Department of Defense
Fiscal Year (FY) 2021 Budget Estimates

February 2020

Missile Defense Agency

Defense-Wide Justification Book Volume 2b of 2

Procurement, Defense-Wide

(Includes O&M and MILCON)

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Table of Volumes

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Introduction & Explanation of Contents

The Department of Defense Fiscal Year (FY) 2021 Budget Estimate 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 2021 Budget Estimate Overview
- MDA Appropriation Summary
- Acronyms
- RDT&E Exhibits in BA-03, BA-04, and BA-06

Volume 2b

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

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Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

07 Feb 2020

Appropriation	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted
Procurement, Defense-Wide	2,572,400	1,724,734		
Total Defense-Wide	2,572,400	1,724,734		

P-121PB: FY 2021 President's Budget (Published Version), as of February 7, 2020 at 09:52:12

Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

07 Feb 2020

Appropriation	FY 2020 Total Enacted (Base+Emerg+ OCO)	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
Procurement, Defense-Wide	1,724,734	1,458,169		
Total Defense-Wide	1,724,734	1,458,169		

Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
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(Dollars in Thousands)

07 Feb 2020

Appropriation	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
Procurement, Defense-Wide		1,458,169
Total Defense-Wide		1,458,169

Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

07 Feb 2020

Organization: Procurement, Defense-Wide	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted
Missile Defense Agency, MDA	2,572,400	1,724,734		
Total	2,572,400	1,724,734		

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Organization: Procurement, Defense-Wide	FY 2020 Total Enacted (Base+Emerg+ OCO)	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
Missile Defense Agency, MDA	1,724,734	1,458,169		
Total	1,724,734	1,458,169		

Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
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(Dollars in Thousands)

07 Feb 2020

Organization: Procurement, Defense-Wide	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
Missile Defense Agency, MDA		1,458,169
Total		1,458,169

Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
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(Dollars in Thousands)

07 Feb 2020

Appropriation: Procurement, Defense-Wide

Budget Activity	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted
01. Major Equipment	2,572,400	1,724,734		
Total Procurement, Defense-Wide	2,572,400	1,724,734		

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Appropriation: Procurement, Defense-Wide

Budget Activity	FY 2020 Total Enacted (Base+Emerg+ OCO)	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs
01. Major Equipment	1,724,734	1,458,169		
Total Procurement, Defense-Wide	1,724,734	1,458,169		

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07 Feb 2020

Appropriation: Procurement, Defense-Wide

Budget Activity	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
01. Major Equipment		1,458,169
Total Procurement, Defense-Wide		1,458,169

P-121PB: FY 2021 President's Budget (Published Version), as of February 7, 2020 at 09:52:12

Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

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Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
	Budget Activity 01: Major Equipment										
	Major Equipment, Missile Defense Agency										
31	THAAD	B	110	1,025,804	39	407,203					U
32	Ground Based Midcourse	A	13	(493,464)	69	(400,471)					U
	Less: Advance Procurement (PY)			(-88,000)		(-115,000)					U
				405,464		285,471					
33	Ground Based Midcourse Advance Procurement (CY)			115,000							U
	C (FY 2019 for FY 2020) (M)			(115,000)							
34	Aegis BMD	B	44	(706,366)	30	(336,374)					U
	Less: Advance Procurement (PY)										U
				706,366		336,374					
35	Aegis BMD Advance Procurement (CY)					96,995					U
	C (FY 2020 for FY 2021) (M)					(46,024)					
	C (FY 2020 for FY 2022) (M)					(29,920)					
	C (FY 2020 for FY 2023) (M)					(21,051)					
	C (FY 2021 for FY 2022) (M)										
	C (FY 2021 for FY 2023) (M)										
36	BMDS AN/TPY-2 Radars	A		13,585		10,046					U
37	SM-3 IIAs	B			7	238,000					U
38	Arrow 3 Upper Tier Systems	A	1	80,000	1	55,000					U
39	Short Range Ballistic Missile Defense (SRBMD)	A	1	50,000	1	50,000					U
40	Aegis Ashore Phase III	B		15,000		25,659					U

P-121PB: FY 2021 President's Budget (Published Version), as of February 7, 2020 at 09:52:12

