2019 Baseline: \$139,204 thousand)</li> </ul> </li> <li>FY 2020 Budget Request</li> </ul>	-1,224	522,529

	FY 2018	FY 2019	FY 2020
	Actuals	Enacted	Estimate
1. Operational Support	491,179	472,473	522,529
Aegis Program	74,208	78,074	75,237
Ground Base Midcourse	138,751	139,204	153,218
BMDS Radars	208,176	167,635	194,255
THAAD Program	70,044	87,560	99,819
Total Operations and Maintenance, Defense Wide	491,179	472,473	522,529

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

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

A. Aegis BMD. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U. S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy short-range, medium-range, and intermediate-range ballistic missiles in the midcourse phase of flight and shorter range missile in terminal phase. Aegis BMD also provides a long range surveillance and track (LRS&T) capability to the BMDS. By the end of FY 2020, there will be 41 total BMDS capable ships, which is an increase of 4 ships from FY 2019, requiring maintenance support.

B. Ground-Based Midcourse (GMD). The GMD fielded weapon system is under the command of U.S. Northern Command (NORTHCOM) and is operated by Soldiers from the 100th Missile Defense Brigade (five crews) headquartered at Schriever AFB (SAFB), Colorado, and its

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

49th Missile Defense Battalion (five crews) at Fort Greely, Alaska (FGA). In FY 2020, MDA continues to support 44 operationally deployed GBIs located at FGA (40 GBIs) and Vandenberg Air Force Base, California (VAFB) (4 GBIs). Each GBI delivers a single Exoatmospheric Kill Vehicle (EKV) to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GMD Fire Control System consists of redundant fire control nodes at FGA (two each) and the Missile Defense Integration and Operations Center (MDIOC) (two each) at SAFB. In-Flight Interceptor Communications System (IFICS) Data Terminals (IDTs) are currently located at FGA (two each) VAFB (two each) Eareckson Air Station, Alaska (EAS) and Fort Drum, New York. In FY 2020, MDA will initiate maintenance and support for the new Missile Field 4 at Fort Greely, Alaska.

C. Ballistic Missile Defense Systems (BMDS) Radars Program. The MDA continues to sustain 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars. Five Forward-Based radars at fixed radar sites operate continuously 24 hours a day, 7 days a week, 365 days a year. Seven radars operate in Terminal Mode when integrated with the THAAD battery. The operational tempo is met utilizing military personnel and contractor logistics support (CLS) to operate and maintain the radar. FY 2020 includes AN/TPY-2 operations and maintenance plan and an increase in Depot Level Maintenance for CEU refurbishments due to high optempo corrosive environments.

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

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

by the Army drives an increase in costs for deployed contractor support, increased transportation costs for spares/repair parts and increased quantities of stocks to support separate locations that have remote launcher capability.

V. <u>Personnel Summary</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	Change FY 2018/ <u>FY 2019</u>	Change FY 2019/ <u>FY 2020</u>
<u>Contractor FTEs (Total)</u>	<u>986</u>	<u>1,067</u>	<u>1,031</u>	<u>81</u>	<u>-36</u>

The FY 2019 to FY 2020 the net decrease in contractor FTEs reflects the following changes:

- A reduction of -40 contractor FTEs in the BMDS Radar Program due to reduced contractor requirements.

- The THAAD Program decrease of -11 contractor FTEs is due to the continued transition from the prime contractor to an organic capability for sustainment and maintenance of THAAD post-deployed system software.

- The decrease of -9 FTEs in Aegis BMD Program is due to the reduction in SM-3 IA/IB recertification, G-switch and TSRM efforts.

- Ground-Based Midcourse Defense Program increases at GMD sites to support added requirements due to missile field expansion and host base increased communications support at Fort Greely, AK, twenty-four hour assured maintenance response capability, and increased cyber defense at GMD sites resulting in an overall increase of +24 FTEs.

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

		Chang	Je		Chang	je	
	FY 2018	<u>FY 2018/F</u>	<u>¥ 2019</u>	FY 2019	<u>FY 2019/F</u>	<u>Y 2020</u>	FY 2020
OP 32 Line	Actuals	Price	Program	Enacted	Price	Program	<b>Estimate</b>
308 Travel of Persons	188	3	-191	0	0	220	220
399 Total Travel	188	3	-191	0	0	220	220
401 DLA Energy (Fuel Products)	0	0	700	700	-5	151	846
499 Total Supplies & Materials	0	0	700	700	-5	151	846
677 DISA Telecomm Svcs - Reimbursable	2,425	46	-2,471	0	0	0	0
699 Total DWCF Purchases	2,425	46	-2,471	0	0	0	0
771 Commercial Transport	4,452	80	1,366	5,898	118	-2,421	3,595
799 Total Transportation	4,452	80	1,366	5,898	118	-2,421	3,595
912 Rental Payments to GSA (SLUC)	0	0	253	253	5	-10	248
913 Purchased Utilities (Non-Fund)	2,269	41	24	2,334	47	41	2,422
914 Purchased Communications (Non- Fund)	83	1	666	750	15	1,768	2,533
915 Rents (Non-GSA)	1,226	22	-1,248	0	0	0	0
920 Supplies & Materials (Non- Fund)	31,988	576	11,327	43,891	878	-24,188	20,581
922 Equipment Maintenance By Contract	338,326	6,090	-35,278	309,138	6,183	30,236	345,557
923 Facilities Sust, Rest, & Mod by Contract	35,760	644	-13,406	22,998	460	3,685	27,143
925 Equipment Purchases (Non-Fund)	0	0	3,448	3,448	69	-3,266	251
930 Other Depot Maintenance (Non- Fund)	13,966	251	19,377	33,594	672	44,481	78,747
932 Mgt Prof Support Svcs	1,602	29	-681	950	19	117	1,086
934 Engineering & Tech Svcs	2,137	38	327	2,502	50	900	3,452
937 Locally Purchased Fuel (Non- Fund)	1,250	-5	-1,245	0	0	0	0
984 Equipment Contracts	3,814	69	-3,842	41	1	1,804	1,846
987 Other Intra-Govt Purch	34,131	614	2,105	36,850	737	-13,250	24,337
989 Other Services	9,710	175	-826	9,059	181	-575	8,665
990 IT Contract Support Services	7,852	141	-7,926	67	1	932	1,000
999 Total Other Purchases	484,114	8,686	-26,925	465,875	9,318	42,675	517,868

		Chang	je		Chang	je	
	FY 2018	<u>FY 2018/F</u>	<u>Y 2019</u>	FY 2019	<u>FY 2019/F</u>	<u>Y 2020</u>	FY 2020
OP 32 Line	<u>Actuals</u>	Price	Program	Enacted	<u>Price</u>	Program	<u>Estimate</u>
Total	491,179	8,815	-27,521	472,473	9,431	40,625	522,529

\* OP-32 lines were realigned in FY 2020 to correct classification categories that were inaccurately reported in FY 2019 and more accurately reflect planned expenditures. The following breakout provides further traceability to OP-5 program increases and decreases to their affected OP-32 lines.

-\$18,000 thousand from line 987 Other Intra-Govt Purch was aligned to 930 Depot Maintenance to properly capture items in the right OP-32 line.

-\$15,000 thousand from line 920 Supplies & Materials (Non-Fund) was aligned to 930 Depot Maintenance to properly capture items in the right OP-32 line.

-\$7,000 thousand from line 922 Equipment Maintenance by Contract was aligned to 930 Depot Maintenance to properly capture items in the right OP-32 line.

#### CONTRACT SERVICES FUNDING

#### (\$ in Millions)

		FY 2018 Base & OCO	FY 2019 Base	FY 2019 OCO	FY 2020 Base	FY 2020 OCO
Line	By PB/OP-32 Inflation Category Code	Actual	Request	Request	Request	Request
914	Purchased Communications (Non-Fund)	1	1	0	3	0
	Total 23.1 - Communications, Utilities, and Misc. Charges	1	1	0	3	0
932	Mgmt and Professional Support Services	2	1	0	1	0
933	Studies, Analysis, and Evaluation Services	0	0		0	0
934	Engineering and Technical Services	2	3	0	3	0
	Total 25.1 - Advisory and Assistance Services	4	4	0	4	0
989	Other Contracts	10	10	0	9	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	10	10	0	9	0
987	Other Intra-Government Purchases	34	37	0	24	0
	Total 25.3 - Other Goods and Services from Federal Sources	34	37	0	24	0
923	Facility Maintenance	36	23	0	27	0
	Total 25.4 - Operation and Maintenance of Facilities	36	23	0	27	0
985	Research and Development Contracts					0
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	338	309	0	346	0
930	Other Depot Maintenance (Non-Fund)	14	34	0	79	0
990	IT Contract Support Services	8	1	0	1	0
	Total 25.7 - Operation and Maintenance of Equipme	nt 360	344	0	426	0
964	Subsistence Contracts					
	Total 25.8- Subsistance and Support of Persons	0	0	0	0	0
	Total	445	419	0	493	0
~				N7 1		

Source: Program Resources Collection Process as of 3 Jan 2019

Numbers may not add due to rounding

#### Contractor Full-Time Equivalents

		FY 2018	FY 2019	FY 2019	FY 2020	FY 2020
		Base & OCO	Base	OCO	Base	000
Line	By PB/OP-32 Inflation Category Code	Actual	Request	Request	Request	Request
914	Purchased Communications (Non-Fund)	4	4	0	11	0
	Total 23.1 - Communications, Utilities and Misc. Charges	4	4	0	11	0
932	Mgmt and Professional Support Services	29	6	0	6	0
933	Studies, Analysis, and Evaluation Services				0	
934	Engineering and Technical Services	27	10		12	
	Total 25.1 - Advisory and Assistance Services	56	16	0	18	0
989	Other Contracts	31	35	0	35	0
926	Other Overseas Purchases					
	Total 25.2 - Other Services	31	35	0	35	0
987	Other Intra-Government Purchases	1	19	0	2	0
	Total 25.3 - Other Goods and Services from Federal Sources	1	19	0	2	0
923	Facility Maintenance	371	94	0	94	0
	Total 25.4 - Operation and Maintenance of Facilities	371	94	0	94	0
985	Research and Development Contracts					
	Total 25.5 - Research and Development Contracts	0	0	0	0	0
922	Equipment Maintenance - Contract	468	844	0	741	0
930	Other Depot Maintenance (Non-Fund)	23	55		130	
990	IT Contract Support Services	32	0		0	0
	Total 25.7 - Operation and Maintenance of Equipme	nt 523	899	0	871	0
	Total	986	1,067	0	1,031	0
Source:	Program Resources Collection Process as of 3 Jan 2019			Numbers	may not add due	to rounding

CONTRACT SERVICES

Defense-Wide Missile Defense Agency Operation and Maintenance Justification Narrative

#### Description of Services Financed:

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

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

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

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

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

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

B. Ground-Based Midcourse program reflects increase in sustainment, maintenance and material costs for the new missile field at Fort Greely, AK; 24 hours per day, 7 days per week operations and maintenance assured maintenance response capability throughout GMD sites; and increased cyber defense posture and cyber threat awareness at GMD sites. Growth additionally reflects increase in host base communications support at Fort Greely, AK to address current limited support and obsolescence issues while enhancing communications infrastructure, outside and inside plant installation support, maintenance, and repair as well as increased telephone support.

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

D. Terminal High Altitude Area Defense (THAAD). MDA is responsible for the sustainment of the THAAD missile defense unique or developmental items, while the U. S. Army is responsible for the operations and sustainment of the common items. Funding provides sustainment for all fielded THAAD Batteries, ensures

THAAD assets are properly maintained and crews are trained to meet Combatant Commanders needs including: 1.) Field and sustainment level supply, maintenance, modernization, hazardous materials/waste disposal, and depot-level maintenance for THAAD missile defense unique equipment. 2.) Spares, Interceptor spares, repair parts, and maintenance capability at the location of each THAAD battery. 3.) Engineering support for the THAAD missile defense unique equipment. 4.) Deployment software support for fielded software, to include deficiency report review, error correction, incremental capability improvements, and hardware/systems interface compatibility maintenance. 5.) Missile transportation and handling from the missile storage location to the site of the THAAD launchers. 6.) IETM updates software users' guide updates, and software revision certification. 7.) Maintenance and upkeep for all THAAD training devices. 8.) Supply, maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades. 9.) Special Tools and Test Equipment for the organic depot.

#### Reporting Limitations:

N/A

#### <u>Summary of Increases/Decreases</u>:

A. AEGIS Program funding provides: 1. Increase for Transition of non-developmental engineering site costs and Common Source Library (CSL) Software Maintenance from RDT&E funding to O&M for the lifecycle sustainment services of BMDS mission specific equipment. 2.Decrease for reduction of SM-3 Block IA/B's recertification's from 79 in FY 2019 to 32 in FY 2020 due to Navy Fleet Forces Command changes in ship and missile availability in support of fleet requirements. 3. Decrease for the reduction of rounds being returned for recertification which also generates a corresponding reduction in G-switch replacement and Third Stage Rocket Motor (TSRM) nozzle replacement repairs that are performed during missile recertification 4.Decrease for a delay in the planned FY 2018 completion of the Poland Military Construction project to stand up the Aegis Ashore Commission System which is now planned for completion in FY 2020.

B. Ground-Based Midcourse program increase provides sustainment, maintenance and material for the new missile field at Fort Greely, AK; 24 hours per day, 7 days per week operations and maintenance assured maintenance response capability throughout GMD sites; and increase cyber defense posture and cyber threat awareness at GMD sites. Growth additionally reflects increase in host base communications support at Fort Greely, AK to address current limited support and obsolescence issues while enhancing communications infrastructure, outside and inside plant installation support, maintenance, and repair as well as increased telephone support. The GM Program has fewer operational weapons system material purchases in FY 2020.

C. Ballistic Missile Defense Systems (BMDS) Radars program growth reflects an increase to the Cooling Equipment Unit (CEU) depot-level maintenance refurbishment schedule required to restore equipment used in high-op tempo corrosive environment.

D. THAAD program growth provides: 1. Post Deployment Software Support to sustain multiple deployed software (S/W) builds. 2. The purchase of test program sets (TPS) to establish the capability to repair and maintain depot level reparables (DLR) at Letterkenny Army Depot that were previously tested at a prime contractor facility. 3. Increased sustainment costs for the planned transition from three to four deployed OCONUS batteries. 4. Increased sustainment costs due to implementation and fielding of remote launcher capability. 5. The purchase of interceptor spare components for quick repair and return of interceptors to the field.

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Appropriation/Fund	FY 2018 <u>Actuals</u>	FY 2019 <u>Enacted</u>	FY 2020 <u>Estimate</u>
I. Management & Professional Support Services FFRDC Work Non-FFRDC Work Subtotal	480 <u>1,122</u> 1,602	285 <u>665</u> 950	305 <u>781</u> 1,086
II. Studies, Analysis & Evaluations FFRDC Work Non-FFRDC Work Subtotal	0 <u>0</u> 0	0 <u>0</u> 0	0 <u>0</u> 0
<pre>III. Engineering &amp; Technical Services    FFRDC Work    Non-FFRDC Work    Subtotal</pre>	1,128 <u>1,009</u> 2,137	1,181	•
TOTAL FFRDC Work Non-FFRDC Work	1,608 2,131	1,846	2,443
Reimbursable	0	0	0

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

The FY 2018 to FY 2019 changes reflects less software maintenance requirements in FY 2019 based on the accelerated certifications of Aegis BMD 4.1.

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

The Ground-based Midcourse Defense Program provides an increase in Management and Support Services to perform independent assessment of GMD system manuals and processes as well as an increase in Warfighter interface and engagement assistance. Aegis BMD Program increase reflects realignment of Depot Maintenance efforts to 934 Engineering & Technical Services.

#### Missile Defense Agency

		(Dollars in Thousands)			
Appropriation/Fund: RDT&E (0400)	FY 2018	FY 2019	FY 2020		
1. Management & Professional Suppor	t Services				
FFRDC Work	932	15,983	7,825	9,915	
Non-FFRDC Work	932	482,804	253,019	320,583	
Sub-Total		498,787	260,844	330,498	
2. Studies, Analysis & Evaluations					
FFRDC Work	933	16,343	13,020	9,140	
Non-FFRDC Work	933	31,410	25,275	18,557	
Sub-Total		47,753	38,295	27,697	
3. Engineering & Technical Services					
FFRDC Work	934	46,184	58,847	2,125	
Non-FFRDC Work	934	60,527	77,121	100,961	
Sub-Total		106,711	135,968	103,086	
TOTAL FFRDC Work Non-FFRDC Work		653,251 78,510 574,741	435,107 79,692 355,415	461,281 21,180 440,101	

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MISSILE DEFENSE AGENCY	Foreign National			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>
1. FY 2018 FTEs	0	0	0	0
2. FY 2019 FTEs	0	0	0	0
3. FY 2020 FTEs	0	0	0	0

MDA - Operation and Maintenance (O&M)	I) <u>Foreign National</u>			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>
1. FY 2018 FTEs	0	0	0	0
2. FY 2019 FTEs	0	0	0	0
3. FY 2020 FTEs	0	0	0	0

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

1.1011	nebeuren,	Deveropmene,	rebe and reardered (ibrar)					
				Foreign National				
			<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>		
1. F	Y 2018 FTEs		0	0	0	0		
2. F	Y 2019 FTEs		0	0	0	0		
3. F	Y 2020 FTEs		0	0	0	0		

MDA - Defense Working Capital Fund (DWCF)	NCF) <u>Foreign National</u>			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Indirect Hire</u>	<u>Total</u>
1. FY 2018 FTEs	0	0	0	0
2. FY 2019 FTEs	0	0	0	0
3. FY 2020 FTEs	0	0	0	0

4. SUMMARY		Foreign National			
	<u>US Direct Hire</u>	<u>Direct Hire</u>	Indirect Hire	<u>Total</u>	
TR 0010					

FY 2018

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RDT&E Total	2,283	0	0	2,283
Direct Funded	2,283	0	0	2,283
Reimbursable Funded	0	0	0	0
Total Component	2,283	0	0	2,283
Direct Funded	2,283	0	0	2,283
Reimbursable Funded	0	0	0	0
FY 2019				
RDT&E Total	2,278	0	0	2,278
Direct Funded	2,278	0	0	2,278
Reimbursable Funded	0	0	0	0
Total Component	2,278	0	0	2,278
Direct Funded	2,278	0	0	2,278
Reimbursable Funded	0	0	0	0
FY 2020				
RDT&E Total	2,183	0	0	2,183
Direct Funded	2,183	0	0	2,183
Reimbursable Funded	0	0	0	0
Total Component	2,183	0	0	2,183
Direct Funded	2,183	0	0	2,183
Reimbursable Funded	0	0	0	0

#### 5. SUMMARY OF CHANGES

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

#### Change from FY 2018 to FY 2019:

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

#### Change from FY 2019 to FY 2020:

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

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Weapon System	FY 2018	FY 2019	FY 2020
AN/TPY-2 Radar	59,108	55,246	59,526
Ballistic Missile Defense	22,012	19,763	28,497
Standard Missile-3	35,564	37,711	26,878
THAAD	11,709	22,915	28,987
	128,393	135,635	143,888
THAAD	-	-	-
	-	-	-
Standard Missile-3	278	259	180
THAAD	165	6,180	9,170
	443	6,439	9,350
Ballistic Missile Defense	5,305	5,541	7,990
Standard Missile-3	5,481	10,685	9,622
THAAD	2,135	84	3,428
	12,921	16,310	21,040
THAAD	16,600	12,563	10,29
	16,600	12,563	10,29
	158,357	170,947	184,577
THAAD	-	-	-
	-	-	-
AN/TPY-2 Radar	947	5,397	3,29
	947	5,397	3,29
	947	5,397	3,290
	100		
Ballistic Missile Defense		-	-
N. 11/		-	-
Ballistic Missile Defense		-	-
			-
	,	· · · · ·	81,59
THAAD			-
	· · · ·	,	81,59
ing	80,727	81,070	81,590
	AN/TPY-2 Radar Ballistic Missile Defense Standard Missile-3 THAAD THAAD Standard Missile-3 THAAD Ballistic Missile Defense Standard Missile-3 THAAD THAAD THAAD AN/TPY-2 Radar Ballistic Missile Defense Ballistic Missile Defense Ballistic Missile Defense	Ballistic Missile Defense       22,012         Standard Missile-3       35,564         THAAD       11,709         128,393       128,393         THAAD       -         Standard Missile-3       278         THAAD       165         Standard Missile-3       278         THAAD       165         Ballistic Missile Defense       5,305         Standard Missile-3       5,481         THAAD       2,135         I2,921       12,921         THAAD       16,600         166,00       166,600         THAAD       16,600         MAD       16,600         THAAD       16,600         Standard Missile Defense       483         Standard Missile Defense       443         Ballistic Missile Defense       489         Ballistic Missile Defense       489         Ballistic Missile Defense       150         AN/TPY-2 Radar       80,089	Ballistic Missile Defense         22,012         19,763           Standard Missile-3         35,564         37,711           THAAD         11,709         22,915           128,393         135,635         128,393           THAAD         -         -           Standard Missile-3         278         259           THAAD         165         6,180           443         6,439         84           Standard Missile-3         5,305         5,541           Standard Missile-3         5,481         10,685           THAAD         16,600         12,563           THAAD         -         -           THAAD         -         -           THAAD         16,600         12,563           THAAD         947         5,397           947         5,397         947           947         5,397<

#### Missile Defense Agency Depot Maintenance Program

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

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**Missile Defense Agency** 

## Fiscal Year 2020

## **President's Budget Submittal**

# **Military Construction Exhibit**



# **March 2019**

## MISSILE DEFENSE AGENCY FY 2020 MILITARY CONSTRUCTION PRESIDENT'S BUDGET SUBMITTAL DESCRIPTIVE SUMMARIES

## (\$ in Thousands)

<b>Program</b>	<u>Authorization</u>	<u>Appropriation</u>
Major Construction	0	0
Unspecified Minor Construction	10,000	10,000
MILCON Planning & Design	35,472	<u>35,472</u>
TOTAL MILITARY CONSTRUCTION	45,472	45,472

### MISSILE DEFENSE AGENCY FY 2020 MILITARY CONSTRUCTION PROJECT SUMMARY BY LOCATION

## (\$ in Thousands)

State/Installation/Project	Auth <u>Request</u>	Approp <u>Request</u>	New/Current <u>Mission</u>
Major Construction	0	0	
Unspecified Minor Construction	10,000	10,000	
MILCON Planning and Design	<u>35,472</u>	35,472	
TOTAL MILITARY CONSTRUCTION	45,472	45,472	

1. COMPONENT						2. DATE
MDA	г	FY 2020 MILITARY CON	ISTRUCTIO	NPROJECTL		Jan 2019
3. INSTALLATION AND Various Worldw.		tions	4. PROJECT Unspecif	TITLE Tied Minor C	onstruction	
5. PROGRAM ELEMEN	т	6. CATEGORY CODE	7. PROJECT	NUMBER	8. PROJECT C	OST (\$000)
N/A		N/A		N/A		10,000
		9. CO	ST ESTIMATES			1
	Γ	ГЕМ	U/M	QUANTITY	UNIT COST	COST (\$000)
Unspecified Min	nor Cons	truction	LS			10,000
SUBTOTAL						10,000
CONTINGENCY PE		.0%)				0
ESTMATED CONTRA		N & OVERHEAD (0.0%)				10,000
TOTAL REQUEST						10,000
TOTAL REQUEST	(ROUNDED	)				10,000
INSTALLED EQPT	-OTHER A	PPROPRIATIONS				(0)
10. DESCRIPTION OF PROPOSED CONSTRUCTION: Provide a lump sum amount for unspecified construction projects, not otherwise authorized by law, including normal construction, alteration or conversion of permanent or temporary facilities, in accordance with 10 USC Section 2805 as amended by the FY 2018 National Defense Authorization Act.						
11. REQUIREMENT :	As requi	red				
\$6,000,000 adjuterritories, and react in FY 200 facilities resulties resulties or proper- development resulties All required NU	usted for and up to 20 to re- ulting f ty. Incl quiremen EPA and/	expanded facilities r location (not to e \$6,000,000 elsewher quirements for const rom unforeseen situa uded would be projec ts of the Ballistic f or EO 12114 analyses unspecified construc	xceed \$10, e. These f ruction, a tions affe ts to supp Missile De will be c	000,000) with unds provide lteration, of cting mission ort mission fense System ompleted pres	thin the U.S. MDA the cap or modificati on performanc critical res m.	and pability to on of ee or safety of eearch and

1. COMPONENT						2. DATE
MDA	F	Y 2020 MILITARY CON	STRUCTION	N PROJECT D	ΑΤΑ	Jan 2019
3. INSTALLATION AND LOCATION Various Worldwide Locations			<b>4. PROJECT</b> Planning	TITLE and Design		
5. PROGRAM ELEMEN	т	6. CATEGORY CODE	7. PROJECT	NUMBER	8. PROJECT C	OST (\$000)
N/A		N/A		N/A		35,472
		9. COS	ST ESTIMATES			
	ľ	ſEM	U/M	QUANTITY	UNIT COST	COST (\$000)
Planning and De	esign		LS			35,472
SUBTOTAL						35,472
CONTINGENCY PER ESTMATED CONTRA		.0%)				035,472
		N & OVERHEAD (0.0%)				0
TOTAL REQUEST						35,472
TOTAL REQUEST INSTALLED EQPT						35,472
of facilities is construction pr planning and de (BMDS) with a programs. The amount of p	These pla in the Mi rojects r esign fo: long lead planning	red anning and design fur DA military construct which are anticipated r future projects sup d-time to be included and design funds in planned in the FYDP:	tion progra d to arise pporting th d in subsec	am including during FY 2 ne Ballistic quent MDA Mi	y unspecified 2020, and acc Missile Def litary Const	minor omplish ense System ruction
new faci	lity to j	t Communications Faci provide a redundant G apability on the Miss	Ground-Base	ed Midcourse		
a new HDI	R System	Defense Radar - Hawa Complex on the islar in Phase 1,				
	R System	Defense Radar - Hawa Complex on the islar				
		n-Flight Interceptor at will construct a r				
will cons realistic	struct a c, secure	ated Test Center, Pha state-of-the-art tes e, and efficient test DS Hardware-in-the-lo	st center p t infrastru	providing a ucture envir	more operati	onally

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Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	ense Agen	су				Date: M	arch 2019		
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-W Equipment, Missile Defense Ager	ide / BA 01:	•		A 17: Major		Line Item N 17 / THAAD	umber / Tit	le:	·			
ID Code (A=Service Ready, B=Not Service Ready):	В		Program Eler	604876C, 0603	8881C	Other Relate	d Program El	ements: 0604	876C, 060388	1C		
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	276	109	96	37	-	37	28	21	28	29	-	624
Gross/Weapon System Cost (\$ in Millions)	4,164.497	1,125.732	1,014.068	425.863	-	425.863	430.719	381.628	417.431	432.831	-	8,392.769
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	4,164.497	1,125.732	1,014.068	425.863	-	425.863	430.719	381.628	417.431	432.831	-	8,392.769
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	4,164.497	1,125.732	1,014.068	425.863	-	425.863	430.719	381.628	417.431	432.831	-	8,392.769
(The following	g Resource Sumr	mary rows are fo	or informational p	urposes only. Th	e correspondir	ng budget requests	s are documente	ed elsewhere.)			Î	
Initial Spares (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	23.016	9.169	9.647	9.426	-	9.426	12.142	12.142	12.314	12.314	Continuing	Continuing
Gross/Weapon System Unit Cost (\$ in Millions)	15.089	10.328	10.563	11.510	-	11.510	15.383	18.173	14.908	14.925	-	13.450