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

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
Budget Activity 01: Major Equipment											
	Major Equipment, Missile Defense Agency										
31	THAAD	B	39	407,203	41	495,396					U
32	Ground Based Midcourse	A	69	(400,471)							U
	Less: Advance Procurement (PY)			(-115,000)							U
				285,471							
33	Ground Based Midcourse Advance Procurement (CY) C (FY 2019 for FY 2020) (M)										U
34	Aegis BMD	B	30	(336,374)	34	(402,219)					U
	Less: Advance Procurement (PY)					(-46,024)					U
				336,374		356,195					
35	Aegis BMD Advance Procurement (CY)			96,995		44,901					U
	C (FY 2020 for FY 2021) (M)			(46,024)							
	C (FY 2020 for FY 2022) (M)			(29,920)							
	C (FY 2020 for FY 2023) (M)			(21,051)							
	C (FY 2021 for FY 2022) (M)					(29,845)					
	C (FY 2021 for FY 2023) (M)					(15,056)					
36	BMDS AN/TPY-2 Radars	A		10,046							U
37	SM-3 IIAs	B	7	238,000	6	218,322					U
38	Arrow 3 Upper Tier Systems	A	1	55,000	1	77,000					U
39	Short Range Ballistic Missile Defense (SRBMD)	A	1	50,000	1	50,000					U
40	Aegis Ashore Phase III	B		25,659		39,114					U

Defense-Wide
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07 Feb 2020

Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
	Budget Activity 01: Major Equipment						
	Major Equipment, Missile Defense Agency						
31	THAAD	B			41	495,396	U
32	Ground Based Midcourse	A					U
	Less: Advance Procurement (PY)						U
33	Ground Based Midcourse Advance Procurement (CY) C (FY 2019 for FY 2020) (M)						U
34	Aegis BMD	B			34	(402,219)	U
	Less: Advance Procurement (PY)					(-46,024)	U
						356,195	
35	Aegis BMD Advance Procurement (CY)					44,901	U
	C (FY 2020 for FY 2021) (M)						
	C (FY 2020 for FY 2022) (M)						
	C (FY 2020 for FY 2023) (M)						
	C (FY 2021 for FY 2022) (M)					(29,845)	
	C (FY 2021 for FY 2023) (M)					(15,056)	
36	BMDS AN/TPY-2 Radars	A					U
37	SM-3 IIAs	B			6	218,322	U
38	Arrow 3 Upper Tier Systems	A			1	77,000	U
39	Short Range Ballistic Missile Defense (SRBMD)	A			1	50,000	U
40	Aegis Ashore Phase III	B				39,114	U

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

Line No	Item Nomenclature	Ident Code	FY 2019 (Base + OCO) Quantity	FY 2019 (Base + OCO) Cost	FY 2020 Base Enacted Quantity	FY 2020 Base Enacted Cost	FY 2020 Emergency Quantity	FY 2020 Emergency Cost	FY 2020 OCO Enacted Quantity	FY 2020 OCO Enacted Cost	Sec
41	Iron Dome	A	1	70,000	1	95,000					U
42	Aegis BMD Hardware and Software	A	26	91,181	36	124,986					U
Total Major Equipment				2,572,400		1,724,734					
Total Procurement, Defense-Wide				2,572,400		1,724,734					

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

Line No	Item Nomenclature	Ident Code	FY 2020 Total Enacted (Base+Emerg+ OCO) Quantity	FY 2020 Total Enacted (Base+Emerg+ OCO) Cost	FY 2021 Base Quantity	FY 2021 Base Cost	FY 2021 OCO for Base Requirements Quantity	FY 2021 OCO for Base Requirements Cost	FY 2021 OCO for Direct War and Enduring Costs Quantity	FY 2021 OCO for Direct War and Enduring Costs Cost	Sec
41	Iron Dome	A	1	95,000	1	73,000					U
42	Aegis BMD Hardware and Software	A	36	124,986	49	104,241					U
Total Major Equipment				1,724,734		1,458,169					
Total Procurement, Defense-Wide				1,724,734		1,458,169					

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Defense-Wide
FY 2021President's Budget
Exhibit P-1 FY 2021 President's Budget
Total Obligational Authority
(Dollars in Thousands)

07 Feb 2020

Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2021 Total OCO Quantity	FY 2021 Total OCO Cost	FY 2021 Total (Base + OCO) Quantity	FY 2021 Total (Base + OCO) Cost	Sec
41	Iron Dome	A			1	73,000	U
42	Aegis BMD Hardware and Software	A			49	104,241	U
Total Major Equipment						1,458,169	
Total Procurement, Defense-Wide						1,458,169	

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Appropriation 0300D: Procurement, Defense-Wide

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Fiscal Year (FY) 2021 President's Budget

Operation and Maintenance, Defense-Wide
Missile Defense Agency

February 2020

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

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

Description of Operations Financed:

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

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

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

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

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

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

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

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

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

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

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

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

- The GMD Program increase of +17 cFTEs due to Missile Field 4 build out (+9 cFTE), and increased communications support and cyber defense at Fort Greely, AK and Vandenberg AFB, CA (+8 cFTE).

- The Aegis BMD Program increase of +2 cFTE provides increased support for sustainment of critical technologies for all aspects of SM-3 Block IA and IB technologies, technology updates, and performance analysis related to sustainment of the SM-3 Block IA and IB Missile Systems.

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

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

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

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

MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

	TOTAL
FY 2021 Budget Request	**505,858**

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

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

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

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

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

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

BMD AWS sustainment support includes:

- Technical and engineering services for in-service BMD ships and sites BMDS test infrastructure maintenance to ensure in-service BMD AWS baselines maintain directed operational availability.
- BMD Engineering Agent technical support and operational analysis for BMD units for casualty correction, technical issues, improvements, maintenance, certification, and delivery of BMD AWS computer program updates to the Fleet;
- Aegis software maintenance corrections in the common source library
- Test site infrastructure and maintenance
- Integrated logistics support of BMD unique parts including technical documentation review and updates, diminishing manufacturing sources, and obsolete materiel surveillance, identification, and resolution

I. Description of Operations Financed (cont.)

- AEGIS BMD mission planner re-host to fleet warfighters

Aegis Ashore sustainment support includes:

- Repairs and rework required post construction to support of site transition
- Host Nation planning yard activities to track modernization updates to the Aegis Ashore technical data package to ensure core Aegis Ashore Deckhouse attributes are maintained
- Development of required test procedures to support on-site installation and checkout and system operations verification testing
- Updates to training, warfighter technical publications
- Initial outfitting for maintenance and logistics materiel

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

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

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

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

I. Description of Operations Financed (cont.)

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

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

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

I. Description of Operations Financed (cont.)

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

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

7. Maintenance and upkeep for all THAAD training devices.

8. Supply maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades.

II. Force Structure Summary:

N/A

III. Financial Summary ($ in thousands)

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

III. Financial Summary ($ in thousands)

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

III. Financial Summary ($ in thousands)

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

III. Financial Summary ($ in thousands)

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

III. Financial Summary ($ in thousands)

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

III. Financial Summary ($ in thousands)

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

III. Financial Summary ($ in thousands)

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

IV. Performance Criteria and Evaluation Summary:

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

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

A. Aegis BMD. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U. S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy short-range, medium-range, and intermediate-range ballistic missiles in the midcourse phase of flight and shorter range missile in terminal phase. Aegis BMD also provides a long range surveillance and track (LRS&T) capability to the BMDS. By the end of FY 2021 there will be 48 total BMDS capable ships requiring maintenance support.

B. Ground-Based Midcourse (GMD). The GMD fielded weapon system is under the command of U.S. Northern Command (NORTHCOM) and is operated by Soldiers from the 100th Missile

IV. Performance Criteria and Evaluation Summary:

Defense Brigade (five crews) headquartered at Schriever AFB (SAFB), Colorado, and its 49th Missile Defense Battalion (five crews) at Fort Greely, Alaska (FGA). In FY 2021, MDA will support 44 operationally deployed GBIs located at FGA (40 GBIs) and Vandenberg Air Force Base, California (VAFB) (4 GBIs). Each GBI delivers a single Exoatmospheric Kill Vehicle (EKV) to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GMD Fire Control System consists of redundant fire control nodes at FGA (two each) and the Missile Defense Integration and Operations Center (MDIOC) (two each) at SAFB. In-Flight Interceptor Communications System (IFICS) Data Terminals (IDTs) are currently located at FGA (two each); VAFB (two each); Eareckson Air Station, Alaska (EAS); and Fort Drum, New York.