#### **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 and targeting sensor providing data to the THAAD system to execute intercept missions. The THAAD system, in conjunction with the fielded Phased Array Tracking Radar to Intercept on Target (PATRIOT) system, provides the TDS for the Missile Defense Agency (MDA) objective of enhancing the BMDS capability. Five major components (Interceptors, Launchers, AN/TPY-2 Radar, THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSG), and Peculiar Support Equipment including Missile Round Pallet Transportable) comprise the THAAD system.

tooling and equipment for the THAAD stockpile reliability and recertification program needed to maintain THAAD interceptors in warfighter inventory. In FY 2020 MDA will continue a "synergy" lot buy approach to THAAD Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year funding. By utilizing this approach, MDA will achieve savings in material costs in multiple fiscal years. This will result in a higher Interceptor quantity buy at a lower average unit price than if buys were not combined. Depending on	Exhib	it P-40, Budget Line Item Justification: P	B 2020 Mi	ssile	e Defe	nse Agency			Date: M	arch 2019	
Line Item MDAP/MAIS Code: 362         FY 2018       FY 2019       FY 2020 Base       FY 2020 OCO       FY 2020 Total         Exhibits Schedule       Prior Years       FY 2018       FY 2019       FY 2020 Base       FY 2020 OCO       FY 2020 Total         Exhibits Schedule       ID       MAIS       Quantity / Total Cost	0300E	: Procurement, Defense-Wide / BA 01: Maj	•	ent	/ BSA			mber / Title:			
Exhibits Schedule         Prior Years         FY 2018         FY 2019         FY 2020 Base         FY 2020 OCO         FY 2020 Total           Exhibit Type         Title*         Subexhibits         D         MDAP/ MAIS         Quantity / Total Cost (Each) / (5 M)	ID Code	e (A=Service Ready, B=Not Service Ready): B	Pro	ograr	n Eleme	ents for Code B Iten	<b>ns:</b> 0604876C, 06038	81C Other F	Related Program Ele	ements: 0604876C, 0	)603881C
Exhibit Type         Title*         Subexhibits         ID CD         MDAP/ MAIS Code         Quantity / Total Cost (Each) / (S M)         Quantity / Total Cost (Each) / (S M)	Line Ite	m MDAP/MAIS Code: 362						i			
Exhibit TypeTitle*D SubexhibitsMAS CodeQuantity / Total Cost (Each) / (S M)Quantity / Total Cost (Each)		Exhibits Schedule				Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
P40       Total Gross/Weapon System Cost       276 / 4,164.497       109 / 1,125.732       96 / 1,014.068       37 / 425.863       - / -       37 / 425.863         *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:       Note:       Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.         Justification:       The FY 2020 budget decrease is primarily due to a reduction in the THAAD Interceptor procurement quantity from 96 in FY 2019 to 37 in FY 2020.       The FY 2020 budget request includes 37 THAAD Interceptors, the THAAD Stockpile Reliability Program, obsolescence mitigation efforts, production and training support, as well as the procurement of necessary tooling and equipment for the THAAD stockpile reliability and recertification program needed to maintain THAAD interceptors in warfighter inventory.       In FY 2020 MDA will continue a "synergy" lot buy approach to THAAD Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year funding. By utilizing this approach, MDA will achieve savings in material costs in multiple fiscal years. This will result in a higher Interceptor quantity buy at a lower average unit price than if buys were not combined. Depending on		Title*	Subexhibits		MAIS						
*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 2020 budget decrease is primarily due to a reduction in the THAAD Interceptor procurement quantity from 96 in FY 2019 to 37 in FY 2020. The FY 2020 budget request includes 37 THAAD Interceptors, the THAAD Stockpile Reliability Program, obsolescence mitigation efforts, production and training support, as well as the procurement of necessary tooling and equipment for the THAAD stockpile reliability and recertification program needed to maintain THAAD interceptors in warfighter inventory. In FY 2020 MDA will continue a "synergy" lot buy approach to THAAD Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year funding. By utilizing this approach, MDA will achieve savings in material costs in multiple fiscal years. This will result in a higher Interceptor quantity buy at a lower average unit price than if buys were not combined. Depending on	P-5	THAAD	P-5a, P-21	в		276 / 4,164.497	109 / 1,125.732	96 / 1,014.068	37 / 425.863	- / -	37 / 425.863
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.  Justification: The FY 2020 budget decrease is primarily due to a reduction in the THAAD Interceptor procurement quantity from 96 in FY 2019 to 37 in FY 2020. The FY 2020 budget request includes 37 THAAD Interceptors, the THAAD Stockpile Reliability Program, obsolescence mitigation efforts, production and training support, as well as the procurement of necessary tooling and equipment for the THAAD stockpile reliability and recertification program needed to maintain THAAD interceptors in warfighter inventory. In FY 2020 MDA will continue a "synergy" lot buy approach to THAAD Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year funding. By utilizing this approach, MDA will achieve savings in material costs in multiple fiscal years. This will result in a higher Interceptor quantity buy at a lower average unit price than if buys were not combined. Depending on	P-40	Total Gross/Weapon System Cost				276 / 4,164.497	109 / 1,125.732	96 / 1,014.068	37 / 425.863	- / -	37 / 425.863
Justification: The FY 2020 budget decrease is primarily due to a reduction in the THAAD Interceptor procurement quantity from 96 in FY 2019 to 37 in FY 2020. The FY 2020 budget request includes 37 THAAD Interceptors, the THAAD Stockpile Reliability Program, obsolescence mitigation efforts, production and training support, as well as the procurement of necessary tooling and equipment for the THAAD stockpile reliability and recertification program needed to maintain THAAD interceptors in warfighter inventory. In FY 2020 MDA will continue a "synergy" lot buy approach to THAAD Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year funding. By utilizing this approach, MDA will achieve savings in material costs in multiple fiscal years. This will result in a higher Interceptor quantity buy at a lower average unit price than if buys were not combined. Depending on					ion; and/	or 3) the Number / Title	(Modification Type) for N	Aodifications.			
outcome of the synergy buy, THAAD plans to buy to budget such that potentially more interceptors or their enabling hardware items as required could be procured.	Justifie The FY The FY tooling In FY 2 this ap	cation: <sup>7</sup> 2020 budget decrease is primarily due to a reduction <sup>7</sup> 2020 budget request includes 37 THAAD Interceptors and equipment for the THAAD stockpile reliability and 2020 MDA will continue a "synergy" lot buy approach to proach, MDA will achieve savings in material costs in r	in the THAA s, the THAAI recertificatio THAAD Inte nultiple fisca	D Int ) Sto n pro ercep	ckpile R gram ne tor purc 's. This	eliability Program, ot eeded to maintain TH hases. This approac will result in a higher	bsolescence mitigation HAAD interceptors in v ch entails awarding a o Interceptor quantity b	n efforts, production a varfighter inventory. contract that includes vuy at a lower averag	an option for the folle e unit price than if bu	owing fiscal year fund	ling. By utilizing

"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".

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	ile Defens	se Agen	су								Date: N	/larch 20 <sup>2</sup>	19		
Appropriation / B 0300D / 01 / 17	udget A	ctivity /	Budget	Sub Acti	vity:		<b>.ine Iter</b> 7 / THAA	<b>Numbe</b>	r / Title:					<b>Item N</b> ı THAAD	umber / 1	Fitle [DO	DIC]:	
ID Code (A=Service Read	ly, B=Not Servi	ice Ready):	3						М	DAP/MAIS	Code:							
F	Resource	Summ	ary		F	Prior Yea	ars	FY 20	)18	FY	2019	FY	2020 Bas	se F	Y 2020 (	000	FY 2020	Total
Procurement Quantity (Uni			,				276		109		9	6		37		-		3
Gross/Weapon System Co	,	is)				4,	,164.497		1,125.732		1,014.06	8	42	5.863		-		425.86
Less PY Advance Procure	ement (\$ in Mil	lions)					0.000		0.000		0.00	0		-		-		-
Net Procurement (P-1) (\$ i	in Millions)					4,	,164.497		1,125.732		1,014.06	8	42	5.863		-		425.86
Plus CY Advance Procure	ment (\$ in Mil	lions)					0.000		0.000		0.00	0		-		-		-
Total Obligation Authorit	ty (\$ in Millions	5)				4,	,164.497		1,125.732		1,014.06	8	42	5.863		-		425.86
(TI	he following l	Resource Su	Immary row	s are for info	rmational p	urposes only	. The corres	ponding bud	get request	s are docume	ented elsewh	ere.)						
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System Ur	nit Cost (\$ in I	Millions)					15.089		10.328		10.56	3	1	1.510		-		11.51
Note: Subtotals or Totals i	n this Exhibit	P-5 may no	t be exact c	or sum exactly	y due to rou	inding.												
	F	Prior Years	3		FY 2018			FY 2019		FY	2020 Bas	e	F	Y 2020 O	со	F	Y 2020 Tota	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	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost	<b>Qty</b> (Each)	Total Cost (\$ M)
Hardware Cost		. ,			. ,						, , ,	,		, ,				
Recurring Cost																		
Interceptor <sup>(†)</sup>	10.661	276	2,942.384	9.169	109	999.425	9.647	96	926.123	9.426	37	348.753	-	-	-	9.426	37	348.75
Launcher <sup>(†)</sup>	8.110	36	291.977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Equipment	20.453	8	163.627	69.864	1	69.864	-	-	-	-	-	-	-	-	-	-	-	-
TFCC Tactical Station Group <sup>(†)</sup>	10.522	8	84.179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	3,482.167	-	-	1,069.289	-	-	926.123	-	-	348.753	-	-	-	-	-	348.75
Subtotal: Hardware Cost	-	-	3,482.167	-	-	1,069.289	-	-	926.123	-	-	348.753	-	-	-	-	-	348.75
Support Cost	ı – – – – – – – – – – – – – – – – – – –			<u>г</u> г		T	,	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			1		1	1	1	1
Obsolescence and Modifications	35.363	5	176.816	21.989	1	21.989	30.920	1	30.920	25.151	1	25.151	-	-	-	25.151	1	25.15
Production Support & Testing	61.833	6	370.998	12.293	1		19.225	1	19.225	44.549	1	44.549		-	-	44.549	1	44.54
Training	22.419	6	134.516	18.021	1	18.021	-	-	-	7.410	1	7.410	-	-	-	7.410	1	7.41
USFK JEON	-	-	-	4.140	1		37.800	1	37.800	-	-	-	-	-	-	-	-	-
		-	682.330	-	-	56.443	-	-	87.945	-	-	77.110	-	-	-	-	-	77.11
Subtotal: Support Cost Gross/Weapon System	-																	

Remarks:

LI MD07 - THAAD Missile Defense Agency

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Exhibit P-5, Cost Analysis: PB 2020 Missile Defense Agen	CY	Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD
ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:	
"Procurement Quantity" above represents interceptors only, but the "Net Pr the "Gross Weapon System Unit Cost". Support Equipment captures misce Support Center (BSC) that support the THAAD Batteries and varies from ye The decrease from FY 2019 to FY 2020 reflects a reduction in THAAD inter The increase in the Production Support & Testing from FY 2019 to FY 2020 line, operating at annual capacity levels, cannot serve the dual-purpose of I capital investment for additional production space. This funding will procure equipment provides interceptor recertification and enables production and space.	ellaneous items such as THAAD Missile Round Pallet-Transport ear to year. Prceptor quantity from 96 in FY 2019 to 37 in FY 2020. O procures equipment required for Stockpile Reliability Testing. both final Interceptor integration and Interceptor disassembly for e test equipment and production fixtures for the new Stockpile F	rtable (MRP-T), THAAD Active Leak Sensor System (TALSS), and Batter As Interceptor production quantities increase, the existing production or stockpile reliability testing purposes. Prime Contractor is making a
The increase in the Training from FY 2019 to FY 2020 provides procureme	nt of THAAD Skills Trainer to train enhanced operators/maintai	iners on THAAD hardware. Without the THAAD Skills Trainer, the US
Army cannot efficiently train new THAAD soldiers.		
Obsolescence encompasses mitigation activities that protect the system de schedule. Examples of mitigation activities include component replacement production lots.		

		•	nd Planning: PB 2020 Mi	issile Defense Age	ncy				March 20			
ppropriation / Budget 300D / 01 / 17	Activi	ity / Buo	-	P-1 Line Item Nun MD07 / THAAD	nber / Title:			Item THAA	Number / \D	Title	[DODIC]:	
Cost Elements	0 C 0	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Interceptor - Lot 1 <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	N		Oct 2009
Interceptor - Lot 4 <sup>(†)</sup>		2012	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Aug 2012	Jun 2015	46	11.022	N		Aug 2011
Interceptor - Lot 5 <sup>(†)</sup>		2013	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Sep 2013	Jul 2017	34	11.022	N		Aug 2011
Interceptor - Lot 6 <sup>(†)</sup>		2014	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2013	Mar 2018	27	11.022	N		Jun 2013
Interceptor - Lot 7 <sup>(†)</sup>		2015	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2015	Aug 2018	38	10.100	N		Mar 2014
Interceptor - Lot 8 <sup>(†)</sup>		2016	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2015	Apr 2019	36	10.100	N		Apr 2015
Interceptor - Lot 9 <sup>(†)</sup>		2017	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2017	Jan 2020	47	9.185	N		May 2016
Interceptor - Lot 10 <sup>(†)</sup>		2018	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2017	Jun 2020	109	9.169	N		Dec 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	Y		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 - L $2^{(\dagger)}$	ot	2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Mar 2011	May 2013	4	10.100	Y		Oct 2009
TFCC Tactical Station Group - L $3^{(\dagger)}$	ot	2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Aug 2014	2	10.100	Y		Aug 2011
TFCC Tactical Station Group - L 4 <sup>(†)</sup>	ot	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

#### Remarks:

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

Exhibit F	P-21, Pr	oducti	ion Sc	hedu	le: Pl	B 202	0 Mis	sile D	efens	se Age	ency											Date	e: Ma	rch 20	019				
<b>Appropr</b> 0300D /		Budge	et Acti	vity /	Bud	get Sı	ub Ac	tivity	:			Item THAA		ber /	Title	:						Iten THA		nber /	Title	[DO[	DIC]:		
		lements in Each)								Fiscal Y	'ear 2011											Fiscal Y	'ear 2012						BA
			ACCEPT									c	Calendar	Year 20	11								Caler	ndar Year	r 2012				L
M O F C R O # FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2010	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	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	JUN	J U L	A U G	S E P	A N C E
Interceptor - L	ot 1		i										·				,												
1 2010	MDA	26	0	26						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	25
Interceptor - L	1																1	<b>T</b>									r		
2 2011		22	0	22						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Interceptor - L		1	1																							-	r		
3 2012		46	0	46		_																					Α-	-	46
Interceptor - L	1	1	1					_																					
4 2013		34	0	34																									34
Interceptor - L	ot 6																												
5 2014	MDA	27	0	27																									27
Interceptor - L	ot 7																		-										
6 2015	MDA	38	0	38																									38
Interceptor - L	ot 8																												
6 2016	MDA	36	0	36																									36
Interceptor - L	ot 9																												
6 2017	MDA	47	0	47																									47
Interceptor - L	ot 10																												
6 2018	MDA	109	0	109																									109
Launcher - Lo	t 1																												
7 2010	MDA	6	0	6								Α-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Launcher - Lo	t 3																												,
8 2011	MDA	6	0	6																						A -	-	-	6
Launcher - Lo	t 2																												,
9 2011	MDA	6	0	6								Α-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Launcher - Lo	t 4													,															,
10 2012	MDA	6	0	6																					-	A -	-	-	6
Launcher - Lo	t 6																												,
11 2014	MDA	12	0	12																									12
TFCC Tactica		ıp - Lot 2																											
12 2011	1	4	0	4						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
TFCC Tactica				1						1		1			1		1	1					1	1		1		1	,
13 2011	1	2	0	2																						A -	-	-	2
TFCC Tactica			1	1																						1		1	,
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Exhibit P-21, Production	n Schedu	e: PE	3 2020	0 Mis	sile D	efens	se Age	ency											Date	e: Ma	rch 20	019				
Appropriation / Budget 0300D / 01 / 17	Activity /	Budg	get Su	ıb Ac	tivity	1		<b>Line</b> 07 / T			ber /	Title:							<b>Item</b> THA		nber /	Title	[DOC	DIC]:		
Cost Elements (Units in Each)							Fiscal Y	'ear 2011											Fiscal Y	ear 2012						B
A	CCEPT					_			(	Calendar	Year 201	1								Caler	dar Yea	2012				L
O F PROC	FY SERVICE QTY 2010 1 OCT T V C N B R R												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	
14 2012 MDA 2	0 2					1	1	1		U N	1	A U G	1				1					1	Α-	-	-	
		O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	JUN	JUL	A U G	S E P	O C T	N O V	D E C	ZÞĹ	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

Intercapio - Li 2Vice Vice Vice Vice Vice Vice Vice Vice	Exhibit P	P-21, Pro	oducti	on Sc	hedu	le: PE	3 202	0 Mis	sile D	efens	e Age	ency											Date	: Ma	rch 20	)19				
Image: I			Budge	et Acti	vity /	Budg	get Si	ub Ac	tivity						ber /	Title:									nber /	Title	[DOI	DIC]:		
1112<											Fiscal Y	ear 2013										F	Fiscal Ye	ear 2014						
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Important Important Important Important 	Interceptor - Lo	ot 1																												
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111 <th< td=""><td>2 2011</td><td>MDA</td><td>22</td><td>0</td><td>22</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>4</td><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td><td>-</td><td>-</td><td>-</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td>0</td></th<>	2 2011	MDA	22	0	22	-	-	-	-	-	-	-	-	-	4	4	4	3	3	3	-	-	-	1						0
Interceptor - Lot S       Image: S <td>Interceptor - Lo</td> <td>ot 4</td> <td></td>	Interceptor - Lo	ot 4																												
4213MDA34034034034034034034034034034034034034034035035035035035035035035035035035035035<	3 2012	MDA	46	0	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46
Interverver     Interververver     Interververver     Interverververververver     Interververververververververververververve	Interceptor - Lo	ot 5																												
No 27 No 28 No 27 No 28 No	4 2013	MDA	34	0	34												A -	-	-	-	-	-	-	-	-	-	-	-	-	34
INTRODUCTION TO TABLE TO TA	Interceptor - Lo	ot 6																												
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Intercapio - Lot 8       No       As       A	Interceptor - Lo	ot 7		_																										
a       a	6 2015	MDA	38	0	38																									38
Interceptor - Lot 9     Image of the content of the con	Interceptor - Lo	ot 8																												
6       2017       MDA       47       0       47       47       0       47       47       0       47       47       0       47       47       0       47       47       0       47       47       0       47       47       0       47<	6 2016	MDA	36	0	36																									36
Interceptor - Lot 1       Interceptor - Lot 2       Interceptor - Lot 1       Interceptor - Lot 2       Interceptor - Lot 3       Interceptor - Lot 3       Interceptor - Lot 3       Interceptor - Lot 3       Interceptor - Lot 4       Interceptor - Lot 4<	Interceptor - Lo	ot 9																												
i       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0       109       0 </td <td>6 2017</td> <td>MDA</td> <td>47</td> <td>0</td> <td>47</td> <td></td> <td>47</td>	6 2017	MDA	47	0	47																									47
Launcher - Lot       Lot       Lot       Lot       Lot	Interceptor - Lo	ot 10																												
1       2       1       2       1       2       1       2       1       2       1       3       3         Laurer - Lot       Laurer - Lo	6 2018	MDA	109	0	109																									109
Law       L	Launcher - Lot	1																												
8       201       MDA       6       0       6       0       6       0 <td>7 2010</td> <td>MDA</td> <td>6</td> <td>0</td> <td>6</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1</td> <td>2</td> <td>-</td> <td>-</td> <td>3</td> <td></td> <td>0</td>	7 2010	MDA	6	0	6	-	-	-	-	-	-	1	2	-	-	3														0
Larie e - Lot       Larie e - Lot<	Launcher - Lot	3																												
9       011       MDA       6       0       0 <td>8 2011</td> <td>MDA</td> <td>6</td> <td>0</td> <td>6</td> <td>-</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td>	8 2011	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1
Laureer - Lot       Lot <thlot< th="">       Lot</thlot<>	Launcher - Lot	2																				· · · ·						·		
10       2012       MDA       6       0       6 <th< td=""><td>9 2011</td><td>MDA</td><td>6</td><td>0</td><td>6</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></th<>	9 2011	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1							0
Laureter Lot 5       Lot 1       201       MDA       12       0       12 <th12< th="">       12       12</th12<>	Launcher - Lot	4																												
11       2014       MDA       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       12       0       0       1       0       1       1       0       0       0       12       0       0       12       0       0       12       0       0       1       1       1       0 <th< td=""><td>10 2012</td><td>MDA</td><td>6</td><td>0</td><td>6</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>6</td></th<>	10 2012	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
IFCC Tactical Station Group - Lot 2         12       2011       MDA       4       0       4	Launcher - Lot	6																												
12       2011       MDA       4       0       4          1       1	11 2014	MDA	12	0	12																							Α-	-	12
TFCC Tactical Station Group - Lot 3         13       2011       MDA       2       0       2       - <td>TFCC Tactical</td> <td>Station Grou</td> <td>p - Lot 2</td> <td></td> <td>-</td> <td></td> <td></td> <td></td>	TFCC Tactical	Station Grou	p - Lot 2																								-			
13       2011       MDA       2       0       2       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       1       1       0         TFCC Tactical Station Group - Lot 4	12 2011	MDA	4	0	4	-	-	-	-	-	-	-	1	1	-	-	-	-	-	2										0
O         N         D         J         F         M         A         M         J         J         A         S         O         N         D         J         F         M         A         M         J         J         A         S         O         N         D         J         J         A         S         O         N         D         J         J         A         S         O         N         D         J         F         M         A         M         S         C         O         E         A         P         A         U         U         U         E         C         O         E         A         E         A         E         A         E         A         E         A         E         A         E         A         E         A         D         J         A         S         C         O         E         A         E         A         E         A         E         A         E         A         D         J         I         J         A         S         C         O         E         A         E         A         U         U         U         E	TFCC Tactical	Station Grou	p - Lot 3																											
O N D J F M A M J J A S C O E A E A P A U U U E C O E A E A P A U U U E	13 2011	MDA	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0
C O E A E A P A U U U E C O E A E A P A U U U E	TFCC Tactical	Station Grou	p - Lot 4																											
						с	0	E	A	Е	Α	Р	Α	Ū	U	U	E	С	0	Е	Ā	E	Α	Р	A	Ū	U	U	E	

	p	opr	<b>iation</b> /		ion Sc et Acti							P-1			Num D	ber /	Title:								e: Mar Num AD			[DOI	DIC]:		
			Cost E (Units	lements in Each)		1		-		1	-	Fiscal Y	'ear 2013											Fiscal Y	ear 2014						
	M F R			PROC	ACCEPT PRIOR TO 1 OCT	BAL DUE AS OF	O C	N O	DE	J	F	M	A P	M	Calendar J U	Year 201 J U	AU	S E	O C T	N O	D E	J	F	M	A P	dar Year M A	J	IJ	AU	S E	
		FY	SERVICE	QTY	2012	1 OCT	т	v	С	N	В	A R	R	Y	N	L	G	Р		v	с	N	В	R	R	Y	N	L	G	Р	
1	14	2012	MDA	2	0	2		O     N     D     J     F     M     A     M     J     J     A     S     O     N     D     J       C     O     E     A     E     A     M     J     J     A     S     O     N     D     J       C     O     E     A     E     A     P     A     U     U     U     E     C     O     E     A       T     V     C     N     B     R     R     Y     N     L     G     P     T     V     C     N															- F	- M	- A	- M	- J	- J	- A	- S	+
							С Т																E B	AR	P R	A Y	Ŭ N	Ŭ L	U G	E P	

Exhibit F	P-21, Pro	oducti	ion Sc	hedu	le: PE	3 202	20 Mi	ssile	e De	fense	e Ag	enc	у													Dat	te: N	/larc	ch 20	)19					
	00D / 01 / 17														Num )	ıbeı	r / Ti	tle:									n Ni Aad		oer /	Title	[D(	DIC	;]:		
		lements in Each)					_				Fiscal	Year 2	015													Fiscal	Year 2	016							B A
			ACCEPT				_							C	alendaı	r Year	2015				_,						C	alend	ar Year	2016					L
0 F C R 0 # FY	M         PRIOR         BAL         O         N         D         J         F         M           F         TO 1         DUE         O         N         D         J         F         M           R         PROC         OCT         AS OF         C         O         E         A         E         A           #         FY         SERVICE         QTY         2014         1 OCT         T         V         C         N         B         R														J U N	J U	ı	A U G	S E P	O C T	N C V	) E		J A N	F E B	M A R	A P R	<b>)</b>	M A Y	J U N	J U L		A U G	S E P	A N C E
Interceptor - L	.ot 1							ċ		ľ																	Ċ								
1 2010	MDA	26	26	0																															0
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2 2011	MDA	22	22	0																															0
Interceptor - L	ot 4													r						r	-1						-1								
3 2012	1	46	0	46	-	-	-		-	-	-		-	-	3	3	-	-	-	-		2	7	-	-	-		-	-	12		-	-	-	22
Interceptor - L	1	r	r																												-				
4 2013	1	34	0	34	-	-	-		-	-	-		-	-	-		-	-	-	-			·	-	-	-		-	-	-	· ·	·	-	-	34
Interceptor - L		1																																	
5 2014	4	27	0	27	-	-	-		-	-	-		-	-	-		-	-	-	-			·	-	-	-		-	-	-			-	-	27
Interceptor - L	1	1	1	1																	_														
6 2015	1	38	0	38																		Α -	·	-	-	-		-	-	-		-	-	-	38
Interceptor - L	1	1	1																							1									
6 2016	1	36	0	36																		Α -	·	-	-	-		-	-	-		·	-	-	36
Interceptor - L	7	1	1	1																															
6 2017	1	47	0	47																															47
Interceptor - L	T	1	1	1																															
6 2018	1	109	0	109																															109
Launcher - Lo	-	1	1	1	-																														
7 2010	1	6	6	0																															0
Launcher - Lo	-					1																											_		
8 2011	1	6	5	1	1																														0
Launcher - Lo	1				-																														
9 2011	1	6	6	0			_					_				_															_				0
Launcher - Lo	1	6	0	6						4																									
10 2012		6	0	6	-		·	1	1	1		·	1																						0
Launcher - Lo	1	12	0	12	-	-	1 -		-	-		1	-	-	-		-	-	-	-			-	-	-		2	2	1	1		1	2	1	2
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TFCC Tactica	1	1p - Lot 2 4	4	0																														1	0
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13 2011		1p - Lot 3 2	2	0																															0
TFCC Tactica	1		2	0																															0
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					C T	O V	E C		A N	E B	A R	P	<b>,</b>	A Y	U N		ı	U G	E P	C T		) Е		A N	E B	A R	P	<b>,</b>	A Y	U N	U		U G	E P	

Exhibit P-21, Production Sc	hedu	le: PE	3 2020	) Mis	sile D	efens	se Age	ency											Date	e: Ma	rch 2	019				
Appropriation / Budget Acti 0300D / 01 / 17	Activity / Budget Sub Activity: P-1 Line Item Number / Title: MD07 / THAAD																		<b>Iter</b> THA		nber	Title	[DOI	DIC]:		
Cost Elements (Units in Each)							Fiscal Y	/ear 2015	5										Fiscal Y	'ear 2016	5					B
M ACCEPT PRIOR	BAI								,	Calendar	Year 20	5								Cale	ndar Yea	r 2016				L
0         F         TO 1           C         R         PROC         OCT           0         #         FY         SERVICE         QTY         2014	FY         SERVICE         QTY         2014         IDE         O         N         D         J         F         M         A         M         J           FY         SERVICE         QTY         2014         1 OCT         T         V         C         N         B         R         R         Y         N														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
14 2012 MDA 2 0	2	1	1																							
	2         0         2         1         1           0         N         D         J         F         M         A         M           C         O         E         A         E         A         P         A           T         V         C         N         B         R         R         Y													O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	L U N	J U L	A U G	S E P	

Ex	hibit F	P-21, Pr	oducti	ion Sc	hedu	le: Pl	3 202	0 Mis	sile D	efens	se Age	ency											Date	e: Ma	arch 20	)19				
		r <b>iation</b> / 01 / 17	Budge	et Acti	vity /	Bud	get S	ub Ac	ctivity	:			e <b>Item</b> FHAA		ber /	/ Title	e:						<b>Item</b> THA		nber /	Title	[DOI	)IC]:		
			Elements in Each)								Fiscal Y	'ear 2017	,										Fiscal Ye	ear 201	8					B A
				ACCEPT									C	Calendar	Year 20	017								Cale	endar Yea	r 2018				L
		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	J U L	A U G		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
Inte	rceptor - L	.ot 1		ì																										
	1 2010	MDA	26	26	0		_																							0
	rceptor - L	T			r																									
	2 2011	MDA	22	22	0																									0
	rceptor - L	1					1			1		1	1	1	r	-														
	3 2012	1	46	24	22	-	-	-	-	-	-	2	3	9	1	В														0
	rceptor - L	1					1			1		1		1		_														
	4 2013	1	34	0	34	-	-	-	-	-	-	-	-	-	4	4	8	7	1 -	•	4 -	7	3							0
	rceptor - L	1		1		1	1			1		1	1	1	1															
	5 2014	1	27	0	27	-	-	-	-	-	-	-	-	-	-			-	-	·   -	-	-	8	12	2 6	1				0
	rceptor - L	1		1	1	1	1			1	-		1	1	1							, , , , , , , , , , , , , , , , , , ,								
	6 2015	1	38	0	38	-	-	-	-	-	-	-	-	-	-	-		-		·	-	-	-	-	-	-	-	10	6	22
	rceptor - L	1		1	1	1	1		-1	1		1	1	1									T							
	6 2016	1	36	0	36	-	-	-	-	-	-	-	-	-	-			-		·	-	-	-	-	-	-	-	-	-	36
	rceptor - L	1		1	1	1						1	1	1									r							
	6 2017		47	0	47						Α-	-	-	-	-			-		·   -	-	-	-	-	-	-	-	-		47
	rceptor - L	T		1		1																1 1								
	6 2018	1	109	0	109															A -	-	-	-	-	-	-	-	-	-	109
	ncher - Lo	1		1	-	1																								
		MDA	6	6	0																									0
	ncher - Lo	1		1	1	1																								
	8 2011	1	6	6	0																									0
	ncher - Lo	1				1																								
	9 2011	1	6	6	0																									0
	ncher - Lo	1				1																								
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	ncher - Lo	1	1	1	1																									
	1 2014		12	10	2	1	1																							0
		I Station Gro	1		1	1	-																							
	2 2011		4	4	0																									0
		I Station Gro	· ·			1	_																							
	3 2011		2	2	0																									0
TFC	C Tactica	I Station Gro	up - Lot 4			-				-							-	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 U N	J U L	A U G		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	

Exhibit P-21, Production	Schedu	l <b>e:</b> P	B 202	20 Mis	sile D	efens	se Age	ency											Date	e: Ma	rch 20	019				
Appropriation / Budget A D300D / 01 / 17	ctivity /	Bud	get S	ub Ao	ctivity	/:		<b>Line</b> )07 / T			ber /	Title:							Item THA	<b>Nun</b> AD	hber /	Title	[DOI	DIC]:		
Cost Elements (Units in Each)							Fiscal Y	(ear 2017		·					·				Fiscal Y	'ear 2018						
ACC	PT								(	Calendar	Year 201	7								Caler	ndar Yea	r 2018				
M PRIC O F TO C R PROC OC O # FY SERVICE QTY 201	1 DUE T AS OF		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	
14 2012 MDA 2	2 0											•														
		O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

Appropriation / Budget Activity / Budget Sub Activity:P-1 Line Item Number / Title:Item Number0300D / 01 / 17MD07 / THAADTHAAD	er / Title [DODIC]:
Cost Elements (Units in Each)     Fiscal Year 2019       Fiscal Year 2020	B
ACCEPT Calendar Year 2019 Calendar	Year 2020 L
C R PROC OCT AS OF C O E A E A P A U U U E C O E A E A P A	J         J         A         S         N           A         U         U         U         E         C           Y         N         L         G         P         E
Interceptor - Lot 1	
1 2010 MDA 26 26 0	0
Interceptor - Lot 2	
2 2011 MDA 22 22 0	0
Interceptor - Lot 4	
3 2012 MDA 46 46 0	0
Interceptor - Lot 5	
4 2013 MDA 34 34 0	0
Interceptor - Lot 6	
5 2014 MDA 27 27 0	0
Interceptor - Lot 7	
6     2015     MDA     38     16     22     -     5     5     4     4	0
Interceptor - Lot 8	
6       2016       MDA       36       0       36       -       -       -       -       4       4       4       3       4       4       5	0
Interceptor - Lot 9	
6       2017       MDA       47       0       47       -       -       -       -       -       -       -       8       8       8       8	8 7 0
Interceptor - Lot 10	
6 2018 MDA 109 0 109	- 1 8 8 8 84
Launcher - Lot 1	
7 2010 MDA 6 6 0	0
Launcher - Lot 3	
8 2011 MDA 6 6 0	0
Launcher - Lot 2	
9 2011 MDA 6 6 0	0
Launcher - Lot 4	
10 2012 MDA 6 6 0	0
Launcher - Lot 6	
11 2014 MDA 12 12 0	0
TFCC Tactical Station Group - Lot 2	
12 2011 MDA 4 4 0	0
TFCC Tactical Station Group - Lot 3	
13 2011 MDA 2 2 0	0
TFCC Tactical Station Group - Lot 4	
C O E A E A P A U U U E C O E A E A P A	M J J A S A U U U E Y N L G P

۵nnro	IT P-21,	Proc	ducti	on Sc	hedu	e: PE	3 202	0 Mis	sile D	efens	se Age	ency											Date	<b>e:</b> Ma	rch 2	019				
	opriatio 0 / 01 / 1		udge	et Activ	vity /	Budg	get Sı	ub Ac	tivity	:		<b>Line</b> 07 / T			ber /	Title:							Iten THA	<b>n Nun</b> Add	nber /	Title	[DOI	DIC]:		
	C. ((	st Elen nits in E	ments Each)					·			Fiscal Y	'ear 2019							·				Fiscal Y	/ear 2020	)					l
				ACCEPT									C	Calendar	Year 201	9								Cale	ndar Yea	r 2020				
M ) F ; R ) # F	FY SERV	CE	PROC QTY	PRIOR TO 1 OCT 2018	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	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	
	012 MDA		2	2	0											•														
						O C T	N O V	DEC	J A N	F E B	M A R	A P R	M A Y	N C	J U L	A U G	S E P	O C T	N O V	D E C	ZÞĹ	F E B	M A R	A P R	M A Y	J U L	JUL	A U G	S E P	

Exhibit P	-21, Pro	oducti	on Sc	hedu	le: PE	3 202	0 Mis	sile D	efen	se A	genc	;y												Date	e: Ma	rch 2	019				
<b>Appropri</b> 0300D / 0		Budge	et Acti	vity /	Budg	jet Si	ub Ao	ctivity	/:				<b>tem</b> IAAI	<b>Nun</b> D	nber	·/Ti	tle:							Iten THA		nber	/ Title	e [DOI	DIC]:		
	Cost El (Units i	lements in Each)								Fisca	l Year 2	2021												Fiscal Y	ear 2022	2					BA
			ACCEPT										С	alenda	r Year	2021									Cale	ndar Yea	r 2022				Ê
M O F C R O # FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2020	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	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
Interceptor - Lo	ot 1																														
1 2010	MDA	26	26	0																										ľ	0
Interceptor - Lo					-																										
2 2011	MDA	22	22	0																										-	0
Interceptor - Lo		·																													
3 2012	MDA	46	46	0			_																								0
Interceptor - Lo	ot 5	·																													
4 2013	MDA	34	34	0			_																								0
Interceptor - Lo																															
5 2014	MDA	27	27	0			_																								0
Interceptor - Lo																															
6 2015	MDA	38	38	0			_																								0
Interceptor - Lo		1					-																								
6 2016	MDA	36	36	0																											0
Interceptor - Lo							-																								
6 2017	MDA	47	47	0																											0
Interceptor - Lo							1																								
6 2018	MDA	109	25	84	8	8	8	8 8	8	3	8	8	8	8	3	8	4														0
Launcher - Lot							_																						_		
7 2010	MDA	6	6	0																											0
Launcher - Lot	3																														
8 2011	MDA	6	6	0																											0
Launcher - Lot																															
9 2011	MDA	6	6	0																											0
Launcher - Lot		<b>.</b>																													1
10 2012	MDA	6	6	0																											0
Launcher - Lot		<b>.</b>																													1
11 2014	MDA	12	12	0			_																								0
TFCC Tactical		p - Lot 2																													
12 2011	MDA	4	4	0																											0
TFCC Tactical																															1
13 2011		2	2	0																											0
TFCC Tactical	Station Grou	ip - Lot 4				1	1	-	1					1					1	1			1	1	1			1	1		1
					O C T	N O V	D E C	J A N	F E B	M A R	1	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	

Appropriation	louuci	ion	Sch	edul	e: PE	3 202	0 Mis	sile D	efens	se Age	ency											Date	e: Ma	rch 20	019				
300D / 01 / 17	/ Budg	et A	Ctivi	ity /	Budg	get Si	ub Ac	tivity	:		<b>Line</b> 07 / T			ber /	Title:							<b>Iter</b> THA		nber /	/ Title	[DOI	DIC]:		
Cost (Uni	Elements s in Each)	·						·		Fiscal Y	/ear 2021											Fiscal Y	'ear 2022	2			·		E
		ACC	EPT									C	Calendar	Year 202	:1								Caler	ndar Yea	r 2022				
M F R W # FY SERVIC	PROC QTY	TC	О1   I СТ   А	BAL DUE S OF 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	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	
14 2012 MDA	2	2	2	0											•														
					O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	ЛС	JUL	A U G	S E P	O C T	N O V	D E C	J A N	F E B	MAR	A P R	M A Y	JUN	JUL	AUG	S E P	

Exh	ibit P-21, Production	n Schedule: F	PB 2020 Miss	ile Defense A	Agency				Da	te: March 20	19	
	oropriation / Budget	Activity / Buo	dget Sub Act	-	<b>P-1 Line Item</b> MD07 / THAAI		tle:			<b>m Number /</b> IAAD	Title [DODIC]	•
		Produc	tion Rates (Each /	Month)				Procurement Le	adtime (Months)			
MFR						Ini	tial			Rec	rder	
Ref #	Manufacturer Name - Location	MSR For 2020	1-8-5 For 2020	MAX For 2020	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Lockheed Martin - Troy, AL	1	4	8	6	6	16	22	6	4	27	31
2	Lockheed Martin - Troy, AL	1	4	8	6	6	28	34	6	4	27	31
3	Lockheed Martin - Troy, AL	1	4	8	6	11	36	47	6	11	36	47
4	Lockheed Martin - Troy, AL	1	4	8	6	12	37	49	6	12	37	49
5	Lockheed Martin - Troy, AL	1	4	8	6	3	43	46	6	3	43	46
6	Lockheed Martin - Troy, AL	1	4	8	6	12	31	43	6	12	31	43
	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
9	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
11	Lockheed Martin - Camden, AR	1	1	2	6	6	22	28	6	4	21	25
12	Lockheed Martin - Camden, AR	1	2	2	6	6	26	32	6	4	24	28
	Lockheed Martin - Camden, AR	1	1	1	6	10	25	35	6	4	24	28
14	Lockheed Martin - Camden, AR	1	1	1	6	10	27	37	6	3	24	27

#### Remarks:

- Max Production rate is 8 at normal capacity.

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

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

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

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

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

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

Exhibit P-21, Production Schedule: PB 2020 Missile Defen	nse Agency	Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD
MD07 - THAAD	UNCLASSIFIED	Volumo 2b

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Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	fense Agen	су				Date: M	arch 2019		
Appropriation / Budget Activity 0300D: Procurement, Defense-Wi Equipment, Missile Defense Agen	ide / BA 01:			A 17: Major	1	Line Item N 8 / Ground I			·			
ID Code (A=Service Ready, B=Not Service Ready):	A		Program Eler	ments for Co	de B Items: 06	603882C		Other Relate	d Program Ele	ements: 0603	882C	
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	0	10	16	-	-	-	4	8	8	10	Continuing	Continuing
Gross/Weapon System Cost (\$ in Millions)	0.000	227.000	505.600	124.471	-	124.471	209.584	532.341	535.718	257.686	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	0.000	47.000	88.000	115.000	-	115.000	-	113.882	114.516	45.799	Continuing	Continuing
Net Procurement (P-1) (\$ in Millions)	0.000	180.000	417.600	9.471	-	9.471	209.584	418.459	421.202	211.887	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	47.000	88.000	115.000	-	-	-	113.882	114.516	45.799	32.776	Continuing	Continuing
Total Obligation Authority (\$ in Millions)	47.000	268.000	532.600	9.471	-	9.471	323.466	532.975	467.001	244.663	Continuing	Continuing
(The following	g Resource Sum	nary rows are fo	or informational p	urposes only. Th	ne corresponding	g budget request	s are documente	ed elsewhere.)				
Initial Spares (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	0.000	22.700	31.600	-	-	-	52.396	66.543	66.965	25.769	Continuing	Continuing

#### **Description:**

The Ground-based Midcourse Defense (GMD) element of the Ballistic Missile Defense System (BMDS) provides combatant commanders with a continuously available (24 hours a day, 365 days a year) capability to defend the Homeland against limited Intercontinental Ballistic Missile (ICBM) attacks. The GMD capability consists of Ground Based Interceptors (GBI), GMD Fire Control system (GFC), GMD Communications Network (GCN), In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) and ground Launch Support Systems (LSS). Each GBI delivers a single kill vehicle to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GFC consists of fire control nodes in Fort Greely, Alaska and Missile Defense Integration and Operations Center (MDIOC) Colorado Springs, Colorado.

The Missile Defense Agency (MDA) will expand the number of operationally deployed GBIs from 44 to 64. To accomplish this, MDA will build a new 20 silo Missile Field #4 at Fort Greely, Alaska as well as procure 20 additional Ground Based Interceptors with Configuration 2 boosters and Redesigned Kill Vehicles for the warfighter to defeat developing threats. The procurement funded efforts in MD08 include 20 Missile Field #4 silo interface vaults and silos, 2 Missile Field #1 silo interface vaults and silos and 20 All Up Round GBIs and Redesigned Kill Vehicles. The RKV-equipped GBI will incorporate an obsolescence redesign of the 50 inch Configuration 2 (C2) boost vehicle and the new RKV to improve GBI fleet capacity and reliability.

The FY 2018 budget included \$56M Advanced Procurement for long lead materials and components for 4 GBIs, \$32 million for long lead materials and equipment to construct 10 Silo Interface Vaults (SIVs) and silos for Missile Field #4 and \$180M to procure, install, and test 10 SIVs and silos for Missile Field #4.

The FY 2019 budget included \$115 million Advanced Procurement for long lead materials and components for 8 GBIs, \$220.6 million to procure, install and test 12 SIVs and silos for Missile Field 1 (quantity 1) and the new Missile Field #4, and \$197M to procure 4 GBIs.

The FY 2020 Budget request of \$9.471 million provides mitigation of GBI obsolescence-driven redesign and testing in support of GBI procurements.

Redesigned Kill Vehicle development technical issues has delayed the remaining procurement of GBIs to FY21.

Exhib	it P-40, Budget Line Item Justificatio	n: PB 2020 M	issil	e Defe	nse Agency			Date: M	arch 2019	
0300E	<b>Opriation / Budget Activity / Budget S</b> D: Procurement, Defense-Wide / BA 01: ment, Missile Defense Agency		nent	/ BSA		P-1 Line Item Nu MD08 / Ground B		'		
ID Code	e (A=Service Ready, B=Not Service Ready): A	Pre	ogra	m Eleme	ents for Code B Ite	ms: 0603882C	Other I	Related Program Ele	ements: 0603882C	
Line Ite	em MDAP/MAIS Code: 362									
	Exhibits Schedule				Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)			
P-5	Ground Based Midcourse		Α		0 / 0.000	- / 0.000	- / 0.000	- / 124.471	- / -	- / 124.471
P-5	Ground Based Interceptors (GBI) [None]	P-5a, P-21	Α		0 / 0.000	- / 0.000	4 / 253.000	- / -	- / -	- / -
P-5	Silo Interface Vaults/Silos	P-5a, P-21	Α		0 / 0.000	10 / 227.000	12 / 252.600	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost			,	0 / 0.000	10 / 227.000	16 / 505.600	- / 124.471	- / -	- / 124.471
*Title rep	presents 1) the Number / Title for Items; 2) the Number / tals in this Exhibit P-40 set may not be exact or sum exa			ition; and/	or 3) the Number / Title	e (Modification Type) for N	Modifications.	1	1	

Justification: N/A

LI MD08 - Ground Based Midcourse Missile Defense Agency

Volume 2b - 22

	Analysis	s: PB 20	20 Missi	le Defens	se Agen	су								Date: N	/larch 20 <sup>-</sup>	19		
Appropriation / B 0300D / 01 / 17	Budget A	ctivity /	Budget	Sub Acti	vity:		L <b>ine Iter</b> 8 / Grour			-						<b>Fitle [DO</b> /lidcourse	-	
ID Code (A=Service Read	dy, B=Not Servi	ce Ready):	Ą						М	DAP/MAIS	Code:		<sup>1</sup>					
F	Resource	Summ	ary			Prior Yea	ars	FY 20	018	FY	2019	FY 2	2020 Bas	se l	Y 2020	000	FY 2020	Total
Procurement Quantity (Un	its in Each)						0		-		-			-		-		-
Gross/Weapon System Co	ost (\$ in Million	s)					0.000		0.000		0.00	0	124	1.471		-		124.471
Less PY Advance Procure	ement (\$ in Mil	lions)					0.000		0.000		0.00	0	115	5.000		-		115.000
Net Procurement (P-1) (\$	in Millions)						0.000		0.000		0.00	0	ç	9.471		-		9.471
Plus CY Advance Procure	ement (\$ in Mil	lions)					0.000		0.000		0.00	0		-		-		-
Total Obligation Authori	ty (\$ in Millions	;)					0.000		0.000		0.00	0	ç	9.471		-		9.471
(Ti	he following l	Resource Su	ummary row	s are for info	rmational p	urposes only	y. The corres	ponding bud	dget request	s are docume	ented elsewh	ere.)		ĺ				
Initial Spares (\$ in Millions)							-	·	-		-			-		-		-
Gross/Weapon System Ur	nit Cost (\$ in I	Aillions)					0.000		0.000		0.00	0		-		-		-
Note: Subtotals or Totals i	1	P-5 may no Prior Years		or sum exactl	y due to rou FY 2018	inding.		FY 2019		FY	2020 Bas	9	F١	( 2020 O	co	F	Y 2020 Tot	al
Note: Subtotals or Totals i Cost Elements	1	,		Unit Cost	,	Total Cost (\$ M)	Unit Cost (\$ M)	FY 2019 Qty (Each)	Total Cost (\$ M)	FY Unit Cost (\$ M)	2020 Base Qty (Each)	e Total Cost (\$ M)	FY Unit Cost (\$ M)	( 2020 O Qty (Each)	CO Total Cost (\$ M)	F` Unit Cost	Y 2020 Tot Qty (Each)	al Total Cost (\$ M)
	F Unit Cost	Prior Years	S Total Cost	Unit Cost	FY 2018 Qty	Total Cost		Qty	Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost
Cost Elements	F Unit Cost	Prior Years	S Total Cost	Unit Cost	FY 2018 Qty	Total Cost		Qty	Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost
Cost Elements Hardware Cost	F Unit Cost	Prior Years	S Total Cost	Unit Cost	FY 2018 Qty	Total Cost		Qty	Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost
Cost Elements Hardware Cost Recurring Cost Ground Based	F Unit Cost (\$ M)	Prior Years	Total Cost (\$ M)	Unit Cost (\$ M)	FY 2018 Qty	Total Cost		Qty	Cost	Unit Cost (\$ M)	Qty	Total Cost (\$ M)	Unit Cost	Qty	Total Cost (\$ M)	Unit Cost (\$ M)	Qty	Total Cost (\$ M)
Cost Elements Hardware Cost Recurring Cost Ground Based Interceptors (GBI)	Unit Cost (\$ M)	Prior Years	S Total Cost (\$ M)	Unit Cost (\$ M)	FY 2018 Qty (Each)	Total Cost		Qty	Cost (\$ M) -	Unit Cost (\$ M) 115.000	Qty (Each)	<b>Total</b> <b>Cost</b> (\$ <i>M</i> ) 115.000	Unit Cost (\$ M)	Qty	Total Cost (\$ M)	Unit Cost (\$ M) 115.000	Qty	Total Cost (\$ M) 115.000
Cost Elements Hardware Cost Recurring Cost Ground Based Interceptors (GBI) Subtotal: Recurring Cost Subtotal: Hardware Cost Support Cost	F Unit Cost (\$ M) - -	Prior Years	S Total Cost (\$ M) - -	Unit Cost (\$ M) - -	FY 2018 Qty (Each) -	Total Cost		Qty	Cost (\$ M) - -	Unit Cost (\$ M) 115.000 - -	Qty (Each)	Total Cost (\$ M) 115.000 115.000 115.000	Unit Cost (\$ M) - -	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M) 115.000 - -	Qty (Each) 1 -	Total Cost (\$ M) 115.000 115.000
Cost Elements Hardware Cost Recurring Cost Ground Based Interceptors (GBI) Subtotal: Recurring Cost Subtotal: Hardware Cost Support Cost Obsolescence	F Unit Cost (\$ M) - -	Prior Years	S Total Cost (\$ M) - -	Unit Cost (\$ M) - -	FY 2018 Qty (Each) -	Total Cost		Qty	Cost (\$ M) - -	Unit Cost (\$ M) 115.000 -	Qty (Each) 1 - - 1	Total Cost (\$ M) 115.000 115.000 115.000 9.471	Unit Cost (\$ M) - -	Qty (Each)	Total Cost (\$ M) - - -	Unit Cost (\$ M) 115.000 -	Qty	Total Cost (\$ M) 115.000 115.000 9.47
Cost Elements Hardware Cost Recurring Cost Ground Based Interceptors (GBI) Subtotal: Recurring Cost Subtotal: Hardware Cost Support Cost	F Unit Cost (\$ M) - -	Prior Years	S Total Cost (\$ M) - -	Unit Cost (\$ M) - - -	FY 2018 Qty (Each) -	Total Cost		Qty	Cost (\$ M) - -	Unit Cost (\$ M) 115.000 - -	Qty (Each)	Total Cost (\$ M) 115.000 115.000 115.000	Unit Cost (\$ M) - -	Qty (Each)	Total Cost (\$ M) - -	Unit Cost (\$ M) 115.000 - -	Qty (Each) 1 -	Total Cost (\$ M) 115.000 115.000

Remarks:

N/A

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	le Defen	se Agen	су								Date: M	arch 20'	19		
Appropriation / E 0300D / 01 / 17	Budget A	ctivity /	Budget	Sub Act	ivity:			n <b>Numbe</b> nd Based								<b>Fitle [DO</b> ntercepto		[None]
ID Code (A=Service Rea	dy, B=Not Servi	ce Ready):	4						М	DAP/MAI	S Code:							
	Resource	Summa	ary		I	Prior Yea	ars	FY 20	18	FY	2019	FY	2020 Bas	se F	Y 2020 (	000	FY 2020	) Total
Procurement Quantity (Un	its in Each)						0		-			4		-		-		-
Gross/Weapon System C	ost (\$ in Million	s)					0.000		0.000		253.00	0		-		-		-
Less PY Advance Procure	ement (\$ in Mil	lions)					0.000		0.000		56.00	0		-		-		-
Net Procurement (P-1) (\$	in Millions)						0.000		0.000		197.00	0		-		-		
Plus CY Advance Procure	ement (\$ in Mil	lions)					0.000		56.000		115.00	0		-		-		-
Total Obligation Authori	ty (\$ in Millions	;)					0.000		56.000		312.00	0		-		-		-
(7	he following I	Resource Su	Immary row	s are for info	rmational p	urposes only	y. The corres	ponding budg	get request	s are docum	nented elsewl	nere.)						
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System U	nit Cost (\$ in I	Aillions)					0.000		0.000		63.25	0		-		-		-
Note: Subtotals or Totals	in this Exhibit	P-5 may no	t he exact o	r sum exactl	v due to rou	Inding							1			1		
	1	Prior Years			FY 2018	inding.		FY 2019		F	Y 2020 Bas	e	F	Y 2020 OC	:0	F	Y 2020 Tot	al
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware Cost						1											1	
Recurring Cost														-				
Ground Based Interceptors <sup>(†)</sup>	-	-	-	-	-	-	63.250	4	253.000	-	-	-	-	-	-	-	-	
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	253.000	-	-	-	-	-	-	-	-	
Subtotal: Hardware Cost	-	-	-	-	-	-	-	-	253.000	-	-	-	-	-	-	-	-	
Gross/Weapon System Cost	0.000	0	0.000	0.000	-	0.000	63.250	4	253.000	-	-	-	-	-	-	-	-	
Remarks: N/A																		·

 $^{(\dagger)}$  indicates the presence of a P-5a

Exhibit P-5a, Procuremer	nt His	story ar	nd Planning: PB 2020 M	issile Defense Ager	юу			Date	: March 20	019		
Appropriation / Budget A 0300D / 01 / 17	ctivi	ty / Buc		P-1 Line Item Num MD08 / Ground Bas					<b>Number</b> / nd Based		[ <b>DODIC]</b> : eptors (GB	I) [None]
Cost Elements	0 C 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 Date
Ground Based Interceptors - Hardware <sup>(†)</sup>		2019	Boeing / Huntsville	C / CPIF	Huntsville	Oct 2018	Jan 2019	4	63.250	N		Jan 2018

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

	t P-	21, Pro	oducti	on Sc	hedu	le: PE	3 202	0 Mis	sile D	efens	e Age	ency											Date	e: Ma	rch 20	)19				
<b>Approp</b> 0300D		ation / E 1 / 17	Budge	et Acti	vity /	Budę	get Sı	ıb Ac	tivity	:				Num d Bas									<b>Iterr</b> Gro	<b>Nun</b> und B	<b>1ber</b> / ased	Title Interc	[DOD ceptor	<b>)IC]:</b> s (GB	61) [No	one]
		Cost El (Units ir	ements n Each)					-			Fiscal Y	'ear 2019											Fiscal Y	'ear 2020						B
м				ACCEPT PRIOR	BAL			1			1		(	Calendar	Year 201	19		1	·	1			1	Caler	ndar Year	r 2020				L
M O F C R O # F)	Y	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	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
		nterceptors -	- Hardware																·											
1 201	19 N	MDA	4	0	4		-	-	4							-	1	1	· · · ·				1	r		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 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	

Ex	nibit P-21, Production	n Schedule: F	PB 2020 Miss	ile Defense	Agency				C	ate: March 20	19	
	propriation / Budget	Activity / Buo	dget Sub Act	-	P-1 Line Item					em Number / Ground Based I	-	-
		Produc	tion Rates (Each /	/ Month)				Procurement Le	adtime (Months	)		
MFR						Ini	tial			Rec	order	
Ref #	Manufacturer Name - Location	MSR For 2020	1-8-5 For 2020	MAX For 2020	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	Boeing - Huntsville	1	1	2	2 6	0	38	38		6 0	38	38
	in the Delivery Schedule indicat e: Due to space limitations, qua			andar are truncate	d and rounded based	on the maximum	quantity in the cale	ndar as follows. If t	he maximum qu	antity is less than or	equal to than 0 000	all quantities

thousand). If the maximum quantity is between 10,000 and 900,000 all quantities are shown in billions (rounded to the nearest million).