C. Ballistic Missile Defense Systems (BMDS) Radars Program. The MDA continues to provide sustainment support for 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars. Five Forward-Based radars at fixed radar sites operate continuously 24 hours a day, 7 days a week, 365 days a year. Seven radars operate in Terminal Mode when integrated with the THAAD battery. Two of the seven Terminal Mode Radars are permanently stationed at OCONUS sites. The operational tempo is met utilizing military personnel and contractor logistics support (CLS) to operate and maintain the radars. FY 2021 includes AN/TPY-2 operations and maintenance execution and Depot Level Maintenance for CEU refurbishments due to vehicle life expectancy, obsolescence improvements, and high OPTEMPO use in corrosive environments. MDA also provides sustainment unique to the MDA Missile Defense mission for the five Upgraded Early Warning Radars (UEWRs) and COBRA DANE Radar, which MDA sustains and operates in conjunction with the U.S. Air Force.

D. Terminal High Altitude Area Defense (THAAD). Army force structure for THAAD is currently set at seven batteries with six launchers operated by 95 Soldiers. The battery is organized to conduct 120-day deployments (45 days of entry operations and 75 days of

IV. Performance Criteria and Evaluation Summary:

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

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

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

- The GMD Program increase of +17 cFTEs due to Missile Field 4 build out (+9 cFTE), and increased communications support and cyber defense at Fort Greely, AK and Vandenberg AFB, CA (+8 cFTE).

- The Aegis BMD Program increase of +2 cFTE provides increased support for sustainment of critical technologies for all aspects of SM-3 Block IA and IB technologies, technology updates, and performance analysis related to sustainment of the SM-3 Block IA and IB Missile Systems.

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

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

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

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CONTRACT SERVICES FUNDING
($ in Millions)

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

Source: Program Resources Collection Process as of 5 Dec 2019

Numbers may not add due to rounding

CONTRACT SERVICES - MANPOWER

Contractor Full-Time Equivalents

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

CONTRACT SERVICES

Defense-Wide Missile Defense Agency
Operation and Maintenance
Justification Narrative

Description of Services Financed:

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

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

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

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

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

C. Ballistic Missile Defense System (BMDS) Radars. Sustainment support for 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Forward-Based and Terminal High Altitude Area Defense (THAAD) configured Terminal Mode radars to include supply support, repair, maintenance, modernization, transportation, parts, storage, special tools and test equipment, recurring and delta training, technical interface, training device maintenance, engineering support, interactive electronic technical manual (IETM) updates, software user guide updates, software revision certification, and depot-level maintenance for missile defense unique equipment. Funding also provides Electronic Equipment Unit (EEU) retrofits at Letterkenny Army Depot to replace obsolete equipment, incorporate updates to upgrade servers, and enhance radar capabilities. Funding provides sustainment support for items unique to the Missile Defense mission for the 5 Upgraded Early Warning Radars (UEWRs) and COBRA DANE Radar, which MDA sustains and operates in conjunction with the U.S. Air Force.

D. Terminal High Altitude Area Defense (THAAD). MDA is responsible for the sustainment support for the THAAD missile defense unique or developmental items, while the U. S. Army is responsible for the operations and sustainment of the common items. Funding provides sustainment support for all fielded THAAD Batteries, ensures THAAD assets are properly maintained and crews are trained to meet Combatant Commanders needs including: 1.) Field and sustainment level supply, maintenance, modernization, hazardous materials/waste disposal, and depot-level maintenance for THAAD missile defense unique equipment. 2.) Spares, Interceptor spares, repair parts, and maintenance capability at the location of each THAAD battery. 3.) Engineering support for the THAAD missile defense unique equipment. 4.) Deployment software support for fielded software, to include deficiency report review, error correction, incremental capability improvements, and hardware/systems interface compatibility maintenance. 5.) Missile transportation and handling from the missile storage location to the site of the THAAD launchers. 6.) IETM updates, software users' guide updates, and software revision certification. 7.) Maintenance and upkeep for all THAAD training devices. 8.) Supply, maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades.