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	le Defen	se Ageno	су								Date:	March 201	19		
Appropriation / E 0300D / 01 / 17	Budget A	ctivity /	Budget	Sub Act	ivity:	1		<b>n Numbe</b> nd Based							lumber / 1 terface Va			
ID Code (A=Service Rea	dy, B=Not Servi	ce Ready):	4						M	DAP/MAIS	S Code:							
	Resource	Summa	ary		F	Prior Yea	ars	FY 20	18	FY	2019	FY	2020 Ba	se	FY 2020 (	000	FY 2020	) Total
Procurement Quantity (Un	nits in Each)						0		10		1	2		-		-		
Gross/Weapon System C	ost (\$ in Million	s)					0.000		227.000		252.60	0		-		-		·
Less PY Advance Procure	ement (\$ in Mil	lions)					0.000		47.000		32.00	0		-		-		
Net Procurement (P-1) (\$	in Millions)						0.000		180.000		220.60	0		-		-		-
Plus CY Advance Procure	ement (\$ in Mil	lions)					47.000		32.000		0.00	0		-		-		-
Total Obligation Authori	ity (\$ in Millions	;)					47.000		212.000		220.60	0		-		-		
(7	The following I	Resource Su	Immary row	s are for info	ormational pu	irposes only	. The corres	ponding bud	get request	s are docum	ented elsewł	nere.)						
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System U	nit Cost (\$ in I	Aillions)					0.000		22.700		21.05	0		-		-		
Note: Subtotals or Totals	in this Exhibit	P-5 may no	t be exact c	or sum exactl	y due to rou	nding.							1			1		
	F	Prior Years	;		FY 2018			FY 2019		F۱	( 2020 Bas	е	F	Y 2020 0	oco	F	Y 2020 Tot	tal
Cost Elements	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)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Hardware Cost		. ,									, , ,							
Non Recurring Cost																		
Silos <sup>(†)</sup>	-	-	-	22.700	10	227.000	21.050	12	252.600	-	-	-	-			-	-	
Subtotal: Non Recurring Cost	-	-	-	-	-	227.000	-	-	252.600	-	-	-	-			-	-	
Subtotal: Hardware Cost	-	-	-	-	-	227.000	-	-	252.600	-	-	-	-			-	-	
Gross/Weapon System	0.000	0	0.000	22.700	10	227.000	21.050	12	252.600	_	-	-	-			-	-	

Remarks:

N/A

 $^{(\dagger)}$  indicates the presence of a P-5a

Exhibit P-5a, Procureme	nt Hi	story a	nd Planning: PB 2020 M	lissile Defense Age	ency			Date:	March 20	)19		
Appropriation / Budget A 0300D / 01 / 17	ctivi	ity / Bud	lget Sub Activity:	P-1 Line Item Nu MD08 / Ground Ba					<b>Number</b> / nterface V			
Cost Elements	0 C 0	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Silos - Hardware <sup>(†)</sup>		2018	Boeing / AL/AK/AZ/CA/CO/VA	SS / CPIF	Huntsville, AL	Jan 2018	Sep 2019	10	22.700	Y	Sep 2018	Jan 2018
Silos - Hardware <sup>(†)</sup>		2019	Boeing / AL/AK/AZ/CA/CO/VA	SS / CPIF	Huntsville, AL	Jan 2018	Sep 2020	12	21.050	N	Sep 2018	Jan 2018

(†) indicates the presence of a P-21

	2	21,  Pro	ducti	on Sc	hedu	e: Pt	5 ZUZ		sile D	erense	e Age	ency											Date	: war	ch 20	19				
<b>Approp</b> 0300D /			Budge	et Acti	vity /	Budg	get Si	ub Ac	tivity	:					<b>ber</b> / ˈ ed Mi										<b>ber /</b> ace Va		<b>[DOD</b> Silos	IC]:		
		Cost Ele (Units in	ements Each)								Fiscal Y	ear 2018											Fiscal Ye	ar 2019						BA
м				ACCEPT PRIOR	BAL			1					С	alendar	Year 201	8								Calen	dar Year	2019				L
M O F C R O # FY	r s	SERVICE	PROC QTY	TO 1 OCT 2017	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	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
Silos - Hard																														,
	18 ME		10	0					Α-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	
1 201	19 M	IDA	12	0	12	•		<b>_</b>	A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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	л Л Л	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	

	MD08 / Ground Based Midcourse     Silo Interface Vaults/Silos       Cost Elements (Units in Each)     ACCEPT PRIOR TOT SCT QTY     ACCEPT DUE DUE SCT QTY     Fiscal Year 2020     Fiscal Year 2020     Fiscal Year 2021     Fiscal Year 2021     Fiscal Year 2021     Fiscal Year 2021       M F F R     ACCEPT PRIOR TOT QTY     ACCEPT DUE DUE CC     N     D     J     F R     M     A R     M     J     J     A R     S R     O     N     D     J     F R     M     A R     N     J     J     A R     S R     O     N     D     J     F R     M     A R     N     J     J     A R     S R     O     N     D R     J     F R     M     A R     N     J     J     A R     S R     O     N     D R     J     F R     M     A R     N     J     J     A R     S R     O     N     D R     J     A R     S     O     N     D R     J     A R     S R     C     N     J     A R     S     C     N     D R     J	Exl	hil	bit	P-21	, Pro	oduct	ion S	Sched	ule:	PB	202	0 Mis	ssile [	Defens	-													e: Ma						
Image: Figure	Image: Final						Budg	et Ac	tivity	/ Βι	ıdg	et Sı	np V	ctivit	<b>y</b> :																				
M       F       N       PROC       N       D       D       J       F       M       A       PROC       N       D       D       J       A       S       O       N       D       J       A       P       A       B       A       P       A </th <th>M       F       M       A       M       A       S       O       N       D       D       D       D       D       A       P       A       P       A       S       O       N       D       A       P</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>1</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Fiscal \</th> <th>Year 2020</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>1</th> <th></th> <th>Fiscal Y</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>B</th>	M       F       M       A       M       A       S       O       N       D       D       D       D       D       A       P       A       P       A       S       O       N       D       A       P							1								Fiscal \	Year 2020									1		Fiscal Y							B
#       FY       SERVICE       QTY       2019       1 OCT       T       V       C       N       B       R       Y       N       L       G       P       E         illos - Hardware       illos - Variable       MDA       10       4       6             6                  10         10         10	#       FY       SERVICE       QTY       2019       1 OCT       T       V       C       N       B       R       R       Y       N       L       G       P       T       V       C       N       B       R       R       Y       N       L       G       P       T       V       C       N       B       R       Y       N       L       G       P       T       V       C       N       B       R       Y       N       L       G       P       T       V       C       N       B       R       R       Y       N       L       G       P       T       V       C       N       B       R       R       Y       N       L       G       P       T       V       C       N       B       R       R       Y       N       L       G       P       T       V       C       N       B       R       R       Y       N       L       G       P       T       V       C       N       L       G       P       T       V       C       N       L       G       P       T       D       D       D		M					ACCE	PT R BAI				1	_			1	<b>C</b>	Calendar	Year 20	20		[	1	1			1	Caler	idar Year	r 2021	[	1		
ilos - Hardware 1 2018 MDA 10 4 6	os - Hardware 1 2018 MDA 10 4 6 6 1 2019 MDA 12 0 12	0   F C   F O   #	F R #	FY	SER	VICE		TO 1 OCT	DUE AS C	E (	c	N O V	D E C		E	M A R	P	M A Y	J U N	U	A U G	S E P	O C T	0	D E C	J A N	E	A	A P R	M A Y	U	J U L	A U G	E	
1       2019       MDA       12       0       12       -       -       -       -       -       -       -       -       -       10         1       2019       MDA       12       0       12       -       -       -       -       -       -       10         1       2019       MDA       12       0       12       -       -       -       -       -       -       -       -       10	1       2019       MDA       12       0       12       -       -       -       -       -       -       -       -       -       -       -       -       10         1       2019       MDA       12       0       12       -       -       -       -       -       -       -       -       -       -       10         1       2019       MDA       12       0       14 <t< td=""><td>_</td><td></td><td>Hardw</td><td>are</td><td></td><td>1</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td><td>-</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1 1</td><td></td><td></td><td></td><td>1</td><td>1</td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td></t<>	_		Hardw	are		1	1						_		-	1	1			1	1 1				1	1				1				
							10	)	4	6	-	-	-	-	-	-	-	-	-	-	-	6													
0       N       D       J       F       M       A       M       J       J       A       S       O       N       D       J       F       M       A       S       O       N       D       J       F       M       J       J       A       S       O       N       D       J       F       M       A       N       J       J       A       S       O       N       D       J       F       M       A       N       U	O     N     D     J     F     M     A     M     J     J     A     S     O     N     D     J     F     M     A     M     J     J     A     S       C     V     C     N     B     R     R     Y     N     L     O     F     T     V     C     N     B     R     R     N     L     G       C     V     C     N     B     R     R     Y     N     L     G     F     T     V     C     N     B     R     R     N     L     G		1	2019	MDA		12	2	0	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	10	
											O C T	0	E	Α	E	A	P	Α	U	U	U	E	С	0	D E C	J A N	E	Α	P	M A Y	U	U	A U G	S E P	

Ap	hibit P-21, Production propriation / Budget 0D / 01 / 17			ivity: F	Agency <b>P-1 Line Item</b> MD08 / Ground				l	<b>Date:</b> March 20 t <b>em Number</b> / Silo Interface Va	Title [DODIC	]:
		Product	tion Rates (Each /	Month)				Procurement Le	adtime (Months	i)		
MFR						In	itial			Rec	order	
Ref #	Manufacturer Name - Location	MSR For 2020	1-8-5 For 2020	MAX For 2020	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	Boeing - AL/AK/AZ/CA/CO/ VA	1	1	6	6	C	20	20		6 0	20	2

Exhibit P-40, Advance Procurer	nent Budge	et Line Item	n Justificati	i <b>on:</b> PB 202	20 Missile I	Defense Age	ency		Date: M	arch 2019		
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-W Equipment, Missile Defense Ager	ide / BA 01:			A 17: Major	1	Line Item N 08 / Ground						
Program Elements for Code B Items: 06	603882C				Othe	r Related Prog	ram Elements	:0603882C				
Line Item MDAP/MAIS Code: 362					·							
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Gross/Weapon System Cost (\$ in Millions)	47.000	88.000	115.000	-	-	-	113.882	114.516	45.799	32.776	Continuing	Continuing
Net Procurement (P-1) (\$ in Millions)	47.000	88.000	115.000	-	-	-	113.882	114.516	45.799	32.776	Continuing	Continuing
Total Obligation Authority (\$ in Millions)	47.000	88.000	115.000	-	-	-	113.882	114.516	45.799	32.776	Continuing	Continuing

#### **Description:**

Advanced Procurement required to expand the number of operationally deployed GBIs from 44 to 64. To accomplish this, MDA will build a new 20 silo Missile Field #4 at Fort Greely, Alaska as well as procure 20 additional Ground Based Interceptors with Configuration 2 boosters and Redesigned Kill Vehicles. The procurement funded efforts in MD08 include 20 Missile Field #4 silo interface vaults and silos, 2 Missile Field #1 silo interface vaults and silos and 20 All Up Round GBIs.

Exhibit Type         Exhibits Schedule         Prior Years         FY 2018         FY 2019         FY 2020 Base         FY 2020 OCO         FY 2020 Total           Exhibit Type         ID         MDAP/ (ED         MDAP/ CD         Quantity / Total Cost (Each) / (\$ M)	Exhib	it P-40, Advance Procurement Budget Line Item J	usti	ficatio	<b>n:</b> PB 2020 Mis	sile Defense Ager	псу	Date: N	larch 2019	
V         Line Item MDAP/MAIS Code: 362         Exhibits Schedule       Prior Years       FY 2018       FY 2019       FY 2020 Base       FY 2020 OCO       FY 2020 Total         Exhibits Schedule       Prior Years       FY 2018       FY 2019       FY 2020 Base       FY 2020 OCO       FY 2020 Total         Exhibits Schedule       ID       MDAP/ CD       Quantity / Total Cost (Each) / (\$ M)       Quantity /	0300D	Procurement, Defense-Wide / BA 01: Major Equipm	nent	/ BSA						
Exhibits Schedule         Prior Years         FY 2018         FY 2019         FY 2020 Base         FY 2020 OC0         FY 2020 Total           Exhibit         ID         MDAP/ MAIS         Quantity / Total Cost (Each) / (S M)         Quantity / Total Cost (Each) / (S M) <td< th=""><th>Program</th><th>n Elements for Code B Items: 0603882C</th><th></th><th></th><th></th><th>Other Related Progra</th><th>am Elements: 06038</th><th>82C</th><th></th><th></th></td<>	Program	n Elements for Code B Items: 0603882C				Other Related Progra	am Elements: 06038	82C		
Exhibit Type         Title*         MDAP/ NAIS Code         Quantity / Total Cost (Each / (\$ M)         Quantity / Total Cost (Each	Line Ite	m MDAP/MAIS Code: 362								
Exhibit Type       Title*       ID Code       MAIS Code       Quantity / Total Cost (Each / (S M)       Quantity / Total Cost (Each /		Exhibits Schedule			Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
P-10         Ground Based Interceptors (GBI) [None]         0         0/0.000         - / 56.000         4 / 115.000         - / -         - /		Title*	ID CD	MAIS						Quantity / Total Cost (Each) I (\$ M)
P-10         Silo Interface Vaults/Silos         0 / 47.000         10 / 32.000         12 / 0.000         - / - <td>P-10</td> <td>Ground Based Midcourse</td> <td></td> <td></td> <td>0 / 0.000</td> <td>- / 0.000</td> <td>- / 0.000</td> <td>- / -</td> <td>- / -</td> <td>- / -</td>	P-10	Ground Based Midcourse			0 / 0.000	- / 0.000	- / 0.000	- / -	- / -	- / -
P-40       Total Gross/Weapon System Cost       0 / 47.000       10 / 88.000       16 / 115.000       - / -       -       -       - / - </td <td>P-10</td> <td>Ground Based Interceptors (GBI) [None]</td> <td></td> <td></td> <td>0 / 0.000</td> <td>- / 56.000</td> <td>4 / 115.000</td> <td>- / -</td> <td>- / -</td> <td>- / -</td>	P-10	Ground Based Interceptors (GBI) [None]			0 / 0.000	- / 56.000	4 / 115.000	- / -	- / -	- / -
*Title represents the P-10 Title for Advance Procurement.	P-10	Silo Interface Vaults/Silos			0 / 47.000	10 / 32.000	12 / 0.000	- / -	- / -	- / -
	P-40	Total Gross/Weapon System Cost			0 / 47.000	10 / 88.000	16 / 115.000	- / -	- / -	- / -
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.	*Title rep	resents the P-10 Title for Advance Procurement.			•			•		
	Note: Tot	tals in this Exhibit P-40 set may not be exact or sum exactly due to rounding								

#### Justification:

Redesigned Kill Vehicle development technical issues delays the procurement of GBIs to FY21.

Exhibit P-10, Advance Procuremen Defense Agency	t Requirer	nents Analysi	s (page 1 ·	- Budget Funding Justi	i <b>fication):</b> PB 2020 Miss	ile Date: March 2019	
Appropriation / Budget Activity / Budget Activit	udget Sub	Activity:		Item Number / Title: Ground Based Midcourse	,	P-5 Number / Titl Ground Based Mi	
First System (2020) Award Date: January 2018	First Syste April 2021	em (2020) Comple	etion Date:		Interval Between S 3 Months	ystems:	
Ground Based Midcourse		Production L (Months		Prior Years (Each)	FY 2018 (Each)	FY 2019 (Each)	FY 2020 (Each)
Quantity			38	0	-	-	-
Cost Elements		When Rec (Months		Prior Years (\$ M)	FY 2018 (\$ M)	FY 2019 (\$ M)	FY 2020 (\$ M)
Other							
Ground Based Interceptor - FY2021			0	-	-	-	0.000
Ground Based Interceptor - FY2022			0	-	-	-	0.000
RKV Manufacturing - FY2023			0	-	-	-	0.000
RKV Manufacturing - FY2024			0	-	-	-	0.000
Total: Other				0.000	0.000	0.000	0.000
Total Advance Procurement/Obligation Auth	nority			0.000	0.000	0.000	-

Exhibit P-10, Advance Procurement Requirements Analy Defense Agency	sis (page 2 - Bu	dget Funding .	Justification):	PB 2020 Missile	Date: Marc	:h 2019	
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17		P-5 Number / Title: Ground Based Midcourse					
				FY 20	20		
Cost Elements	QPA (Each)	Production Leadtime (Months)	Unit Cost (\$ M)	Contract Forecast Date	<b>2020 Qty</b> (Each)	For FY	Total Cost Request (\$ M)
Other		• •				• •	
Ground Based Interceptor - FY2021	1					2022	0.000
Ground Based Interceptor - FY2022	1					2023	0.000
RKV Manufacturing - FY2023	1					2024	0.000
RKV Manufacturing - FY2024	1					2024	0.000
Total: Other		·		· · ·			0.000
Total Advance Procurement/Obligation Authority							-

**Description:** Long lead materials for Ground Based Interceptors

Exhibit P-10, Advance Procurem Defense Agency	ent Require	ments Analysi	is (page 1 ·	- Budget Funding Just	fication): PB 202	20 Missile	Date: March 2019	
Appropriation / Budget Activity / 0300D / 01 / 17	Budget Sub	Activity:		Item Number / Title: Ground Based Midcourse			P-5 Number / Title Ground Based Inte	erceptors (GBI) [None]
First System (2020) Award Date: January 2018	First Syst April 2021	tem (2020) Compl	etion Date:		Interval Be 3 Months	tween Syste	ems:	
Ground Based Interceptors (	GBI)	Production L (Month)		Prior Years (Each)	<b>FY 2018</b> (Each)		FY 2019 (Each)	FY 2020 (Each)
Quantity			38	0		-	4	-
Cost Elements		When Rec (Month)	•	Prior Years (\$ M)	FY 2018 (\$ M)		FY 2019 (\$ M)	FY 2020 (\$ M)
Other								
Hardware FY18			0	-		56.000	-	0.000
Hardware FY19			0	-		-	115.000	0.000
Total: Other				0.000		56.000	115.000	0.000
Total Advance Procurement/Obligation A	Authority			0.000		56.000	115.000	-

Exhibit P-10, Advance Procurement Requirements Analy Defense Agency	sis (page 2 - B	udget Funding	Justification):	PB 2020 Missile	Date: Marc	h 2019	
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17		m Number / Titl und Based Midco			P-5 Number Ground Bas		s (GBI) [None]
				FY 20	20		
Cost Elements	<b>QPA</b> (Each)	Production Leadtime (Months)	Unit Cost (\$ M)	Contract Forecast Date	<b>2020 Qty</b> (Each)	For FY	Total Cost Request (\$ M)
Other							
Hardware FY18	·	1					0.00
Hardware FY19		1					0.00
Total: Other							0.00
Total Advance Procurement/Obligation Authority							-

**Description:** Long lead materials for Ground Based Interceptors

Exhibit P-10, Advance Procureme Defense Agency	ent Require	nents Analysi	is (page 1 ·	- Budget Funding Justi	ification): PB	2020 Missile	Date: March 2019		
Appropriation / Budget Activity / 0300D / 01 / 17	Budget Sub	Activity:		Item Number / Title: Ground Based Midcourse	9		P-5 Number / Title Silo Interface Vau	••	
First System (2020) Award Date: January 2018	First Syst Septembe	<b>em (2020) Compl</b> r 2019	etion Date:		Interva 12 Mon	I Between Syste ths	ems:		
Silo Interface Vaults/Silos		Production L (Month)		Prior Years (Each)	FY 20 (Each)	-	FY 2019 (Each)	FY 2020 (Each)	
Quantity			20	0		10	12		-
Cost Elements		When Rec (Month)	•	Prior Years (\$ M)	FY 20 (\$ M)	18	FY 2019 (\$ M)	FY 2020 (\$ M)	
Other									
Hardware FY17			0	47.000		-	-		0.000
Hardware FY18			0	-		32.000	-		0.000
Total: Other				47.000		32.000	0.000		0.000
Total Advance Procurement/Obligation Au	Ithority			47.000		32.000	0.000		-

Exhibit P-10, Advance Procurement Requirements Analy Defense Agency	sis (page 2 - B	udget Funding	Justification):	PB 2020 Missile	Date: Marc	h 2019	
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17		em Number / Titl und Based Midco			P-5 Number Silo Interfac	er / Title: ce Vaults/Silos	
				FY 20	20		
Cost Elements	<b>QPA</b> (Each)	Production Leadtime (Months)	Unit Cost (\$ M)	Contract Forecast Date	<b>2020 Qty</b> (Each)	For FY	Total Cost Request (\$ M)
Other							
Hardware FY17		1					0.000
Hardware FY18		1					0.000
Total: Other			•				0.000
Total Advance Procurement/Obligation Authority							-

**Description:** Long lead materials for Silos

Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	ense Agen	су				Date: M	arch 2019		
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-Wi Equipment, Missile Defense Agen	ide / BA 01:	-		A 17: Major		L <b>ine Item N</b> 9 / AEGIS E		le:				
ID Code (A=Service Ready, B=Not Service Ready):	В		Program Eler	ments for Co	de B Items: 0	604881C, 0603	3892C	Other Relate	d Program El	ements: 0603	892C, 060488	1C
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	232	64	44	37	-	37	40	43	52	46	Continuing	Continuing
Gross/Weapon System Cost (\$ in Millions)	3,715.231	1,083.353	700.490	600.773	-	600.773	616.902	676.813	839.173	805.558	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	46.024	59.764	53.600	-	-	159.388
Net Procurement (P-1) (\$ in Millions)	3,715.231	1,083.353	700.490	600.773	-	600.773	570.878	617.049	785.573	805.558	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	96.995	-	96.995	44.900	17.493	-	-	-	159.388
Total Obligation Authority (\$ in Millions)	3,715.231	1,083.353	700.490	697.768	-	697.768	615.778	634.542	785.573	805.558	Continuing	Continuing
(The following	g Resource Sum	mary rows are fo	or informational p	urposes only. Th	ne correspondin	g budget request	s are documente	ed elsewhere.)				
Initial Spares (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	33.646	10.498	13.498	12.786	-	12.786	11.997	12.515	13.450	-	Continuing	Continuing
Gross/Weapon System Unit Cost (\$ in Millions)	16.014	16.927	15.920	16.237	-	- 16.237 15.423 15.740				17.512	Continuing	Continuing

#### **Description:**

For FY 2018 to FY 2024:

Flyaway unit cost represents the weighted average of Standard Missile-3 (SM-3) Block IB and SM-3 Block IIA missiles. Net Procurement and Gross Weapon System costs includes all hardware and support costs and are detailed in separate P5s.

Prior Year procurement quantity of 232 SM-3 Block IB's does not include 71 SM-3 Block IAs.

The Aegis Ballistic Missile Defense (BMD) mission is to deliver an operationally effective and supportable BMD capability to defend the nation, deployed forces, and allies. Aegis BMD aims to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades. 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), Medium-Range Ballistic Missiles (MRBM), and Intermediate-Range Ballistic Missiles (IRBM) in the midcourse phase of flight. Upgrades to both the Aegis BMD Weapon System and SM-3 configuration enable Aegis BMD to provide an effective, supportable, and defensive capability against longer range, more sophisticated threats and an enduring Aegis Ashore defensive capability.

The SM-3 Block IB improves Aegis BMD's ability to expand the BMD battlespace, engage longer range, more sophisticated ballistic missiles that may deploy countermeasures and launch in larger raid sizes. The SM-3 Block IB Kinetic Warhead's (KW) two color infra-red (IR) seeker and advanced signal processor provides a real-time discrimination and characterization capability while improving sensitivity for longer range targets and performance against more sophisticated threats. Additionally, the new Throttleable Divert and Attitude Control System (TDACS) KW divert engine has been upgraded over the SM-3 Block IA to provide a more flexible divert in order to maneuver the KW to intercept.

The SM-3 Block IIA provides greater capability over SM-3 Block IB, including increased velocity and range provided by a 21-inch diameter rocket motor propulsion stack, more than doubled seeker sensitivity, and more than tripled divert capability incorporated in an advanced KW. New component technologies include, but are not limited to: lightweight nosecone, advanced KW, 21-inch second stage rocket motor, and 21-inch third stage rocket motor. Working in concert with the SM-3 Block IB, the SM-3 Block IIA, will increase the BMDS defended area and increase the probability of kill against a larger threat set. The SM-3 Block IIA is also a critical part of the Aegis Ashore Missile Defense System Complex - Romania and Poland, and is also vital to defense efforts for Aegis afloat in the European and Indo-Pacific Commands. This will provide a more robust protection of Europe and the Indo-Pacific. The SM-3 Block IIA also provides defense against IRBMs and other threats.

FY 2018 procures 44 SM-3 IB AURs, 20 SM-3 IIA AURs plus canisters, production engineering, Obsolescence and system engineering and integration.

Exhibit P-40, Budget Line Item Justificatior	n: PB 2020 Missile Defense Agency		Date: March 2019
Appropriation / Budget Activity / Budget Su 1300D: Procurement, Defense-Wide / BA 01: Equipment, Missile Defense Agency		P-1 Line Item Number / MD09 / AEGIS BMD	Title:
Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B	Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C, 0604881C
ine Item MDAP/MAIS Code: 362			
FY 2019 procures 34 SM-3 IB and 10 SM-3 IIA AURs plu	is canisters, production engineering, Obsolesc	ence and system engineering and	integration.
FY 2020 procures 30 SM-3 IB and 7 SM-3 IIA AURs plus	canisters, production engineering, Obsolesce	nce and system engineering and Ir	ntegration.
See the Advanced Procurement Exhibit for a detailed de	scription and justification of SM-3 Blk IB Advan	ced Procurement to support Multiy	rear Economic Order Quantities.

Exhib	it P-40, Budget Line Item Justification: P	B 2020 N	Missil	e Defei	nse Agency				Date: M	arch 2019	
0300	<b>Opriation / Budget Activity / Budget Sub /</b> D: Procurement, Defense-Wide / BA 01: Maj ment, Missile Defense Agency			/ BSA		P-1 Line Item Nu MD09 / AEGIS BN		le:			
ID Cod	e (A=Service Ready, B=Not Service Ready): B	F	Progra	m Eleme	ents for Code B Ite	ms: 0604881C, 06038	92C	Other F	elated Program Ele	ements: 0603892C, 0	604881C
Line Ite	m MDAP/MAIS Code: 362							•			
	Exhibits Schedule				Prior Years	FY 2018	FY 20	19	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibit	ID S CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / To (Each) / (		Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)
<sup>D</sup> -5	Aegis BMD SM-3 Block IB	P-5a, P-21	В		232 / 3,715.231	44 / 521.106	34 / 411.	.679	30 / 362.773	- / -	30 / 362.773
P-5	Aegis BMD SM-3 Block IIA		В		0 / 0.000	20 / 562.247	10 / 288.	.811	7 / 238.000	- / -	7 / 238.000
P-40	Total Gross/Weapon System Cost				232 / 3,715.231	64 / 1,083.353	44 / 700.	.490	37 / 600.773	- 1 -	37 / 600.773
Note: To	oresents 1) the Number / Title for Items; 2) the Number / Title [ tals in this Exhibit P-40 set may not be exact or sum exactly d cation:	-		ition; and/	or 3) the Number / Title	e (Modification Type) for N	<i>Iodifications.</i>				

Exhibit P-5, Cost	Analysis	s: PB 202	20 Missil	e Defens	se Agen	су				Date: March 2019								
Appropriation / B 0300D / 01 / 17	udget A	ctivity / I	Budget \$	Sub Acti	vity:		<b>.ine Iten</b> 9 / AEGI	n <b>Numbe</b> S BMD	er / Title:						umber / 1 BMD SM-3			
ID Code (A=Service Read	ly, B=Not Servi	ice Ready):	3						М	DAP/MAI	S Code:							
F	Resource	e Summa	ary		1	Prior Yea	ars	FY 20	018	FY	2019	FY 2	2020 Bas	se	FY 2020 (	000	CO FY 2020 To	
Procurement Quantity (Uni	its in Each)						232		44		34	L .		30		-		30
Gross/Weapon System Co	ost (\$ in Million	is)				3,	715.231		521.106		411.679	)	36	2.773		-		362.773
Less PY Advance Procure	ement (\$ in Mil	llions)					0.000		0.000		0.000	)		-		-		-
Net Procurement (P-1) (\$ i	in Millions)	,				3.	715.231		521.106		411.679	)	36	2.773		-		362.773
Plus CY Advance Procure		lions)				- ,	0.000		0.000		0.000	)	9	6.995		-		96.995
Total Obligation Authorit	•	,				3.	715.231		521.106		411.679	-		9.768		-		459.768
_			mmon/ rows	are for info	rmational p			ponding hug		s are docum	ented elsewhe							
	ie ioliowing i	NESOUICE SL	ininiary iOWS			in poses only		ponung buu	iyel request		enteu eisewilt	.)						
Initial Spares (\$ in Millions)		(illiana)					- 16.014		- 11.843		- 12.108	,	4	- 2.092		-		- 12.092
Gross/Weapon System Ur	iit Cost (\$ in i	viiiions)					10.014		11.043		12.100		L.	2.092		-		12.092
Note: Subtotals or Totals i	n this Exhibit	P 5 may no	t bo oxact or	r sum oxactl	, due te reu	nding												
		Prior Years	1	Sumexacti	FY 2018	nung.		FY 2019			Y 2020 Base		E	Y 2020 C	0	-	Y 2020 Tot	
		rior rears		[	FT 2010			FT 2019					г	1 2020 C			1 2020 100	1
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	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Flyaway Cost		. , ,			. ,			. ,			. ,	. ,		, ,				
Recurring Cost																		
SM-3 Block IA Procurement <sup>(†)</sup>	10.800	71	766.765	-	-	-	-	-	-	-	-	-	-	-		-	-	-
SM-3 Block IB Procurement <sup>(†)</sup>	11.318	232	2,625.774	10.796	44	475.036	10.589	34	360.029	10.780	30	323.399	-	-		10.780	30	323.399
Subtotal: Recurring Cost	-	-	3,392.539	-	-	475.036	-	-	360.029	-	-	323.399	-	-		-	-	323.399
Subtotal: Flyaway Cost	-	-	3,392.539	-	-	475.036	-	-	360.029	-	-	323.399	-	-		-	-	323.399
Hardware Cost		1		1			<u> </u>							1		1	.1	
Recurring Cost																		
Canisters Procurement SM-3 Block IA/IB (1)	0.231	244	56.316	0.261	45	11.751	0.272	35	9.518	0.253	30	7.576	-	-		0.253	30	7.576
Subtotal: Recurring Cost	-	-	56.316	-	-	11.751	-	-	9.518	-	-	7.576	-	-		-	-	7.576
Subtotal: Hardware Cost	-	-	56.316	-	-	11.751	-	-	9.518	-	-	7.576	-	-		-	-	7.576
Support Cost			· · · · ·															
Ballistic Barriers for Transportation SM-3 Block IB (2)	0.311	28	8.704	-	-	-	0.282	8	2.259	-	-	-	-	-		-	-	-
Cyber Security (3)	-	-	-	-	-	-	-	-	-	1.500	1	1.500	-	-		1.500	1	1.500
Diminishing Manufacturing Sources Mitigation (4)	13.854	1	13.854	-	-	-	3.461	1	3.461	3.660	1	3.660	-	-		3.660	1	3.660
SM-3 Block IB Investment Spares (5)	5.600	1	5.600	4.041	1	4.041	14.826	1	14.826	8.688	1	8.688	-	-	-	8.688	1	8.688

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	le Defen	se Agen	су								Date: M	arch 20 <sup>2</sup>	19			
Appropriation / B 0300D / 01 / 17	udget A	ctivity /	Budget	Sub Act	ivity:	1	P-1 Line Item Number / Title: MD09 / AEGIS BMD							Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB					
ID Code (A=Service Read	dy, B=Not Servi	ce Ready):	В				MDAP/MAIS Code:												
Note: Subtotals or Totals i	n this Exhibit	P-5 may no	t be exact c	or sum exact	ly due to rou	inding.													
	P	Prior Years	5		FY 2018			FY 2019		F۱	r 2020 Ba	se	F	Y 2020 OC	:0	F۱	2020 Tot	al	
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	
SM-3 Block IB Obsolescence (6)	50.000	1	50.000	0.946	1	0.946	1.328	1	1.328	1.367	1	1.367	-	-	-	1.367	1	1.367	
SM-3 Block IB Production Engineering (7)	30.959	6	185.751	19.526	1	19.526	6.598	1	6.598	4.080	1	4.080	-	-	-	4.080	1	4.080	
SM-3 Block IB Service Life Evaluation Program (8)	2.467	1	2.467	7.262	1	7.262	2.000	1	2.000	2.000	1	2.000	-	-	-	2.000	1	2.000	
SM-3 Block IB Systems Engineering And Integration (9)	-	-	-	2.544	1	2.544	11.660	1	11.660	10.503	1	10.503	-	-	-	10.503	1	10.503	
Subtotal: Support Cost	-	-	266.376	-	-	34.319	34.319 42.132 31.798						-	-	-	-	-	31.798	
Gross/Weapon System Cost	16.014	232	3,715.231	11.843	44	521.106	12.108	34	411.679	12.092	30	362.773	-	-	-	12.092	30	362.773	

#### Remarks:

(1) Canisters are required for each SM-3 procured.

(2) SM-3 Transportation of Ballistic Barriers are required by Joint Service Insensitive Munitions Technical Panel (JSIMTP) and Naval Ordnance Safety and Security Activity (NOSSA) to transport missiles.

(3) Cyber Enhanced Security starts in FY 2020.

(4) DMSM allows Aegis Ballistic Missile Defense to mitigate the loss, or impending loss, of manufacturers of items or suppliers of items or of raw materials caused by several factors including new or evolving science, detection limits, toxicity values, and regulations related to chemicals and materials resulting in significant impact on the supply chain and industrial base. These issues have the potential to impact future combat systems and safety.

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

(6) Obsolescence monitoring and management is the program's most effective and efficient way to minimize materiel readiness risks, realize future savings during production and sustainment, and improve overall life-cycle management. Identifies risk associated with the 800 vendors/suppliers discontinuing production of a component or raw material and then properly mitigating impacts to production. If not identified early, such activities will impact production and Fleet deliveries.

(7) Production Engineering supports SM-3 Guided Missile Round (GMR) production activities and issue resolution during manufacturing, assembly, testing, and missile integration. Funding provides production change validation, preparation, and configuration management, government prepared production acceptance procedures, production planning, Integrated Logistics Support (ILS) planning, coordination of government furnished information (GFI) and government furnished equipment (GFE), contract deliverable monitoring and prime contractor monitoring of cost/schedule performance. Also provides in-service engineering agent (ISEA) and technical direction agent (TDA) support.

(8) 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.

	UNCLASSIFIED						
Exhibit P-5, Cost Analysis: PB 2020 Missile Defense Agend	су	Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB					
ID Code (A=Service Ready, B=Not Service Ready): B	MDAP/MAIS Code:	AIS Code:					
<ul> <li>(9) Systems Engineering and Integration - Addresses production technical is management and control boards, engineering assessments of manufacturin documentation and test data prior to missile acceptance by the government</li> <li>(†) indicates the presence of a P-5a</li> </ul>	ssues that arise within the entire SM-3 vendor/supplier base. In g process improvement changes, engineering assessments of	ncludes improvement and efficiency activities such as configuration 'sub-vendor production issues, and engineering and quality review of					

Exhibit P-5a, Procuremer	nt Hi	story a	n <b>d Planning:</b> PB 2020 N	lissile Defense Age	ncy			Date	March 20	)19		
Appropriation / Budget A 0300D / 01 / 17	ctiv	ity / Bud	dget Sub Activity:	P-1 Line Item Nur MD09 / AEGIS BM					Number / s BMD SM			
Cost Elements	0 C 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
SM-3 Block IA Procurement <sup>(†)</sup>		2009	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Feb 2008	Mar 2010	11	8.405	Y		Mar 2007
SM-3 Block IA Procurement <sup>(†)</sup>		2010	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Apr 2008	Aug 2010	24	8.119	Y		Mar 2007
SM-3 Block IA Procurement <sup>(†)</sup>		2011	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Aug 2012	Sep 2013	22	9.525	Y		Nov 2010
SM-3 Block IA Procurement <sup>(†)</sup>		2012	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Aug 2012	Jul 2014	14	9.867	Y		Aug 2011
SM-3 Block IB Procurement <sup>(†)</sup>		2012	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	May 2012	Dec 2013	14	13.400	Y		Aug 2011
SM-3 Block IB Procurement <sup>(†)</sup>		2013	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Jun 2013	Jun 2014	33	12.130	Y		Aug 2012
SM-3 Block IB Procurement <sup>(†)</sup>		2014	Raytheon / Tucson, AZ	C / CPIF	Dahlgren, VA	Apr 2014	Jan 2016	52	10.236	Y		Aug 2013
SM-3 Block IB Procurement <sup>(†)</sup>		2015	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2015	Nov 2016	52	11.411	Y		Aug 2014
SM-3 Block IB Procurement <sup>(†)</sup>		2016	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2016	Oct 2018	46	11.538	Y		Aug 2015
SM-3 Block IB Procurement <sup>(†)</sup>		2017	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2017	Oct 2019	35	10.896	Y		Aug 2016

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

Image: control in teach     ACCEPT	Ар	pr	op	oria	21, Pro ation / I 1 / 17									P-1	ency   <b>Line</b> )09 / <i> </i>				Title	:						Item	Nun	rch 20 1 <b>ber</b> / D SM	Title				
n         h         n					Cost El (Units il	ements n Each)								Fiscal Y	/ear 2008	}										Fiscal Y	ear 2009						B A
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1       2010       MDA       24       0       24       0       24       0       24       0       24       0       24       0       24       0       24       0       25       0       2       0       2       0       20       0       20       0			lock	IA P	rocurement			1	1					1	1			1	1	1				1		I		1	1	<u> </u>			
1       201       MDA       22       0       22       0       22       0       22       0       14       14       14       14 <t< td=""><td></td><td>1</td><td>200</td><td>9 N</td><td>/IDA</td><td>11</td><td>0</td><td>11</td><td></td><td></td><td></td><td></td><td>Α-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>11</td></t<>		1	200	9 N	/IDA	11	0	11					Α-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
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2       2014       MDA       52       0       52       -<		_																			_												14
2       2015       MDA       52       0       52       -<				_																													33
2       2016       MDA       46       0       46	_	_		_																													52
2 2017 MDA 35 0 35 O N D J F M A M J J A S O N D J F M A M S O N D J F M A M J J A S																																	52
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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       J       J       A       S       O       N       D       J       F       M       A       M       J       J       A       S       C       N       D       J       F       M       A       M       J       J       A       S       C       N       D       J       F       M       A       M       J       J       A       S       C       N       D       J       F       M       N       L       G       P       T       V       C       N       L       G       P       T       V       C       N       L       G       P       T       V       C       N       L       G       P       T       V       C       N       L       G       P       T       V       C       N       L       G       D       D       D	1	2 2	201	7 N	/IDA	35	0	35	-			- <u>r</u>	1		1		1			1			1			1							35

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Exhib	it P-21, Production	n Schedule: F	PB 2020 Miss	ile Defense A	Agency				Da	te: March 20	19	
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		Produc	tion Rates (Each /	Month)				Procurement Le	adtime (Months)			
MFR						Ini	tial			Reo	rder	
Ref #	Manufacturer Name - Location	MSR For 2020	1-8-5 For 2020	MAX For 2020	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 Ra	aytheon - Tucson, AZ				4	0	30	30	4	0	30	30
2 Ra	aytheon - Tucson, AZ	1	4	5	0	0	0	0	0	0	0	0

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

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

Exhibit P-5, Cost	Analysi	s: PB 20	20 Missi	le Defens	se Agen	су								Date: N	larch 201	9		
Appropriation / B 0300D / 01 / 17	udget A	ctivity /	Budget	Sub Acti	vity:		<b>.ine Iten</b> 9 / AEGI	n <b>Numbe</b> S BMD	r / Title:						umber / T BMD SM-3			
ID Code (A=Service Read	ly, B=Not Serv	ice Ready):	3						M	DAP/MAIS	Code:							
F	Resource	Summa	ary		F	Prior Yea	ars	FY 20	18	FY 2	2019	FY 2	2020 Bas	se F	Y 2020 C		FY 2020	Total
Procurement Quantity (Uni	its in Each)						0		20		1(	D C		7		-		-
Gross/Weapon System Co	ost (\$ in Millior	is)					0.000		562.247		288.81	1	238	3.000		-		238.000
Less PY Advance Procure							0.000		0.000		0.000	0		-		-		-
Net Procurement (P-1) (\$ i	n Millions)						0.000		562.247		288.81	1	238	3.000		-		238.000
Plus CY Advance Procure	ment (\$ in Mil	lions)					0.000		0.000		0.000	2		-		-		-
Total Obligation Authorit	ty (\$ in Millions	5)					0.000		562.247		288.811	1	238	3.000		-		238.00
			immary row	s are for info	rmational p	irposes only	The corres	pondina bud	aet request	s are docume	nted elsewh	ere )						
Initial Spares (\$ in Millions)	io ionoming i	10000100 00					-	ponding bud	-		-			-		-		-
Gross/Weapon System Ur	nit Cost (\$ in I	Millions)					0.000		28.112		28.88	1	34	1.000		-		34.000
							0.000		201112		20.00							01.000
Note: Subtotals or Totals i	n this Exhibit	P-5 may no	t be exact o	or sum exactly	due to rou	nding.												
		Prior Years			FY 2018			FY 2019		FY	2020 Base	9	E)	( 2020 0	co	F	Y 2020 Tota	al
	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost	Unit Cost	Qty	Total Cost
Cost Elements	(\$ M)	(Each)	(\$ M)	(\$ M)	(Each)	(\$ M)	(\$ M)	(Each)	(\$ M)	(\$ M)	(Each)	(\$ M)	(\$ M)	(Each)	(\$ M)	(\$ M)	(Each)	(\$ M)
Flyaway Cost																		
Recurring Cost																1		
SM-3 Block IIA Procurement	-	-	-	26.849	20	536.974	27.356	10	273.559	27.348	7	191.436	-	-	-	27.348	7	191.43
Subtotal: Recurring Cost	-	-	-	-	-	536.974	-	-	273.559	-	-	191.436	-	-	-	-	-	191.43
Subtotal: Flyaway Cost	-	-	-	-	•	536.974	-	-	273.559	-	-	191.436	-	-	-	-	-	191.43
Hardware Cost																		
Recurring Cost															1	1	, , , , , , , , , , , , , , , , , , , ,	
Canisters Procurement SM-3 Block IIA (1)	-	-	-	1.203	21	25.273	1.263	11	13.898	1.054	8	8.433	-	-	-	1.054	8	8.43
	-	-	-	-	-	25.273	-	-	13.898	-	-	8.433	-	-	-	-	-	8.43
Subtotal: Recurring Cost	-								10.000							1	-	8.43
Subtotal: Recurring Cost Subtotal: Hardware Cost	-	-	-	-	-	25.273	-	-	13.898	-	-	8.433	-	-	-	-	-	
		-	-	-	-	25.273	-				-	8.433	-	-	-	-	-	
Subtotal: Hardware Cost		-	-	-	-	25.273	-				-	<b>8.433</b> 9.630	-	-	-	9.630	- 1	9.63
Subtotal: Hardware Cost Support Cost SM-3 BLK IIA Investment		-	-		•	-	-			-			-	- - -				9.63 20.64
Subtotal: Hardware Cost Support Cost SM-3 BLK IIA Investment Spares (2) SM-3 BLK IIA Service Life Evaluation Programs		- - -	•	-	•		-			9.630	1	9.630	-	-	-	9.630		20.64
Subtotal: Hardware Cost Support Cost SM-3 BLK IIA Investment Spares (2) SM-3 BLK IIA Service Life Evaluation Programs (3) SM-3 Block IIA	-	-	-	-	- - - -	25.273	- - - 1.354	-		- 9.630 20.645	1	9.630 20.645	- - - -	-	-	9.630	1	

Exhibit P-5, Cost	Analysis	s: PB 202	20 Missi	le Defens	se Agenc	y								Date: Ma	arch 201	19		
Appropriation / B 0300D / 01 / 17	udget A	ctivity / I	Budget	Sub Act	ivity:		<b>.ine Item</b> 9 / AEGIS		er / Title				I			Title [DOI 3 Block II.	-	
ID Code (A=Service Read	ly, B=Not Servi	ce Ready):E	3						M	DAP/MAIS	Code:							
Note: Subtotals or Totals i	n this Exhibit	P-5 may no	t be exact o	r sum exactl	y due to roun	iding.			·									
	F	Prior Years			FY 2018			FY 2019		FY	′ 2020 Bas	e	F	Y 2020 OC	0	F۱	2020 Tot	al
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)
Gross/Weapon System Cost	0.000	0	0.000	28.112	20	562.247	28.881	10	288.811	34.000	7	238.000	-	-	-	34.000	7	238.00

#### Remarks:

(1) Canisters are required for each SM-3 procured. Historical trends have identified 1 canister/yr breaking during delivery, thus the request for a spare canister.

(2) SM-3 Block IIA Initial Spares are procured to coincide with the delivery of the missile and are required to support AURs during 6 year maintenance period. This is the first year of including Initial Spares in the request.

(3) SM-3 Block IIA Service Life Evaluation Program Testing and analysis program to demonstrate the safety and suitability of the SM-3 for an extended service life.

(4) Obsolescence is the program's most effective and efficient way to minimize materiel readiness risks, realize future savings during production and sustainment, and improve overall life-cycle management. Identifies risk associated with the 800 vendors/suppliers discontinuing production of a component or raw material and then properly mitigating impacts to production. If not identified early, such activities will impact production and Fleet deliveries. The increase from FY 2019 to FY 2020 is to address obsolescence issues due to the missile in its second year of production and the highly complex design requiring the manufacture to ensure issues are identified early in the process and adequately addressed for manifesting into a production delay.

(5) Production Engineering provides engineering efforts support of SM-3 Guided Missile Round (GMR) production activities, manage and resolve issues that arise during manufacturing, assembly, tests, and missile integration. In PB19, Special Tooling and Test Equipment is incorporated into this effort. This effort addresses production technical issues that arise within the entire SM-3 vendor/supplier base. Includes improvement and efficiency activities such as configuration management and control boards, engineering assessments of manufacturing process improvement changes, engineering assessments of sub-vendor production issues, and engineering and quality review of documentation and test data prior to missile acceptance by the government. Additionally, includes Special Tooling and Test Equipment which sustains and maintains the tools and test equipment vital to manufacture and test prior to government acceptance of new SM-3 missiles. The increase from FY 2019 to FY 2020 provides for Special Tooling and Test Equipment to address additional requirements due to the transition to production in FY 2018.

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Exhibit P-40, Advance Procure	ment Budge	et Line Item	n Justificat	ion: PB 202	20 Missile D	Defense Age	ency		Date: N	larch 2019		
Appropriation / Budget Activity 0300D: Procurement, Defense-W Equipment, Missile Defense Age	/ide / BA 01:	-		A 17: Major		L <b>ine Item N</b> 9 / AEGIS E		le:				
Program Elements for Code B Items: 0	604881C, 0603	892C			Other	Related Prog	ram Elements	<b>:</b> 0603892C, 0	604881C			
Line Item MDAP/MAIS Code: 362												
	Prior			FY 2020	FY 2020	FY 2020					То	
Resource Summary	Years	FY 2018	FY 2019	Base	000	Total	FY 2021	FY 2022	FY 2023	FY 2024	Complete	Total
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	0.000	96.995	-	96.995	44.900	17.493	-	-	-	159.388
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	0.000	96.995	-	96.995	44.900	17.493	-	-	-	159.388
Total Obligation Authority (\$ in Millions)	0.000	0.000	0.000	96.995	-	96.995	44.900	17.493	-	-	-	159.388

#### **Description:**

The Missile Defense Agency intends to award a five year Multi-Year Procurement (MYP) contract for 174 Standard Missile-3 Block IBs in 3QFY2019 through FY 2023 (final delivery FY 2026). This multiyear contract strategy uses Economic Order Quantity Advance Procurement (EOQ AP) funding to provide the U.S. Government maximum savings in price and delivery schedule. No EOQ AP was appropriated in FY 2019. This MYP requests \$96.995M EOQ AP funding in FY 2020 which results in savings for bulk purchases of materials and components to reduce material costs and for investments in productivity enhancements to reduce labor costs. EOQ AP funding will be applied to the production of 110 FY 2021-FY 2023 All Up Rounds (AUR). EOQ AP funding will enable Raytheon Missile System's to bulk order materials with long lead times, and authorize equipment suppliers and subcontractors to do the same with sufficient lead time to support the planned delivery schedule within the context of the multiyear funding, prices, and cancellation ceilings.

Many components have minimum buy quantities which may not be met under single year procurements, which result in increased unit costs. EOQ AP quantities will allow the prime contractor and subcontractors at all tiers to exceed minimum order quantities and capture cost avoidance on these components. Long-term Agreements will provide price discounts to guarantee business. Given EOQ AP, suppliers will have increased business and stability. Suppliers will implement innovative processes and capital investments necessary to reduce costs which result in missile unit cost savings. As a result of these process innovations and capital investments, obsolescence risks and costs are also expected to be minimized.

Procuring at a guaranteed rate of minimum production will also yield cost avoidances. Allowing the contractor to manage facilities and subcontractors to a guaranteed production rate will reduce costs by allowing the Prime and subcontractors to engage in activities including, but not limited to, reducing the number of production set-ups.

Exhib	it P-40, Advance Procurement Budget Line Item J	usti	ficatio	n: PB 2020 Mis	sile Defense Ager	псу	Date: M	arch 2019							
0300	opriation / Budget Activity / Budget Sub Activity: D: Procurement, Defense-Wide / BA 01: Major Equipm ment, Missile Defense Agency	nent	/ BSA		P-1 Line Item Nu MD09 / AEGIS BN										
Progra	m Elements for Code B Items: 0604881C, 0603892C				Other Related Progra	am Elements: 06038	92C, 0604881C								
Line Ite	Item MDAP/MAIS Code: 362														
	Exhibits Schedule     Prior Years     FY 2018     FY 2019     FY 2020 Base     FY 2020 OCO     FY 2020 Total														
Exhibit Type	Title*	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)						
P-10	Aegis BMD SM-3 Block IB		1	232 / 0.000	44 / 0.000	34 / 0.000	30 / 96.995	- / -	30 / 96.995						
P-40	Total Gross/Weapon System Cost			232 / 0.000	64 / 0.000	44 / 0.000	37 / 96.995	- / -	37 / 96.995						
*Title rep	presents the P-10 Title for Advance Procurement.														
	otals in this Exhibit P-40 set may not be exact or sum exactly due to rounding	тг													

Economic Order Quantity Advanced Procurement (EOQ AP) procures long lead items in bulk for FY21 through FY23 lots in order to reduce the cost of subcontractor effort, material, and components as compared to single future fiscal year lot buys. The bulk advance buys enable greater production efficiencies and substantial cost savings over separate single year lot buys.

FY 2020 Advance Procurement (\$96.995M) funding will procure the following major items for the FY21 through FY23 lots:

1. Kinetic Warhead Guidance Unit (29 month lead time) with estimated savings of 18% across Fiscal Year Defense Plan (FYDP).

2. Third Stage Rocket Motors (24 month lead time) with estimated savings of 13% across FYDP.

3. Throttling Divert Attitude Control System (25 month lead time) with estimated savings of 13% across FYDP.

4. MK-72 Booster (25 month lead time) with estimated savings of 12% across FYDP.

5. Guidance Section (Gravity Switch, Thermal Batteries) (23 month lead time) with estimated savings of 3% across FYDP.

6. Sub-components and raw materials to facilitate missile production efficiencies including Integrated DEWAR Assembly Substrates, Fiber Material, Beryllium Material, Electronic Components, Printed Wire Boards, Housings, Antennas, DTRM Case Material, Harnesses, and Shell Material.

Exhibit P-10, Advance Procuremen Defense Agency	nt Requirer	nents Analysis	s (page 1 ·	Budget Funding Just	ficati	i <b>on):</b> PB 2020 Missi	le Date: March 2019		
Appropriation / Budget Activity / E 0300D / 01 / 17	udget Sub	Activity:		Item Number / Title: EGIS BMD			P-5 Number / Title Aegis BMD SM-3		
First System (2020) Award Date: January 2018	First Syst October 20	<b>em (2020) Comple</b> 020	etion Date:			Interval Between Sy 1 Months	stems:		
Aegis BMD SM-3 Block IB		Production L (Months)		Prior Years (Each)		FY 2018 (Each)	FY 2019 (Each)	<b>FY 2020</b> (Each)	
Quantity			30	232		44	34		30
Cost Elements		When Req (Months)		Prior Years (\$ M)		FY 2018 (\$ M)	FY 2019 (\$ M)	FY 2020 (\$ M)	
EOQ									
Aegis Advanced Procurement			0	-		-	-		96.995
Total: EOQ				0.000		0.000	0.000		96.995
Total Advance Procurement/Obligation Au	hority			0.000		0.000	0.000		96.995

Exhibit P-10, Advance Procurement Requirements Analys Defense Agency	sis (page 2 - E	Budget Funding	Justification):	PB 2020 Missile	Date: Marc	ch 2019								
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line It MD09 / AE	<b>em Number / Titl</b> GIS BMD	e:		P-5 Numb Aegis BMD	er / Title: ) SM-3 Block IE	3							
	FY 2020													
Cost Elements	Production       QPA     Leadtime     Unit Cost     Contract     2020 Qty													
EOQ		· ·	·	· · · · · ·										
Aegis Advanced Procurement		0					96.995							
Total: EOQ							96.995							
Total Advance Procurement/Obligation Authority							96.995							

Description:

The Advance Procurement (AP) funding provides economic order quantity (EOQ) to reduce the cost of subcontractor effort, material, and components enabling greater production efficiencies and substantial cost savings.

Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	ense Agen	су				Date: N	larch 2019		
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-W Equipment, Missile Defense Ager	ide / BA 01:			A 17: Major	1	Line Item N 1 / BMDS S		tle:	·			
ID Code (A=Service Ready, B=Not Service Ready):	A		Program Eler	nents for Co	de B Items: 0	603881C, 0603	3884C	Other Relate	d Program El	ements: 0603	881C, 060388	4C
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	5	-	-	-	-	-	-	-	-	-	-	5
Gross/Weapon System Cost (\$ in Millions)	1,177.590	11.947	13.185	10.046	-	10.046	-	-	-	9.654	-	1,222.422
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,177.590	11.947	13.185	10.046	-	10.046	-	-	-	9.654	-	1,222.422
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,177.590	11.947	13.185	10.046	-	10.046	-	-	-	9.654	-	1,222.422
(The following	g Resource Sumr	nary rows are fo	or informational p	urposes only. Th	e correspondin	g budget request	s are document	ted 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)	235.518	0.000	0.000	-	-	-	-	-	-	-	-	244.484

#### **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 AN/TPY-2 Radars required to complete the THAAD Battery acquisitions. "Procurement Quantity" and "Flyaway Unit Cost" represent AN/TPY-2 radar systems ((i.e. one Antenna Equipment Unit (AEU), one Cooling Equipment Unit, one Electronic Equipment Unit (EEU), and two Prime Power Units (PPU)) only, but the "Net Procurement" cost plus the Initial Spares amount includes the costs of all hardware.

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

The COBRA DANE Transmitter Group Replacement (TGR) procurement is due to parts obsolescence concerns. A modern, supportable design will eliminate scores of currently unsupportable parts.

Exhib	oit P-40, Budget Line Item Justification: P	B 2020 M	issile	e Defei	nse Agency			Date: M	arch 2019						
03000	Appropriation / Budget Activity / Budget Sub Activity:       P-1 Line Item Number / Title:         0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major       MD11 / BMDS Sensors         Equipment, Missile Defense Agency       Program Elements for Code B Items: 0603884C, 0603														
ID Cod	O Code (A=Service Ready, B=Not Service Ready): A       Program Elements for Code B Items: 0603881C, 0603884C       Other Related Program Elements: 0603881C, 0603884C														
Line It	ne Item MDAP/MAIS Code: 362														
	Exhibits Schedule				Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total					
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)					
P-5	BMDS AN/TPY-2 Radars	P-5a, P-21	А		5 / 1,177.590	- / 11.947	- / 13.185	- / 10.046	- / -	- / 10.046					
P-40	Total Gross/Weapon System Cost				5 / 1,177.590	- / 11.947	- / 13.185	- / 10.046	- / -	- / 10.046					
*Title re	presents 1) the Number / Title for Items; 2) the Number / Title [	DODIC] for An	nmuni	tion; and/	or 3) the Number / Title	(Modification Type) for N	Iodifications.								
Note: To	otals in this Exhibit P-40 set may not be exact or sum exactly d	ue to rounding													

#### Justification:

FY 2020 base procurement dollars in the amount of \$10.046 million procures one AEU transformer to replace the legacy transformer currently in each forward based AN/TPY-2 site. The newly designed AEU transformer will include design improvements to extend the life of this mission critical component. It also procures two AN/TPY-2 EEU Modification Kits and Radar Field Upgrade (RAFU) kits that provides updated processing capabilities in both Terminal and Forward-based mode AN/TP-2 Radars.

Exhibit P-5, Cost	Analysis	: PB 20	20 Missi	le Defen	se Agen	су								Date: N	/larch 201	19		
Appropriation / E 0300D / 01 / 17	Budget Ac	:tivity /	Budget	Sub Act	ivity:			n Numbe S Sensors							umber / 1 AN/TPY-:			
ID Code (A=Service Rea	dy, B=Not Servic	e Ready):	4						М	DAP/MAI	S Code:							
	Resource	Summ	ary			Prior Yea	ars	FY 20	18	FY	2019	FY	2020 Ba	se F	Y 2020 0	000	FY 2020	) Total
Procurement Quantity (Ur	nits in Each)		-				5		-		-			-		-		-
Gross/Weapon System C	ost (\$ in Millions	\$)				1	,177.590		11.947		13.18	5	1	0.046		-		10.046
Less PY Advance Procur	ement (\$ in Milli	ons)					0.000		0.000		0.00	0		-		-		-
Net Procurement (P-1) (\$	in Millions)					1	,177.590		11.947		13.18	5	1	0.046		-		10.046
Plus CY Advance Procure	ement (\$ in Milli	ons)					0.000		0.000		0.00	0		-		-		-
Total Obligation Author	ty (\$ in Millions)					1	,177.590		11.947		13.18	5	1	0.046		-		10.046
(1	he following R	esource Su	Immary row	s are for info	rmational p	urposes only	. The corres	ponding budg	get request	s are docum	ented elsewh	ere.)						
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System U	nit Cost (\$ in M	illions)					235.518		0.000		0.00	0		-		-		-
				0														
Note: Subtotals or Totals	in this Exhibit	P-5 may no	t be exact c	or sum exact	y due to rou	unding.							,					
	P	rior Years	\$		FY 2018			FY 2019		F	Y 2020 Bas	e	F	Y 2020 O	со	F	Y 2020 To	tal
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)	Unit Cost (\$ M)	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																		
Antenna Equipment Unit (AEU) <sup>(†)</sup>	130.482	5	652.411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>	1.331	5	6.655	0.947	1	0.947	0.978	1	0.978	0.869	1	0.869	-	-	-	0.869	1	0.869
COBRA DANE Transmitter Group Replacement <sup>(†)</sup>	-	-	-	11.000	1	11.000	8.000	1	8.000	-	-	-	-	-	-	-	-	-
Cooling Equipment Unit (CEU) <sup>(†)</sup>	6.996	5	34.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Spares <sup>(†)</sup>	9.742	3	29.227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electronic Equipment Unit (EEU) <sup>(†)</sup>	20.914	5	104.572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>	4.850	5	24.248	-	-	-	2.709	1	2.709	2.979	2	5.957	-	-	-	2.979	2	5.95
Float Antenna Equipment Unit (AEU) <sup>(†)</sup>	62.019	1	62.019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Float Cooling Equipment Unit (CEU) <sup>(†)</sup>	12.929	2	25.857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	le Defen	se Agen	су								Date: M	arch 201	19		]
Appropriation / B 0300D / 01 / 17	Budget A	ctivity /	Budget	Sub Act	ivity:		Line Item 1 / BMDS			1						<b>Fitle [DO</b> I 2 Radars	DIC]:	
ID Code (A=Service Read	dy, B=Not Servi	ice Ready):	A						М	DAP/MAIS	S Code:							
Note: Subtotals or Totals i	in this Exhibit	P-5 may no	ot be exact o	or sum exact	ly due to rou	nding.												
	F	Prior Years	5		FY 2018			FY 2019		F۱	Y 2020 Ba	se	F	Y 2020 OC	:0	F١	2020 Tot	al
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)
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 Field Upgrade (RAFU) Kit <sup>(†)</sup>	1.450	1	1.450	-	-	-	1.498	1	1.498	1.610	2	3.220	-	-	-	1.610	2	3.220
Transmit/Receive Integrated Microwave Module (TRIMMs) <sup>(†)</sup>	59.840	1	59.840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	1,158.728	-	-	11.947	-	-	13.185	-	-	10.046	-	-	-	-	-	10.046
Non Recurring Cost				i			,		i						i			
Contractor Certification <sup>(†)</sup>	2.862	1	2.862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	2.862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	1,161.590	-	-	11.947	-	-	13.185	-	-	10.046	-	-	-	-	-	10.046
Support Cost																		
Program Support*	16.000	1	16.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	-	-	16.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	235.518	5	1,177.590	0.000	-	11.947	0.000	-	13.185	-	-	10.046	-	-	-	-	-	10.046

#### Remarks:

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

 $^{(\dagger)}$  indicates the presence of a P-5a

Exhibit P-5a, Procurement	t Hi	story a	nd Planning: PB 2020 Mis	sile Defense Age	ncy			Date	: March 20	019		
Appropriation / Budget Ac 0300D / 01 / 17	tiv	ity / Bud	<b>U</b>	-1 Line Item Nur ID11 / BMDS Ser					Number / S AN/TPY			
Cost Elements	0 C 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 Issue Date
Antenna Equipment Unit (AEU) <sup>(†)</sup>		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	144.290			
Antenna Equipment Unit (AEU) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	144.090	Y		
Antenna Equipment Unit (AEU) - 1 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	126.400	Y		
Antenna Equipment Unit (AEU) - 2 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	126.400	Y		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Sep 2015	3	1.775	Y		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Sep 2016	1	0.410	Y		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Sep 2017	1	0.919	Y		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2018	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2017	Sep 2018	1	0.947	Y		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2019	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2018	Sep 2019	1	0.978	Y		
Antenna Equipment Unit (AEU) Transformer <sup>(†)</sup>		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Sep 2020	1	0.869	N		
COBRA DANE Transmitter Group Replacement <sup>(†)</sup>		2018	Raytheon / Washington, D.C.	C / IDIQ	MDA, Huntsville, AL	Apr 2018	Apr 2019	1	11.000	Y		
COBRA DANE Transmitter Group Replacement <sup>(†)</sup>		2019	Raytheon / Washington, D.C.	C / IDIQ	MDA, Huntsville, AL	Jun 2019	Jun 2020	1	8.000	Y		
Cooling Equipment Unit (CEU) <sup>(†)</sup>		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	7.800	Y		
Cooling Equipment Unit $(CEU)^{(\dagger)}$		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	7.668	Y		
Cooling Equipment Unit (CEU) - 1 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	6.802	Y		
Cooling Equipment Unit (CEU) - 2 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	6.802	Y		
Critical Spares <sup>(†)</sup>		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	May 2014	May 2015	1	14.361	Y		
Critical Spares <sup>(†)</sup>		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Dec 2015	1	11.391	Y		
Critical Spares <sup>(†)</sup>		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Dec 2016	1	3.475	Y		
Electronic Equipment Unit (EEU) $^{(\dagger)}$		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	23.400	Y		
Electronic Equipment Unit (EEU) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	23.000	Y		

Exhibit P-5a, Procurement	t Hi	story a	nd Planning: PB 2020 Mi	issile Defense Age	ncy			Date	: March 20	)19		
Appropriation / Budget Ac 0300D / 01 / 17	tivi	ity / Buo		P-1 Line Item Nur MD11 / BMDS Ser					<b>Number /</b> S AN/TPY			
Cost Elements	0 C 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 Issue Date
Electronic Equipment Unit (EEU) - 1 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	20.220	Y		
Electronic Equipment Unit (EEU) - $2^{(\dagger)}$		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	20.220	Y		
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>		2015	Raytheon / Woburn, MA	SS / FFP	М	Dec 2014	Jun 2015	3	2.795	Y		
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Mar 2016	Sep 2016	1	3.183	Y		
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Jun 2017	1	3.134	Y		
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>		2019	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2018	Jun 2019	1	2.709	Y		
Electronic Equipment Unit (EEU) Modification Kit <sup>(†)</sup>		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Jun 2020	2	2.979	Y		
Float Antenna Equipment Unit (AEU) <sup>(†)</sup>		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Jun 2018	1	62.019	Y		
Float Cooling Equipment Unit (CEU) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	1	7.140	Y		
Float Cooling Equipment Unit (CEU) <sup>(†)</sup>		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Sep 2014	Dec 2015	1	18.721	Y		
Float Electronic Equipment Unit (EEU) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	1	20.260	Y		
Float Electronic Equipment Unit (EEU) <sup>(†)</sup>		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Sep 2014	Sep 2016	1	22.718	Y		
Forward-Based Mode Prime Power Units (PPU) <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Dec 2014	4	10.985	Y		
Prime Power Unit (PPUs - 2 each radar system) <sup>(†)</sup>		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	15.600	Y		
Prime Power Unit (PPUs - 2 each radar system) <sup>(†)</sup>		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	15.336	Y		
Prime Power Unit (PPUs - 2 each radar system) - 1 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	13.895	Y		
Prime Power Unit (PPUs - 2 each radar system) - 2 <sup>(†)</sup>		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	13.895	Y		
Radar Field Upgrade (RAFU) Kit $^{(\dagger)}$		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Jun 2017	1	1.450	Y		

Exhibit P-5a, Procuremen	t Hi	story a	nd Planning: PB 2020 M	lissile Defense Age	ncy			Date	: March 20	)19		
Appropriation / Budget Ac 0300D / 01 / 17	ctivi	ty / Buo	dget Sub Activity:	P-1 Line Item Nur MD11 / BMDS Ser					Number / S AN/TPY			
Cost Elements	0 C 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 Issue Date
Radar Field Upgrade (RAFU) Kit		2019	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2018	Jun 2019	1	1.498	Y		
Radar Field Upgrade (RAFU) Kit		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Jun 2020	2	1.610	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	Y		

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

Remarks:

N/A

Exhibit F	P-21, Pro	oducti	on Scl	nedu	le: PE	3 2020	) Mis	sile D	efens	se Ag	ency												Date	e: Ma	rch 20	)19				
<b>Appropr</b> 0300D / (		Budge	et Activ	vity /	Budg	jet Su	ıb Ac	tivity	:				n Nui S Sei			tle:									n <b>ber /</b> N/TPY			DIC]:		
	Cost El (Units i	ements n Each)								Fiscal	Year 201	0											Fiscal Y	ear 2011						BA
			ACCEPT										Calend	ar Yea	ar 2010									Cale	ndar Yea	· 2011				L
M O F C R O # FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2009	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		U	A U G	SEP	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 U	J L	A U G	S E P	A N C E
Antenna Equi	pment Unit (Al	EU)																												,
1 2010	MDA	1	0	1									Α-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
1 2012	MDA	2	0	2																										2
Antenna Equi	pment Unit (Al	EU) - 1																												
1 2013	1	1	0	1																										1
Antenna Equi		EU) - 2																												1
1 2013		1	0	1																										1
Antenna Equi																														1
2 2015		3	0	3																										3
2 2016		1	0	1																										1
2 2017	MDA	1	0	1																										1
2 2018	MDA	1	0	1																										1
2 2019		1	0	1																										1
2 2020	MDA	1	0	1																										1
COBRA DANI	1	Group Rep	1																											
3 2018		1	0	1																										1
3 2019	<u> </u>	· · · ·	0	1							_																			1
Cooling Equip		1	0	1									•					[		-					1			-		1
4 2010		2		2									Α -		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Cooling Equip	I		0	2																										2
4 2013		1	0	1																										1
Cooling Equip	I	11) 2	0																	-										
4 2013		1	0	1																									_	1
Critical Spares		•	0																											
5 2014	1	1	0	1																										1
5 2015		1	0	1																										1
5 2016		1	0	1				_																						1
Electronic Equ	I	EEU)																												
6 2010		1	0	1									Α -		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
6 2012		2	0	2															l		1			1						2
Electronic Equ	1		-																											,
6 2013		, 1	0	1																										1
	1		]		0	N	D	J	F	м	Α	м	J			Α	S	0	N	D	J	F	м	Α	м	J	J	Α	S	
					C T	o v	E C	A N	E B	A R	P R	A Y	U N			U G	E P	C T	o V	E C	A N	E B	A R	P R	A Y	U N	U L	U G	E P	]

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			i <b>ation</b> / )1 / 17	Budg	et Acti	vity /	Budg	get Sı	ıb Ac	ctivity	<b>/</b> :			e Iten BMD				tle:									n <b>ber</b> / N/TPY			)IC]:		
				lements in Each)								Fiscal	Year 201	0											Fiscal Y	ear 2011						B A
					ACCEPT										Calend	ar Year	r 2010									Cale	ndar Yea	r 2011				L
		FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2009	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	i I	J	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
Ele	ctron	ic Equ	ipment Unit	(EEU) - 2	1																											
	6	2013	MDA	1	0	1																										1
Ele			ipment Unit	(EEU) Mod	dification Ki	1																										
		2015		3	-	3																										3
	_		MDA	1																												1
			MDA	1		1																										1
			MDA	1	0																											1
			MDA	2		2																										2
	-		Equipment l	Jnit (AEU)	1	1	1																									
		2016		1	0	1																										1
		-	Equipment U	1	1	1	1				_																					
			MDA	1	-			-																								1
			MDA	1		1		a																			_					1
-			c Equipment	Unit (EEU	1	1	1	-																								
			MDA	1	0																						_					1
			MDA	1		1																										1
<u> </u>			d Mode Prim	-	. ,		1																									
		2013		4		4					_																					4
<u> </u>			Jnit (PPUs - :	2 each rad	1 1		1																			1	1		T			
			MDA	1	0										Α -	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
			MDA	2	1	2		-																								2
			Jnit (PPUs - :	2 each rad	1	r	1	-																								
			MDA	1	0																											1
			Jnit (PPUs - :	2 each rad	1	1	1			_	_																					
			MDA	1	0	1																										1
			ograde (RAF	U) Kit	0																											
			MDA																													1
			eive Integrate	1	-																											4
			MDA rtification	1	0	1																										1
— ,			MDA	1	0	A																										4
	10	2015	IVIDA	1	0	1	0	N	р		F	M	•	M	J			•	e	0	N	D	J	F	м	•	M	J			S	1
							O C T	N O V	D E C	J A N	E B	M A R	A P R	M A Y	U N	i I	J	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	U N	J U L	A U G	S E P	

Appropriation / Budget Activity / Budget Sub Activity: P-1 Line Item Number / Title:					
0300D / 01 / 17 MD11 / BMDS Sensors			n <b>ber / Title</b> N/TPY-2 Ra		
Cost Elements (Units in Each) Fiscal Year 2012		Fiscal Year 2013	3		B
ACCEPT Calendar Year 2012		Calen	ndar Year 2013		L
M         O         F         PRIOR         BAL         TO1         DUE         O         N         D         J         F         M         A         M         J         J         A         S         O         N           O         F         C         PROC         OCT         AS         O         N         D         J         F         M         A         M         J         J         A         S         O         N           O         F         V         C         O         E         A         P         A         U         U         U         E         C         O           O         #         FY         SERVICE         QTY         2011         1 OCT         T         V         C         N         B         R         R         Y         N         L         G         P         T         V	D J F E A E C N B	M A A P R R	M J A U Y N	U U I	S N E C P E
Antenna Equipment Unit (AEU)					
1 2010 MDA 1 0 1	1	<u>.</u>			0
1 2012 MDA 2 0 2 A					- 2
Antenna Equipment Unit (AEU) - 1					
1 2013 MDA 1 0 1	A				- 1
Antenna Equipment Unit (AEU) - 2					
1 2013 MDA 1 0 1					1
Antenna Equipment Unit (AEU) Transformer					
2 2015 MDA 3 0 3					3
2 2016 MDA 1 0 1					1
2 2017 MDA 1 0 1					1
2 2018 MDA 1 0 1					1
2 2019 MDA 1 0 1					1
2 2020 MDA 1 0 1					1
COBRA DANE Transmitter Group Replacement					
3 2018 MDA 1 0 1					1
3 2019 MDA 1 0 1					1
Cooling Equipment Unit (CEU)					
4 2010 MDA 1 0 1	1				0
4 2012 MDA 2 0 2 A					- 2
Cooling Equipment Unit (CEU) - 1			1 1 1		
4 2013 MDA 1 0 1	A				- 1
Cooling Equipment Unit (CEU) - 2					
4 2013 MDA 1 0 1					1
5 2014 MDA 1 0 1					1
5 2015 MDA 1 0 1					1
5 2016 MDA 1 0 1					1
6 2010 MDA 1 0 1	1	1	1 1		0
6 2012 MDA 2 0 2 A					- 2
Electronic Equipment Unit (EEU) - 1		1			
6 2013 MDA 1 0 1					- 1
O       N       D       J       F       M       A       M       J       J       A       S       O       N         C       O       E       A       E       A       P       A       U       U       U       E       C       O         T       V       C       N       B       R       Y       N       L       G       P       T       V	D J F E A E C N B	M A A P R R	M J A U Y N	U U I	S E P

Ex	hib	it P	-21, Pro	oduct	ion Sc	hedu	le: PE	3 202	0 Mis	sile D	efens	e Ag	ency											Date	e: Ma	rch 2	019				
			<b>ation</b> / 01 / 17	Budg	et Acti	vity /	Budg	get Si	ub Ac	ctivity	<b>/:</b>				<b>n Nun</b> S Sen	n <b>ber</b> / Isors	Title										<b>' Title</b> '-2 Ra		DIC]:		
				lements in Each)								Fiscal	Year 201	2										Fiscal Ye	ear 2013	3					B A
					ACCEPT										Calenda	r Year 20	12								Cale	ndar Yea	r 2013				L
		۰Y	SERVICE	PROC QTY	PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT		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	A N C E
Ele	ctronic	: Equi	pment Unit (	EEU) - 2																											
	6 2	013	MDA	1	0	1																									1
Ele	ctronic	: Equi	pment Unit (	EEU) Mod	dification Ki	t																									
	7 2	015	MDA	3	0	3																									3
	7 2	016	MDA	1	0	1																									1
	7 2	017	MDA	1	0	1																									1
	7 2	019	MDA	1	0	1																									1
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	8 2	016	MDA	1	0	1																									1
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Exhibit P-21, Production Schedule: PB 2020 Missile Defense Agency	Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity:P-1 Line Item Number0300D / 01 / 17MD11 / BMDS Sensor	
Cost Elements (Units in Each) Fiscal Year 2014	Fiscal Year 2015 A
M ACCEPT Calendar Yea	r 2014 Calendar Year 2015 L
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1 2010 MDA 1 1 0	0
1 2012 MDA 2 0 2 2	0
Antenna Equipment Unit (AEU) - 1	
1 2013 MDA 1 0 1	1
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1 2013 MDA 1 0 1 A	· · · · · · · · · · · · · · · ·
Antenna Equipment Unit (AEU) Transformer	
2 2015 MDA 3 0 3	A 3 0
2 2016 MDA 1 0 1	1
2 2017 MDA 1 0 1	1
2 2018 MDA 1 0 1	1
2 2019 MDA 1 0 1	1
2 2020 MDA 1 0 1	1
COBRA DANE Transmitter Group Replacement	
3 2018 MDA 1 0 1	1
3 2019 MDA 1 0 1	1
Cooling Equipment Unit (CEU)	
4 2010 MDA 1 1 0	0
4 2012 MDA 2 0 2 2	0
Cooling Equipment Unit (CEU) - 1	
4 2013 MDA 1 0 1	1
Cooling Equipment Unit (CEU) - 2           4         2013         MDA         1         0         1         A -         -	
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Critical Spares	
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Ex	hib	it P	P1 Line Item Number / Title: MD1 / 1 / BMDS Sensors         Item Number / Title: MD1 / 1 / BMDS Sensors         Item Number / Title: MD1 / 1 / BMDS Sensors         Item Number / Title: MD2 AN/TPV-2 Radars           Gott Eventsite (URIS R-EOR)         Fiscal Var 2014         Fiscal Var 2014         Second Var 2015         <																												
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	7 2	016	MDA	1	0	1																									1
	7 2	017	MDA	1	0	1																									1
	7 2	019	MDA	1	0	1																									1
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Flo	at Ant	enna	Equipment L	Jnit (AEU)																											
	8 2	016	MDA	1	0	1																									1
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Exhibit F	P-21, Pro	oducti	on Scl	nedu	le: PE	3 202	0 Mis	sile D	efens	e Age	ency											Date	e: Ma	rch 20	019				
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	11 2	013	MDA	4	3	1																									1
Prir	ne Po	wer U	nit (PPUs - 2	2 each rad	ar system)																										
	12 2	010	MDA	1	1	0																									0
	12 2	012	MDA	2	2	0																								ſ	0
Prir	ne Po	wer U	nit (PPUs - 2	2 each rad	ar system)	- 1																									
	12 2	013	MDA	1	1	0																									0
Prir	ne Po	wer U	nit (PPUs - 2	2 each rad	ar system)	- 2																									
	12 2	013	MDA	1	1	0																									0
Rad	lar Fie	eld Up	grade (RAF	U) Kit																											
	13 2	017	MDA	1	1	0																									0
Tra	nsmit/	Recei	ve Integrate	d Microwa	ve Module	(TRIMMs	;)																								
	14 2	015	MDA	1	1	0																									0
Cor	tracto	or Cer	tification																												
	15 2	015	MDA	1	1	0																									0
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Ex	hib	it P	P-21, P	roduc	tion S	chedu	le: P	B 202	20 Mis	ssile D	efens	se Ag	ency	/											Date	e: Ma	rch 2	019				
			i <b>ation</b> )1 / 17	Budg	jet Act	tivity /	Bud	get S	ub A	ctivity	/:					Num Sens		Title	:										<b>[DOI</b> adars	DIC]:		
				Elements s in Each)								Fiscal	Year 20	020											Fiscal Y	'ear 2021						B A
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	1 2	012	MDA		2	2 0																										0
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	4 2	013	MDA		1	1 0																										0
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	4 2	013	MDA		1	1 0																										0
Crit	ical S	oares																														
	5 2	014	MDA		1	1 0																										0
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Ex	hib	it P	-21, Pr	oduct	ion Sc	hedu	le: PE	3 202	0 Mis	sile D	efens	se Ag	ency											Date	e: Ma	rch 20	019				
			<b>ation /</b> 01 / 17	Budg	et Acti	vity /	Budg	jet Si	ub Ac	ctivity	/:		<b>1 Line</b> 011 / E				/ Title	):								n <b>ber /</b> N/TPY			DIC]:		
				lements in Each)								Fiscal	Year 202(	)										Fiscal Y	ear 2021						B A
					ACCEPT										Calenda	r Year 2	020								Caler	ndar Yea	r 2021				L
		FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2019	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	JUN	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	A N C E
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	6 2	013	MDA	1	1	0																						_			0
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	7 2	015	MDA	3	3	0																								-	0
		016	MDA	1	1	0																								-	0
		017	MDA	1	1	0																									0
	7 2	019	MDA	1	1	0										_															0
	7 2	020	MDA	2	0	2			Α-	-	-	-	-	-	1	2															0
			Equipment L	Jnit (AEU)	,	,																									
	8 2	016	MDA	1	1	0																									0
Flo	at Co	oling E	quipment U	nit (CEU)																											
	9 2	012	MDA	1	1	0																									0
	9 2	014	MDA	1	1	0																									0
Flo	at Ele	ctronic	c Equipment	Unit (EEU	J)	,																									
	10 2	012	MDA	1	1	0																									0
	10 2	014	MDA	1	1	0																									0
For	ward-	Based	d Mode Prim	e Power U	Inits (PPU)																										
	11 2	013	MDA	4	3	1																									1
Pri	ne Po	wer U	nit (PPUs - 2	2 each rad	lar system)																										
	12 2	010	MDA	1	1	0																									0
	12 2	012	MDA	2	2	0	1																							ſ	0
Pri	ne Po	wer U	nit (PPUs - 2	2 each rad	lar system)	- 1																									
	12 2	013	MDA	1	1	0																									0
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	12 2	013	MDA10MDA110MDA110MDA100MDA400MDA400MDA100MDA100MDA100MDA100MDA100MDA100MDA100MDA100MDA100MDA100MDA100MDA100MDA100																												
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	13 2	017	MDA	1	1	0																									0
Tra	nsmit	Recei	ive Integrate	d Microwa	ve Module	(TRIMMs	;)																								
	14 2	015	MDA	1	1	0																									0
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Exh	hibit P-21, Production	Schedule:	PB 2020 Miss	ile Defense A	Agency				Da	ate: March 20	19	
	oropriation / Budget / 0D / 01 / 17	Activity / Buo	dget Sub Act	-	<b>P-1 Line Item</b> MD11 / BMDS		tle:			em Number / MDS AN/TPY-	Title [DODIC] 2 Radars	:
		Produc	tion Rates (Each /	Month)				Procurement Le	adtime (Months)			
MFR						In	itial			Rec	rder	
Ref #	Manufacturer Name - Location	MSR For 2020	1-8-5 For 2020	MAX For 2020	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Raytheon - Woburn, MA	1	1	4	4	3	30	33	(	0	0	0
2	Raytheon - Woburn, MA	1	4	4	2	3	9	12	2	3	9	12
3	Raytheon - Washington, D.C.	1	1	1	3	2	12	14	3	2	12	14
4	Raytheon - Woburn, MA	1	1	4	4	2	30	32	(	0	0	0
5	Raytheon - Woburn, MA	1	1	4	4	2	12	14	2	2	12	14
6	Raytheon - Woburn, MA	1	1	4	4	2	30	32		0 0	0	0
7	Raytheon - Woburn, MA	1	2	4	2	3	6	9	2	3	6	9
8	Raytheon - Woburn, MA	1	1	4	4	2	30	32	(	0	0	0
9	Raytheon - Woburn, MA	1	1	4	4	2	15	17	(	0	0	0
10	Raytheon - Woburn, MA	1	1	4	4	2	24	26	(	0 0	0	0
11	Raytheon - Woburn, MA	1	1	4	4	2	24	26	(	0 0	0	0
12	Raytheon - Woburn, MA	1	1	4	4	2	30	32	(	0	0	0
13	Raytheon - Woburn, MA	1	2	4	2	3	6	9	2	3	6	9
14	Raytheon - Woburn, MA	1	1	4	4	2	18	20		2	18	20
15	Raytheon - Woburn, MA	1	1	1	3	2	12	14	3	2	12	14

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

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

Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile De	fense Agen	су				Date: M	arch 2019		
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-W Equipment, Missile Defense Ager	ide / BA 01:	•		A 17: Major	1	Line Item N 6 / Arrow 3			,			
ID Code (A=Service Ready, B=Not Service Ready):	A		Program Ele	ments for Co	de B Items: N	/A		Other Relate	d Program El	ements: N/A		
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	2	1	1	1	-	1	1	1	1	1	Continuing	Continuing
Gross/Weapon System Cost (\$ in Millions)	135.000	120.000	80.000	55.000	-	55.000	77.000	62.000	90.000	90.000	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	135.000	120.000	80.000	55.000	-	55.000	77.000	62.000	90.000	90.000	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	135.000	120.000	80.000	55.000	-	55.000	77.000	62.000	90.000	90.000	Continuing	Continuing
(The following	g 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)	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	67.500	120.000	80.000	55.000	-	55.000	77.000	62.000	90.000	90.000	Continuing	Continuing

#### **Description:**

For procurement of Arrow Weapon System components. Quantities are classified. The unit quantity of one is used as a proxy in each fiscal year with funding.

Exhib	bit P-40, Budget Line Item Justification: PB 20	020 Mis	ssile	e Defei	nse Agency			Date: Ma	arch 2019	
03000	opriation / Budget Activity / Budget Sub Activ D: Procurement, Defense-Wide / BA 01: Major E oment, Missile Defense Agency	-	ent	/ BSA		P-1 Line Item Nu MD26 / Arrow 3 U		1		
ID Cod	le (A=Service Ready, B=Not Service Ready): A	Pro	grar	n Eleme	ents for Code B Iter	ns: N/A	Other F	Related Program Ele	ements: N/A	
Line It	em MDAP/MAIS Code: 362	·								
	Exhibits Schedule				Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type		bexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) I (\$ M)
P-5	Israeli Program Procurement		А		2 / 135.000	1 / 120.000	1 / 80.000	1 / 55.000	- / -	1 / 55.000
P-40	Total Gross/Weapon System Cost				2 / 135.000	1 / 120.000	1 / 80.000	1 / 55.000	- / -	1 / 55.000
*Title re	presents 1) the Number / Title for Items; 2) the Number / Title [DODIC	IC] for Am	munit	tion; and/	or 3) the Number / Title	(Modification Type) for N	Iodifications.			
Note: To	otals in this Exhibit P-40 set may not be exact or sum exactly due to r	rounding.								

#### Justification:

For procurement of Arrow Weapon System components.

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	le Defens	se Ageno	су								Date: N	larch 201	19		
Appropriation / B 0300D / 01 / 17	Budget A	ctivity /	Budget	Sub Acti	ivity:	1	. <b>ine Item</b> 6 / Arrow					Item Number / Title [DODIC]: Israeli Program Procurement						
ID Code (A=Service Read	dy, B=Not Serv	ice Ready):	Ą						М	DAP/MAIS	Code:							
F	Resource	e Summ	ary		F	Prior Yea	ars	FY 20	018	FY	2019	FY 2	2020 Base		Y 2020 C	000	FY 2020	Total
Procurement Quantity (Un	its in Each)		-				2	1		1		1			-		1	
Gross/Weapon System Co	ost (\$ in Millior	is)					135.000	120.000		80.00	D	55.000			-		55.000	
Less PY Advance Procure	ement (\$ in Mi	llions)					0.000	0.000 0		0.00	D		-		-		-	
Net Procurement (P-1) (\$	in Millions)						135.000		120.000		80.00	0	55	5.000		-		55.000
Plus CY Advance Procure	ement (\$ in Mil	lions)					0.000		0.000		0.00	0		-		-		
Total Obligation Authori	ation Authority (\$ in Millions)						135.000	120.000			80.000 5			5.000		-		55.000
(7	he following l	Resource Si	ummary row	s are for info	rmational pu	irposes only	. The corres	ponding bud	lget request	s are docume	ented elsewh	ere.)				i		
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System U	nit Cost (\$ in I	Millions)					67.500		120.000		80.00	0	55	5.000		-		55.000
Note: Subtotals or Totals i	in this Exhibit	P-5 may no	t be exact o	r sum exactl	v due to rou	nding												
	1	Prior Years			FY 2018			FY 2019		FY	2020 Bas	9	F	Y 2020 O	co	F	Y 2020 Tota	al
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware Cost				· ·														
Recurring Cost																		
Israeli Programs	67.500	2	135.000	120.000	1	120.000	80.000	1	80.000	55.000	1	55.000	-	-	-	55.000	1	55.000
Subtotal: Recurring Cost	-	-	135.000	-	-	120.000	-	-	80.000	-	-	55.000	-	-	-	-	-	55.000
Subtotal: Hardware Cost	-	-	135.000	-	-	120.000	-	-	80.000	-	-	55.000	-	-	-	-	-	55.000
Gross/Weapon System Cost	67.500	2	135.000	120.000	1	120.000	80.000	1	80.000	55.000	1	55.000	-	-	-	55.000	1	55.000

#### Remarks:

For procurement of Arrow Weapon System components. Quantities are classified. The unit quantity of one is used as a proxy in each fiscal year with funding.

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Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	ense Agen	су				Date: M	arch 2019					
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-W Equipment, Missile Defense Ager	ide / BA 01:			A 17: Major	MD3	<b>P-1 Line Item Number / Title:</b> MD34 / Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weap System (DSWS)									
ID Code (A=Service Ready, B=Not Service Ready):	A		Program Eler	nents for Co	de B Items: N	/A		Other Relate	d Program Ele	ements: N/A					
Line Item MDAP/MAIS Code: 362															
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total			
Procurement Quantity (Units in Each)	2	1	1	1	-	1	1	1	1	1	Continuing	Continuing			
Gross/Weapon System Cost (\$ in Millions)	300.000	120.000	50.000	50.000	-	50.000	50.000	30.000	30.000	30.000	Continuing	Continuing			
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-			
Net Procurement (P-1) (\$ in Millions)	300.000	120.000	50.000	50.000	-	50.000	50.000	30.000	30.000	30.000	Continuing	Continuing			
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-			
Total Obligation Authority (\$ in Millions)	300.000	120.000	50.000	50.000	-	50.000	50.000	30.000	30.000	30.000	Continuing	Continuing			
(The following	g Resource Sumi	mary rows are fo	or informational p	urposes only. Th	e corresponding	g budget requests	s are documente	ed elsewhere.)							
Initial Spares (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-			
Flyaway Unit Cost (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-			
Gross/Weapon System Unit Cost (\$ in Millions)	150.000	120.000	50.000	50.000	-	50.000	50.000	30.000	30.000	30.000	Continuing	Continuing			

#### **Description:**

Previously named David's Sling. PB19 name change to Short Range Ballistic Missile Defense (SRBMD).

-Provides funding to the Government of Israel to procure David's Sling Weapon System (DSWS)/Short Range Ballistic Missile Defense (SRBMD) 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 2020	Missile	e Defer	nse Agency			Date:	March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equip Equipment, Missile Defense Agency		/ BSA	17: Major	<b>P-1 Line Item Nu</b> MD34 / Short Ran System (DSWS)		ssile Defense (S	RBMD) (David's Sli	ng Weapon
D Code (A=Service Ready, B=Not Service Ready): A	Program	m Eleme	ents for Code B Iter	ns: N/A	Othe	r Related Program	Elements: N/A	
ine Item MDAP/MAIS Code: 362								
Exhibits Schedule			Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type Title* Subexhibi	ts CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cos (Each) I (\$ M)	t Quantity / Total Co (Each) I (\$ M)	t Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)
-5 1 / David's Sling Weapon System [1]	A		2 / 300.000	1 / 120.000	1 / 50.000	1 / 50.000	- / -	1 / 50.000
-40 Total Gross/Weapon System Cost			2 / 300.000	1 / 120.000	1 / 50.000	1 / 50.000	- / -	1 / 50.000
Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for	Ammuni	ition; and/	or 3) the Number / Title	(Modification Type) for N	Iodifications.	•		
lote: Totals in this Exhibit P-40 set may not be exact or sum exactly due to roundi	ng.							

#### Justification:

Provides funding to the Government of Israel to procure DSWS/SRBMD components.

Exhibit P-5, Cost	Analysis	: PB 20	20 Missi	ile Defen	se Agen	су								Date:	March 20 <sup>-</sup>	19		
<b>Appropriation / B</b> 0300D / 01 / 17	Budget Ad	ctivity /	Budget	Sub Act	ivity:	MD3	4 / Short	<b>Number</b> Range Ba Weapon	Item Number / Title [DODIC]: 1 / David's Sling Weapon System [1]									
ID Code (A=Service Read	dy, B=Not Servi	ce Ready):	Ą			1			M	DAP/MAIS	S Code:							
F	Resource	Summ	ary		F	Prior Yea	ars	FY 201	18	FY	2019	FY 2	2020 Ba	se	FY 2020 (	000	FY 2020	Total
Procurement Quantity (Un	nits in Each)						2		1			1		1		-		
Gross/Weapon System Co	ost (\$ in Million	s)					300.000		120.000		50.00	0	5	0.000		-		50.00
Less PY Advance Procure	ement (\$ in Mil	lions)					0.000		0.000		0.00	00		-		-		-
Net Procurement (P-1) (\$	in Millions)						300.000		120.000		50.00	00	5	60.000		-		50.00
Plus CY Advance Procure	ement (\$ in Mill	ions)					0.000		0.000		0.00	00		-		-		-
Total Obligation Authori	ity (\$ in Millions	)					300.000		120.000		50.00	0	5	0.000		-		50.00
(7.	The following F	Resource Si	ummary row	vs are for info	ormational p	urposes only	. The corres	ponding budg	et request	s are docum	ented elsewl	here.)						
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System U	nit Cost (\$ in N	1illions)					150.000		120.000		50.00	00	5	0.000		-		50.00
Note: Subtotals or Totals i	in this Exhibit	P-5 may no	ot be exact c	or sum exact	y due to rou	inding.												
	P	rior Years	5		FY 2018			FY 2019		F۱	/ 2020 Bas	е	F	Y 2020 C	oco	F	Y 2020 Tota	al
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
David's Sling Weapon System	150.000	2	300.000	120.000	1	120.000	50.000	1	50.000	50.000	1	50.000	-	-		50.000	1	50.00
	-	-	300.000		-	120.000	-	-	50.000	-	-	50.000	-			-	-	50.00
Subtotal: Recurring Cost						100.000	1		50.000		_	50.000	-	-				50.00
Subtotal: Recurring Cost Subtotal: Hardware Cost Gross/Weapon System	-	-	300.000	-	-	120.000	-	-	50.000	-	-	00.000				-		

#### Remarks:

David's Sling Weapon System/SRBMD component procurement. Quantities are classified. The unit quantity of one is used as a proxy in each fiscal year with Funding.

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Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	ense Ageno	су				Date: N	larch 2019					
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-Wi Equipment, Missile Defense Agen	ide / BA 01:			A 17: Major		P-1 Line Item Number / Title: MD73 / Aegis Ashore Phase III									
ID Code (A=Service Ready, B=Not Service Ready):	A		Program Elen 0603892C	nents for Coc	le B Items: 0	604880C, 0604	881C,	Other Relate	d Program El	ements: 0604	1880C				
Line Item MDAP/MAIS Code: 362															
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total			
Procurement Quantity (Units in Each)	4	1	1	1	-	1	1	-	-	-	-	8			
Gross/Weapon System Cost (\$ in Millions)	425.081	74.739	15.000	25.659	-	25.659	12.000	-	-	-	-	552.479			
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-			
Net Procurement (P-1) (\$ in Millions)	425.081	74.739	15.000	25.659	-	25.659	12.000	-	-	-	-	552.479			
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-			
Total Obligation Authority (\$ in Millions)	425.081	74.739	15.000	25.659	-	25.659	12.000	-	-	-	-	552.479			
(The following	Resource Sum	mary rows are fo	r informational pu	rposes only. Th	e correspondin	g budget requests	s are document	ed elsewhere.)							
Initial Spares (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-			
Flyaway Unit Cost (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-			
Gross/Weapon System Unit Cost (\$ in Millions)	106.270	74.739	15.000	25.659	-	25.659	12.000	-	-	-	-	69.060			

#### **Description:**

Note: FY 2018 includes the \$15.000 million enacted Congressional Plus for Aegis Ashore Poland. The increase from FY 2019 to FY 2020 provides European Phased Adaptive Approach (EPAA) Phase III, configuration and test validations. Attributable to Poland Military Construction delays which pushed EPAA Phase III Technical Capability Declaration (TCD) from CY2018 to CY2020.

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

Aegis Ashore provides the 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 AN/SPY-1D(V)radar, Vertical Launch System (VLS), computing infrastructure, Command, Control, Communications, Computers and Intelligence (C4I) systems, and operator consoles. Aegis Ashore can adapt to the threat and can be deployed to other regions as needed to provide persistent coverage for the Geographic Combatant Commanders. Phase III of EPAA (2020) 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.

Exhib	bit P-40, Budget Line Item Justification: F	B 2020 M	issile	e Defer	nse Agency				Date: M	arch 2019	
0300	opriation / Budget Activity / Budget Sub D: Procurement, Defense-Wide / BA 01: Ma oment, Missile Defense Agency		nent	/ BSA	1.	<b>P-1 Line Item Nu</b> MD73 / Aegis Ash					
ID Cod	e (A=Service Ready, B=Not Service Ready): A		<b>ogra</b> 0389		ents for Code B Iter	<b>ms:</b> 0604880C, 06048	81C,	Other Relat	ted Program Ele	ements: 0604880C	
Line Ite	em MDAP/MAIS Code: 362	I									
	Exhibits Schedule				Prior Years	FY 2018	FY 20 <sup>4</sup>	19 F	Y 2020 Base	FY 2020 OCO	FY 2020 Total
				MDAP/							
Exhibit Type	Title*	Subexhibits	ID CD	MAIS Code	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Tor (Each) / (S		uantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
Туре	Title* Aegis Ashore Poland, Equipment and Deckhouse	Subexhibits		MAIS				5 M)			
		Subexhibits		MAIS	(Each) I (\$ M)	(Each) I (\$ M)	(Each) I (S	\$ M) DO	(Each) I (\$ M)	(Each) I (\$ M)	(Each) I (\$ M)

#### Justification:

The Aegis Ashore to be installed in Poland contains a Deckhouse structure and Weapon System comprised of a AN/SPY-1D(V)radar, Vertical Launch System (VLS), computing infrastructure, Command, Control, Communications, Computers and Intelligence (C4I) systems, and operator consoles with very diverse procurement lead times from multiple contracts. The funding profile addresses the multiple actions required to field the Aegis Ashore end item in Poland by the end of the calendar year 2020, keep the individual components up to date with the Navy's destroyer modernization plan and install modifications as required to enhance co-existence with Broadband Wireless Access systems in the European theater. MDA uses Research Development, Test, and Evaluation (RDT&E) (Program Element (PE)-0604880C) to modernize, develop and test Aegis Ashore capability improvements at the Aegis Ashore Missile Defense Test Complex (AAMDTC) in Hawaii for implementation at operational sites. Procurement funding provides the following:

FY 2016 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 Continue installation of the Aegis Ashore Weapon System in the Aegis Ashore Deckhouse structure in Poland.

FY 2019 Continue installation of the combat system and combat structure adaptation, integration and installation

FY 2020 Continue installation of the combat system and combat structure adaptation, integration and installation

Exhibit P-5, Cost	Analysis	: PB 20	20 Missi	le Defen	se Ageno	су								Date: N	larch 201	9				
<b>Appropriation / B</b> 0300D / 01 / 17	Budget Ac	tivity / I	Budget	Sub Act	ivity:	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 Read	dy, B=Not Servic	e Ready):	4						M	DAP/MAI	S Code:									
F	Resource	Summa	ary		F	Prior Yea	ars	FY 20	018	FY	2019	FY	2020 Ba	se F	Y 2020 0	000	FY 2020	Total		
Procurement Quantity (Un	its in Each)						4		1			1		1		-		1		
Gross/Weapon System C	ost (\$ in Millions	5)					425.081		74.739		15.00	00	2	5.659		-		25.659		
Less PY Advance Procure	ement (\$ in Milli	ions)					0.000		0.000		0.0	00		-		-		-		
Net Procurement (P-1) (\$	in Millions)						425.081		74.739		15.00	00	2	5.659		-		25.659		
Plus CY Advance Procure	ement (\$ in Milli	ons)					0.000		0.000		0.0	00		-		-		-		
Total Obligation Authori	<b>ty</b> (\$ in Millions)						425.081		74.739		15.0	00	2	5.659		-		25.659		
(T	he following R	esource Su	ımmary row	rs are for info	ormational pu	irposes only	. The corres	ponding bua	lget request	s are docum	ented elsew	here.)								
Initial Spares (\$ in Millions)							-		-		-			-		-		-		
Gross/Weapon System U	nit Cost (\$ in M	lillions)					106.270		74.739		15.00	00	2	5.659		-		25.659		
Note: Subtotals or Totals	in this Exhibit	P-5 may no	t be exact c	or sum exact	ly due to rou	nding.								1						
	P	rior Years	;		FY 2018			FY 2019		F	Y 2020 Bas	se	F	Y 2020 O	co	F	Y 2020 Tota	al		
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)		
Flyaway Cost																				
Recurring Cost																				
Aegis Ashore Poland, Equipment and Deckhouse	106.270	4	425.081	74.739	1	74.739	15.000	1	15.000	25.659	1	25.659	-	-	-	25.659	1	25.65		
Subtotal: Recurring Cost	-	-	425.081	-	-	74.739	-	-	15.000	-	-	25.659	-	-	-	-	-	25.659		
Subtotal: Flyaway Cost	-	-	425.081	-	-	74.739	-	-	15.000	-	-	25.659	-	-	-	-	-	25.65		
Gross/Weapon System																				

Remarks:

N/A

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Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	fense Agen	су				Date: M	arch 2019		
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-W Equipment, Missile Defense Ager	ide / BA 01:	•		A 17: Major	1	<b>_ine Item N</b> 3 / Iron Don		le:	,			
ID Code (A=Service Ready, B=Not Service Ready):	A		Program Ele	ments for Co	de B Items: N	/A		Other Relate	d Program El	ements: 0603	913C	
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	6	1	1	1	-	1	1	1	1	1	Continuing	Continuing
Gross/Weapon System Cost (\$ in Millions)	1,311.630	92.000	70.000	95.000	-	95.000	73.000	108.000	80.000	80.000	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,311.630	92.000	70.000	95.000	-	95.000	73.000	108.000	80.000	80.000	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,311.630	92.000	70.000	95.000	-	95.000	73.000	108.000	80.000	80.000	Continuing	Continuing
(The following	g Resource Sumn	nary rows are fo	r informational p	urposes only. Th	e corresponding	g budget request	s are documente	ed elsewhere.)				
Initial Spares (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	218.605	92.000	70.000	95.000	-	95.000	73.000	108.000	80.000	80.000	Continuing	Continuing

## **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.

Exhib	bit P-40, Budget Line Item Justification: PE	3 2020 Mi	ssile	e Defe	nse Agency			Date: M	arch 2019						
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       Program Elements for Code B Items: N/A       Other Related Program Elements: 0603913C															
ID Cod															
Line Ite	ne Item MDAP/MAIS Code: 362														
	Exhibits Schedule     Prior Years     FY 2018     FY 2019     FY 2020 Base     FY 2020 OCO     FY 2020 Total														
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) I (\$ M)	Quantity / Total Cost (Each) / (\$ M)								
P-5	Iron Dome		Α		6 / 1,311.630	1 / 92.000	1 / 70.000	1 / 95.000	- / -	1 / 95.000					
P-40	Total Gross/Weapon System Cost				6 / 1,311.630	1 / 92.000	1 / 70.000	1 / 95.000	- 1 -	1 / 95.000					
*Title rep	presents 1) the Number / Title for Items; 2) the Number / Title [D	ODIC] for Am	nmuni	tion; and/	or 3) the Number / Title	e (Modification Type) for N	Aodifications.								
Note: To	otals in this Exhibit P-40 set may not be exact or sum exactly due	e to rounding.													
Justifi	ication:														

Procurement of additional Iron Dome equipment.

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	le Defens	se Ageno	су								Date: N	/larch 201	9		
Appropriation / B 0300D / 01 / 17	Sudget A	ctivity /	Budget	Sub Acti	vity:	1	<b>.ine Iten</b> 3 / Iron E	<b>Numbe</b> Dome	er / Title:					Item No Iron Do	umber / T me	Title [DO	DIC]:	
ID Code (A=Service Read	dy, B=Not Serv	ice Ready):	4			1			M	DAP/MAIS	S Code:							
F	Resource	e Summa	ary		F	Prior Yea	ars	FY 20	018	FY	2019	FY 2	2020 Bas	se F	Y 2020 C	000	FY 2020	Total
Procurement Quantity (Un	its in Each)		-				6		1			1		1		-		1
Gross/Weapon System Co	ost (\$ in Millior	is)				1,	311.630		92.000		70.000	)	9	5.000		-		95.000
Less PY Advance Procure	ement (\$ in Mi	llions)					0.000		0.000		0.000	)		-		-		-
Net Procurement (P-1) (\$	in Millions)					1,	311.630		92.000		70.000	)	9	5.000		-		95.000
Plus CY Advance Procure	ement (\$ in Mil	lions)					0.000		0.000		0.000	)		-		-		-
Total Obligation Authorit	ty (\$ in Millions	5)				1,	311.630		92.000		70.000	)	9	5.000		-		95.000
(Ti	he following	Resource Sı	Immary rows	s are for info	rmational pu	rposes only	. The corres	ponding bud	lget request	s are docum	ented elsewh	ere.)						
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System Ur	nit Cost (\$ in I	Villions)					218.605		92.000		70.000	D	9	5.000		-		95.000
Note: Subtotals or Totals i	1		1			nding.						1						-
	F	Prior Years	-		FY 2018			FY 2019		F۱	7 2020 Base	-	F	Y 2020 O	co	F	Y 2020 Tot	al
Cost Elements	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)
Hardware Cost					1						I							
Recurring Cost																		
Iron Dome	218.605	6	1,311.630	92.000	1	92.000	70.000	1	70.000	95.000	1	95.000	-	-	-	95.000	1	95.000
Subtotal: Recurring Cost	-	-	1,311.630	-	-	92.000	-	-	70.000	-	-	95.000	-	-	-	-	-	95.000
Subtotal: Hardware Cost	-	-	1,311.630	-	-	92.000	-	-	70.000	-	-	95.000	-	-	-	-	-	95.000
Gross/Weapon System Cost	218.605	6	1,311.630	92.000	1	92.000	70.000	1	70.000	95.000	1	95.000	-	-	-	95.000	1	95.000

### Remarks:

Procurement of additional Iron Dome equipment. Quantities are classified. The unit quantity of one is used as a proxy in each fiscal year with funding.

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Exhibit P-40, Budget Line Item	Justificatio	n: PB 2020	Missile Def	ense Agen	су				Date: M	arch 2019		
<b>Appropriation / Budget Activity</b> 0300D: Procurement, Defense-Wi Equipment, Missile Defense Agen	ide / BA 01:			A 17: Major		Line Item Nu 0 / Aegis BN			vare			
ID Code (A=Service Ready, B=Not Service Ready):	A		Program Eler	nents for Co	de B Items: N	/A		Other Relate	d Program Ele	ements: N/A		
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	33	22	28	36	-	36	33	37	36	30	-	255
Gross/Weapon System Cost (\$ in Millions)	188.398	157.070	97.057	124.986	-	124.986	89.024	85.564	101.275	129.690	-	973.064
Less PY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	188.398	157.070	97.057	124.986	-	124.986	89.024	85.564	101.275	129.690	-	973.064
Plus CY Advance Procurement (\$ in Millions)	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	188.398	157.070	97.057	124.986	-	124.986	89.024	85.564	101.275	129.690	-	973.064
(The following	Resource Sumr	nary rows are fo	or informational p	urposes only. Th	e corresponding	g budget requests	s are documente	d elsewhere.)			· · · · ·	
Initial Spares (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	- [	-
Flyaway Unit Cost (\$ in Millions)	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	5.709	7.140	3.466	3.472	-	3.472	2.698	2.313	2.813	4.323	-	3.816

## **Description:**

Note:

FY 2020 Base procurement budget request provides the procurement, installation and deployment of Aegis Ballistic Missile Defense (BMD) material for operational ships and sites. The Aegis BMD mission is to deliver an enduring, operationally effective and supportable BMD capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades. 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 (SRBMs), Medium-Range Ballistic Missiles (MRBMs), and Intermediate-Range Ballistic Missiles (IRBMs) in the midcourse phase of flight, and shorter range missiles in the terminal phase of flight. Aegis BMD also provides a Long Range Surveillance and Track (LRS&T) capability to the BMDS. Upgrades to both the Aegis BMD Weapon System and the Standard Missile-3 (SM-3) configuration enable Aegis BMD to provide effective, supportable defensive capability against longer range, more sophisticated threats and an enduring Aegis Ashore defensive capability.

Exhib	it P-40, Budget Line Item Justification: F	PB 2020 Mis	ssile	e Defen	ise Agency			Date: Ma	arch 2019	
Appro	opriation / Budget Activity / Budget Sub	Activity:			F	P-1 Line Item Nu	mber / Title:	1		
	): Procurement, Defense-Wide / BA 01: Ma		ent	BSA ·		MD90 / Aegis BM		Software		
	ment, Missile Defense Agency		0	20/1				Contrare		
	e (A=Service Ready, B=Not Service Ready): A	Pro	grar	n Eleme	nts for Code B Iten	ns: N/A	Other F	Related Program Ele	ments: N/A	
ine Ite	m MDAP/MAIS Code: 362		-							
	Exhibits Schedule			1	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Tota
Exhibit		Output	ID	MDAP/ MAIS	Quantity / Total Cost	Quantity / Total Cost	Quantity / Total Cost	Quantity / Total Cost	Quantity / Total Cost	Quantity / Total Co
Type	Title* Aegis BMD Shipsets	Subexhibits P-5a, P-21	CD A	Code	(Each) I (\$ M)	(Each) I (\$ M) 22 / 157.070	(Each) / (\$ M) 28 / 97.057	(Each) I (\$ M)	(Each) / (\$ M) - / -	(Each) I (\$ M) 36 / 124.986
	Total Gross/Weapon System Cost	P-5a, P-21	A		33 / 188.398 33 / 188.398	22 / 157.070	28 / 97.057	36 / 124.986 36 / 124.986	- / -	36 / 124.986 36 / 124.986
		12021014						367124.906	- / -	36/124.900
ше гер	presents 1) the Number / Title for Items; 2) the Number / Title		muni	ion, and/c	i s) the Number / 1 itle	(would alon Type) for M	nouncations.			
orocure Upgrad Upgrad	20 Base procurement dollars in the amount of \$124.96 ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f	for th suppo	e installa ort of the	ation of the BMD bas European Phased A	selines on a ship. Adaptive Approach EF	PAA Phase II require	nents.	·	
Drocure Upgrad Upgrad archited	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
Drocure Jpgrad Jpgrad archited	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
rocure Jpgrad Jpgrad rchiteo	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
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rocure Jpgrad Jpgrad rchiteo	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
procure Jpgrad Jpgrad archited	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
Drocure Jpgrad Jpgrad archited	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
procure Upgrad Upgrad archited	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
procure Upgrad Upgrad archited	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	
procure Upgrad Upgrad archited	ement of cabinets, cabling, equipment, and other mat ding the 3.6 and 4.0 shipsets to 4.x adds capability an ding the 4.x to BL 5.4 (BMD 4.1) delivers a single Aeg cture.	erial required f nd capacity in s nis Weapon Sy	for th suppo stem	e installa ort of the maximiz	ation of the BMD bas European Phased A zing a merger of BM	selines on a ship. Adaptive Approach EF D 4.1 and B/L 5.3 cor	PAA Phase II require	nents. capturing B/L 7 and 5	·	

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missil	e Defens	se Agen	су								Date: N	larch 201	9		
Appropriation / B 0300D / 01 / 17	udget A	ctivity /	Budget S	Sub Acti	ivity:			n <b>Numbe</b> BMD Ha			ware		I		u <b>mber / 1</b> 3MD Ship	-	DIC]:	
ID Code (A=Service Read	dy, B=Not Serv	ice Ready):	4			•			М	DAP/MAI	S Code:		•					
F	Resource	e Summa	ary			Prior Yea	ars	FY 20	018	FY	2019	FY 2	2020 Bas	se l	Y 2020 0	000	FY 2020	) Total
Procurement Quantity (Un	its in Each)		•				33		22		:	28		36		-		36
Gross/Weapon System Co	ost (\$ in Millior	is)					188.398		157.070		97.0	57	12	4.986		-		124.986
Less PY Advance Procure	ement (\$ in Mi	llions)					0.000		0.000		0.0	00		-		-		-
Net Procurement (P-1) (\$	in Millions)						188.398		157.070		97.0	57	12	4.986		-		124.986
Plus CY Advance Procure	ment (\$ in Mil	lions)					0.000		0.000		0.0	00		-		-		-
Total Obligation Authori	ty (\$ in Millions	s)					188.398		157.070		97.0	57	12	4.986		-		124.986
(7.	he following l	Resource Sı	ummary rows	are for info	rmational p	urposes only	. The corres	ponding bud	lget request	s are docum	ented elsew	here.)						
Initial Spares (\$ in Millions)							-		-		-			-		-		-
Gross/Weapon System U	nit Cost (\$ in I	Villions)					5.709		7.140		3.4	66	:	3.472		-		3.472
Note: Subtotals or Totals i	1		1	sum exactly	-	inding.	1											
	F	Prior Years			FY 2018			FY 2019		F١	Y 2020 Bas		F	Y 2020 O	-	F	Y 2020 Tot	1
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)
Hardware Cost				I			1											1
Recurring Cost				,		1		1										
Aegis BL 5.4 ( 4.2) Hardware Procurement	-	-	-	-	-	-	-	-	-	51.996	1	51.996	-	-	-	51.996	1	51.996
Aegis BL 5.4 (BMD 4.1) Installs <sup>(†)</sup>	-	-	-	-	-	-	0.615	3	1.845	0.633	5	3.163	-	-	-	0.633	5	3.163
Aegis BL 5.4 (BMD4.1) Procurement <sup>(†)</sup>	-	-	-	-	-	-	0.162	10	1.620	0.324	8	2.592	-	-	-	0.324	8	2.592
Aegis BL 9.C1 (5.0 CU) Installs	1.400	1	1.400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BL 9.C2 (BMD 5.1) BackFit Installs <sup>(†)</sup>	1.133	3	3.400	1.051	8	8.408	1.485	3	4.455	1.163	2	2.326	-	-	-	1.163	2	2.326
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement <sup>(†)</sup>	2.194	17	37.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BL 9.C2 (BMD 5.1) Inline Installs <sup>(†)</sup>	3.310	1	3.310	1.237	3	3.712	1.499	1	1.499	2.190	3	6.570	-	-	-	2.190	3	6.570
Aegis BL 9.C2 (BMD 5.1) Inline Procurements <sup>(†)</sup>	4.505	3	13.516	3.739	3	11.217	4.325	3	12.975	3.871	3	11.613	-	-	-	3.871	3	11.613
Aegis BMD 3.6 to 4.X Hardware Procurements <sup>(†)</sup>	12.668	7	88.675	15.506	3	46.518	17.451	1	17.451	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost	Analysis	s: PB 20	20 Missi	le Defens	se Agen	су								Date: M	arch 201	9		
Appropriation / B 0300D / 01 / 17	udget A	ctivity / I	Budget	Sub Act	ivity:	1	<b>ine Item</b> 0 / Aegis				ware			<b>Item Nu</b> Aegis Bl		<b>Title [DOI</b> sets	DIC]:	
ID Code (A=Service Read	ly, B=Not Servi	ce Ready):	4						M	DAP/MAIS	S Code:							
Note: Subtotals or Totals i	n this Exhibit	P-5 may no	t be exact c	or sum exactl	y due to rou	nding.			1									
	F	rior Years	6		FY 2018			FY 2019		F۱	( 2020 Ba	5e	F	Y 2020 OC	:0	F۱	2020 Tot	al
Cost Elements	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	<b>Qty</b> (Each)	Total Cost (\$ M)
Aegis BMD 3.6 to 4.X Installs <sup>(†)</sup>	18.800	2	37.600	17.443	5	87.215	18.215	3	54.645	24.482	1	24.482	-	-	-	24.482	1	24.48
Aegis BMD TI-12H Upgrade Procurement	-	-	-	-	-	-	-	-	-	3.420	5	17.099	-	-	-	3.420	5	17.09
Subtotal: Recurring Cost	-	-	185.198	-	-	157.070	-	-	94.490	-	-	119.841	-	-	-	-	-	119.84
Subtotal: Hardware Cost	-	-	185.198	-	-	157.070	-	-	94.490	-	-	119.841	-	-	-	-	-	119.84
Software Cost																		
Recurring Cost													i		i			
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs <sup>(†)</sup>	-	-	-	-	-	-	0.642	4	2.567	0.643	8	5.145	-	-	-	0.643	8	5.14
Aegis BMD 4.0 to 4.X Software Installs	0.533	6	3.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	3.200	-	-	-	-	-	2.567	-	-	5.145	-	-	-	-	-	5.14
Subtotal: Software Cost	-	-	3.200	-	-	-	-	-	2.567	-	-	5.145	-	-	-	-	-	5.14
Gross/Weapon System Cost	5.709	33	188.398	7.140	22	157.070	3.466	28	97.057	3.472	36	124.986	-	-	-	3.472	36	124.986

### Remarks:

The Aegis BL 9.C2 (BMD 5.1) upgrade provides EPAA Phase III integrated Air and Aegis BMD mission capability. The Aegis BL 9.C2 (BMD 5.1) Inline procurement/installation upgrades non-BMD capable ships to full Aegis BL 9.C2 (BMD 5.1) capability. Unit costs for Aegis BL 9.C2 (BMD 5.1) Inline Procurements is dependent on specific ship configuration. These unit costs are averaged in the years where there is a mix of ship configurations and will result in unit cost fluctuations year to year.

The Aegis BL 9.C2 (BMD 5.1) Backfit Procurement upgrade consists of an Aegis Weapon System, Command/Control/Communication and Vertical Launching System hardware necessary to upgrade an inservice Aegis BL 9.C1 (BMD 5.0CU) capable ship to BL 9.C2 (BMD 5.1).

The Aegis BL 9.C2 (BMD 5.1) upgrade provides EPAA Phase III integrated Air and Aegis BMD mission capability. The Aegis BL 9.C2 (BMD 5.1) TI-12H Backfit Procurement upgrade consists of hardware necessary to upgrade existing in-service Aegis BL 9.C2 (BMD 5.1) TI-12 ships to a TI-16 compatible weapon system configuration.

Aegis BL 5.4 (BMD 4.1) merges the BMD 4.1 capability with the U. S. Navy (USN) Aegis Baseline 5.3 into a single integrated computer program. Certification shift from FY 2019 to FY 2020.

The Aegis BL 5.4 (BMD 4.2) AN/SPY-1 upgrade with the U.S. Navy will provide refurbishment of existing ship AN/SPY-1 radar arrays with the installation of antenna Low Noise Amplifiers (LNAs). BMD 4.2 procures an Array Set in FY 2020 to support rotatable pool for radar refurbishment.

All Shipset procurements and installs are in alignment with Navy Ship Fielding Plan as of MAR 2018.

<sup>(†)</sup> indicates the presence of a P-5a

Exhibit P-5a, Procurement	t His	story a	nd Planning: PB 2020 Miss	sile Defense Age	ncy			Date:	March 20	019		
Appropriation / Budget Ac 0300D / 01 / 17	tivi	ty / Bu	0	-1 Line Item Nun D90 / Aegis BMD	n <b>ber / Title:</b> ) Hardware and Sof	tware			Number / BMD Shi		[DODIC]:	
Cost Elements	0 C 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 Issue Date
Aegis BL 5.4 (BMD 4.1) Installs <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Apr 2019	Sep 2019	3	0.150	Y		Jun 2018
Aegis BL 5.4 (BMD 4.1) Installs <sup>(†)</sup>		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington DC	Apr 2020	Sep 2020	5	0.160	Y		Jun 2019
Aegis BL 5.4 (BMD4.1) Procurement <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Apr 2019	Mar 2020	10	0.100	Y		Jan 2018
Aegis BL 5.4 (BMD4.1) Procurement <sup>(†)</sup>		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Apr 2020	Sep 2020	8	0.200	Y		Jan 2019
Aegis BL 9.C2 (BMD 5.1) BackFit Installs <sup>(†)</sup>		2017	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Oct 2017	Oct 2018	3	1.134	Y		Aug 2016
Aegis BL 9.C2 (BMD 5.1) BackFit Installs <sup>(†)</sup>		2018	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Oct 2017	Jun 2018	8	0.710	Y		Aug 2016
Aegis BL 9.C2 (BMD 5.1) BackFit Installs <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Jun 2019	Apr 2020	3	1.485	Y		Jun 2018
Aegis BL 9.C2 (BMD 5.1) BackFit Installs <sup>(†)</sup>		2020	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Feb 2020	Jun 2020	2	1.485	Y		Jun 2019
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement <sup>(†)</sup>		2016	Lockheed Martin / Moorestown, N.J.	SS / FP	Dahlgren, VA	Nov 2015	Jan 2016	11	0.000	N		Sep 2015
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement <sup>(†)</sup>		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	6	2.533	Y		Jul 2016
Aegis BL 9.C2 (BMD 5.1) Inline Installs <sup>(†)</sup>		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	1	3.310	Y		Jul 2016
Aegis BL 9.C2 (BMD 5.1) Inline Installs <sup>(†)</sup>		2018	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Jan 2018	Jan 2019	3	0.450	Y		Jul 2017
Aegis BL 9.C2 (BMD 5.1) Inline Installs <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Jan 2019	Jan 2020	1	0.450	Y		Jul 2018
Aegis BL 9.C2 (BMD 5.1) Inline Procurements <sup>(†)</sup>		2016	Lockheed Martin / Moorestown, N.J.	SS / FP	Dahlgren, VA	Jan 2016	Jan 2016	2	0.000	N		Sep 2015
Aegis BL 9.C2 (BMD 5.1) Inline Procurements		2017	Raytheon / Norfolk, VA	SS / FFP	Washington, D.C.	May 2017	Nov 2018	0	0.600	Y		Jul 2016
Aegis BL 9.C2 (BMD 5.1) Inline Procurements <sup>(†)</sup>		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	May 2017	Nov 2018	1	3.913	Y		Jul 2016
Aegis BL 9.C2 (BMD 5.1) Inline Procurements <sup>(†)</sup>		2018	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2018	Apr 2019	3	3.735	Y		Jul 2017
Aegis BL 9.C2 (BMD 5.1) Inline Procurements <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2019	Aug 2020	3	3.360	Y		Jun 2018

xnibit P-5a, Procuremen	t Hi	story a	nd Planning: PB 2020 Mise	sile Detense Ager	су			Date	March 20	119		
ppropriation / Budget A 300D / 01 / 17	ctivi	ity / Bu		•1 Line Item Nun D90 / Aegis BMD	<b>iber / Title:</b> Hardware and Sot	ftware			<b>Number</b> / s BMD Shi		[DODIC]:	
Cost Elements	0 C 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 Issue Date
Aegis BMD 3.6 to 4.X Hardware Procurements <sup>(†)</sup>		2016	Lockheed Martin / Moorestown, N.J.	SS / FP	Dahlgren, VA	Jan 2016	Jan 2016	6	0.000	N		Sep 2015
Aegis BMD 3.6 to 4.X Hardware Procurements		2017	Raytheon / Norfolk, VA	SS / FFP	Washington, D.C.	Feb 2017	Aug 2018	0	0.980	Y		Jul 2016
Aegis BMD 3.6 to 4.X Hardware Procurements <sup>(†)</sup>		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	1	12.100	Y		Jul 2016
Aegis BMD 3.6 to 4.X Hardware Procurements		2018	Raytheon / Norfolk, VA	SS / FFP	Washington, D.C.	Feb 2018	Aug 2019	0	0.980	Y		Jul 2017
Aegis BMD 3.6 to 4.X Hardware Procurements <sup>(†)</sup>		2018	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2018	Aug 2019	3	12.100	Y		Jul 2017
Aegis BMD 3.6 to 4.X Hardware Procurements <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2019	Aug 2020	1	11.000	Y		Jun 2018
Aegis BMD 3.6 to 4.X Installs <sup>(†)</sup>		2016	Lockheed Martin / Moorestown, N.J.	SS / FP	Dahlgren, VA	Jan 2016	Jan 2016	1	0.000	N		Sep 2015
Aegis BMD 3.6 to 4.X Installs <sup>(†)</sup>		2017	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Jan 2017	Jun 2018	1	9.100	Y		May 2016
Aegis BMD 3.6 to 4.X Installs <sup>(†)</sup>		2018	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Feb 2018	Feb 2019	5	7.100	Y		Aug 2016
Aegis BMD 3.6 to 4.X Installs <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Nov 2017	Sep 2019	3	7.300	Y		Nov 2017
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs <sup>(†)</sup>		2019	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Apr 2019	Sep 2019	4	0.150	Y		Apr 2018
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs <sup>(†)</sup>		2020	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Apr 2020	Sep 2020	8	0.160	Y		Apr 2019

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

Remarks:

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

Ex	hibi	t P	-21, Pr	oduct	ion Sc	hedu	le: Pl	B 202	20 Mis	sile D	efens	se Ag	ency											Date	e: Ma	rch 2	019				
			<b>ation /</b> 1 / 17	Budg	et Acti	vity /	Bud	get S	ub A	ctivity	<b>/:</b>				<b>n Num</b> BMD				oftwa	are						n <b>ber</b> /		<b>p [DO</b> S	DIC]:		
				lements in Each)		,						Fiscal `	Year 201	16							-			Fiscal Y	ear 2017						BA
					ACCEPT			,	_						Calendar	Year 201	16								Cale	ndar Yea	r 2017				L
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Aeg	is BL {	5.4 (B	BMD 4.1) Ins	stalls																											
	1 20	19	MDA	3																											3
	1 20	20	MDA	5	0	5																									5
Aeg	is BL 5	5.4 (B	BMD4.1) Pro	curement																											
:	2 20	19	MDA	10	0	10																									10
:	3 20	20	MDA	8	0	8																									8
Aeg	is BL 9	9.C2 (	(BMD 5.1) E	BackFit Ins	talls																										
	4 20	17	MDA	3	0	3																									3
	4 20	18	MDA	8	0	8																									8
	4 20	19	MDA	3	0	3																									3
	4 20	20	MDA	2	0	2																								-	2
Aeg	is BL 9	9.C2 (	(BMD 5.1) E	BackFit Pro	ocurement																										1
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Exhibit P-21, Production Sched	ule: PB 2020 Missile Defe	ense Agency	Date: March 2019
Appropriation / Budget Activity 0300D / 01 / 17	/ Budget Sub Activity:	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and So	oftware Item Number / Title [DODIC]: Aegis BMD Shipsets
Cost Elements (Units in Each)		Fiscal Year 2016	Fiscal Year 2017 B
M ACCEPT PRIOR BA		Calendar Year 2016	Calendar Year 2017 L
M         PRIOR         BA           0         F         TO 1         DU           C         R         PROC         OCT         AS           0         #         FY         SERVICE         QTY         2015         1 00	EONDJF FCOEAE	F M A M J J A S E A P A U U U E B R R Y N L G P	O         N         D         J         F         M         A         M         J         J         A         S         N           C         O         E         A         E         A         P         A         U         U         U         E         C         C           T         V         C         N         B         R         R         Y         N         L         G         P         E
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs			
13 2019 MDA 4 0	4		
14 2020 MDA 8 0	8		
	O         N         D         J         F           C         O         E         A         E           T         V         C         N         B	F M A M J J A S E A P A U U U E B R R Y N L G P	O         N         D         J         F         M         A         M         J         J         A         S           C         O         E         A         E         A         P         A         U         U         E           T         V         C         N         B         R         R         Y         N         L         G         P

Ex	hik	bit P-21, Production Schedule: PB 2020 Missile Defense Agency																			Date	e: Ma	rch 20	019							
			<b>ation</b> / )1 / 17	Budg	et Acti	vity /	Budç	get S	ub Ac	ctivity	'						<b>Title</b> Iware	: and S	Softwa	re							′ <b>Title</b> ipsets		)IC]:		
				lements in Each)								Fiscal Y	/ear 2018	3									I	iscal Y	ear 2019						BA
	_				ACCEPT									(	Calenda	r Year 20	18								Caler	ndar Yea	r 2019				L
		FY	SERVICE	PROC QTY	PRIOR TO 1 OCT 2017	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	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	Z C C	J U L	A U G	S E P	A N C E
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Aeg	is Bl	9.C2	(BMD 5.1) B	ackFit Ins	talls																										,
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ExI	Exhibit P-21, Production Schedule: PB 2020 Missile Defense Agency       Date: March 2019         Appropriation / Budget Activity / Budget Sub Activity:       P-1 Line Item Number / Title:       Item Number / Title [DODIC]:																						Dat	019											
			<b>iatio</b> 01 / 1		Budg	et Ac	tivity	/ B	Budg	jet Si	ub A	ctivi	ty:				e <b>Item</b> Aegis					and S	oftwa	are				<b>Iten</b> Aeg	<b>n Nun</b> jis BM	n <b>ber</b> /	/ <b>Title</b> ipsets	[DOI	DIC]:		
Cost Elements (Units in Each) Fiscal Year							ar 2018	3												Fiscal Year 2019						B A									
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	Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs																																		
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Exh	ibit F	P-21, Pro	oducti	ion Sc	hedu	le: PE	3 2020	0 Mis	sile D	efens	e Ag	ency											Date	e: Ma	rch 2	019				
													P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software										Item Number / Title [DODIC]: Aegis BMD Shipsets							
	Cost Elements (Units in Each)								Fiscal Year 2020							Fiscal Year 2021								BA						
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Aegis	BL 5.4 (	BMD 4.1) Ins	talls																											
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3		MDA	8		8							A -	-	-	-	-		3												0
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4	2018	MDA	8	8	0																								ļ	0
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4	2020	MDA	2	0	2					A -	-	-	-		1 -	-	-	-	1										ſ	0
Aegis	Aegis BL 9.C2 (BMD 5.1) BackFit Procurement																													
5	2016	MDA	11	11	0																									0
6	2017	MDA	6	6	0	1																							ſ	0
Aegis	BL 9.C2	(BMD 5.1) Ir	nline Instal	ls	-																									
7	2017	MDA	1	1	0																									0
7	2018	MDA	3	3	0	1																							ĺ	0
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Aegis		(BMD 5.1) Ir	nline Procu	irements			11			<u> </u>																				
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1																														

Exhibit P-21, Production Sch	hedule: PB 2020 N	lissile Defense Agency		Date: March 2019
Appropriation / Budget Activ 0300D / 01 / 17	Item Number / Title [DODIC]: Aegis BMD Shipsets			
Cost Elements (Units in Each)		Fiscal Year 2020		Fiscal Year 2021 A
M ACCEPT PRIOR	BAL	Calend	ar Year 2020	Calendar Year 2021
0 F TO 1 C R PROC OCT	DUE         O         N         E           AS OF         C         O         E           1 OCT         T         V         C	DJFMAMJ EAEAPAU CNBRRYN	J A S O N U U E C O L G P T V	D         J         F         M         A         M         J         J         A         S         N           E         A         E         A         P         A         U         U         U         E         C           C         N         B         R         R         Y         N         L         G         P         E
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Inst	stalls			
13 2019 MDA 4 4	0			C
14 2020 MDA 8 0	8	A		C
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Exhib	it P-21, Productio	on Schedule: F	PB 2020 Miss	ile Defense A	gency				Da	te: March 20	19					
	opriation / Budge	t Activity / Bud	lget Sub Act		<b>P-1 Line Item I</b> /ID90 / Aegis E				Item Number / Title [DODIC]: Aegis BMD Shipsets							
		Produc	tion Rates (Each /	Month)	Procurement Leadtime (Months)											
MFR						Ini	tial			Rec	rder					
Ref #	Manufacturer Name - Location	MSR For 2020	1-8-5 For 2020	MAX For 2020	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				
	ockheed Martin - oorestown, N.J.	1	1	6	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	10	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	8	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	4	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	11	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	2	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	1	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	2	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	1	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	6	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	1	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	3	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	4	0	0	0	0	0	0	0	0				
	ockheed Martin - oorestown, N.J.	1	1	8	0	0	0	0	0	0	0	0				

#### Remarks:

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

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

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

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