Reporting Limitations:

N/A

Summary of Increases/Decreases:

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

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

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

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

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

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

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

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

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

Missile Defense Agency

(Dollars in Thousands)

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

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MISSILE DEFENSE AGENCY
Operation and Maintenance, Defense-Wide
Fiscal Year (FY) 2021 President's Budget

MISSILE DEFENSE AGENCY	US Direct Hire	Foreign National Direct Hire	Foreign National Indirect Hire	Total
1. FY 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 FTEs	0	0	0	0

MDA – Operation and Maintenance (O&M)	US Direct Hire	Foreign National Direct Hire	Foreign National Indirect Hire	Total
1. FY 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 FTEs	0	0	0	0

MDA – Research, Development, Test and Evaluation (RDT&E)	US Direct Hire	Foreign National Direct Hire	Foreign National Indirect Hire	Total
1. FY 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 FTEs	0	0	0	0

MDA – Defense Working Capital Fund (DWCF)	US Direct Hire	Foreign National Direct Hire	Foreign National Indirect Hire	Total
1. FY 2019 FTEs	0	0	0	0
2. FY 2020 FTEs	0	0	0	0
3. FY 2021 FTEs	0	0	0	0

4. SUMMARY	US Direct Hire	Foreign National Direct Hire	Foreign National Indirect Hire	Total
FY 2019				

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

5. SUMMARY OF CHANGES
Research, Development, Test and Evaluation (RDT&E)

Change from FY 2019 to FY 2020:
MDA's direct RDT&E funded FTE reflects the continued implementation of the Management Headquarter Activity (MHA) reductions. MDA's phased implementation will continue through FY 2020, consistent with the plan approved by the office of the Deputy Management Officer (DCMO).

Change from FY 2020 to FY 2021:
MDA's direct RDT&E funded FTE reflects a 5% funding reduction identified as a part of the Defense Wide Review.

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

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

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Missile Defense Agency

Fiscal Year 2021

President's Budget Submittal

Military Construction Exhibit

Feb 2020

PB21 MILCON Exhibit-02 Jan-2020-V2

MISSILE DEFENSE AGENCY
FY 2021 MILITARY CONSTRUCTION
PRESIDENT'S BUDGET SUBMITTAL
DESCRIPTIVE SUMMARIES

($ in Thousands)

Program	**Authorization**	**Appropriation**
Major Construction	48,000	48,000
Unspecified Minor Construction	4,922	4,922
MILCON Planning & Design	0	0
TOTAL MILITARY CONSTRUCTION	52,922	52,922

MISSILE DEFENSE AGENCY
FY 2021 MILITARY CONSTRUCTION
PROJECT SUMMARY
BY LOCATION

($ in Thousands)

State/Installation/Project	Auth Request	Approp Request	New/ Current Mission	Page No.
Major Construction				
Alaska				
Fort Greely				
Communications Center	48,000	48,000	N	
Unspecified Minor Construction	4,922	4,922		
MILCON Planning and Design	0	0		
TOTAL MILITARY CONSTRUCTION	52,922	52,922		

1. COMPONENT	FY 2021 MILITARY CONSTRUCTION PROGRAM	2. DATE
DEF (MDA)		Feb 2020

3. INSTALLATION AND LOCATION	4. COMMAND	5. AREA CONTRUCTION COST INDEX
Fort Greely, Alaska	Missile Defense Agency	2.53

6. PERSONNEL N/A: Tenant of U.S. Army	(1) PERMANENT			(2) STUDENTS			(3) SUPPORTED			(4) TOTAL
	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	OFFICER	ENLISTED	CIVILIAN	
b. AS OF YYYMMDD										0
b. END FY										0

7. INVENTORY DATA *($000)*	
a. TOTAL ACREAGE (acre)	0.00
b. INVENTORY TOTAL AS OF YYYMMDD	0.00
c. AUTHORIZATION NOT YET IN INVENTORY	0.00
d. AUTHORIZATION REQUESTED IN THIS PROGRAM	48,000.00
e. AUTHORIZATION INCLUDED IN FOLLOWING PROGRAM	0.00
f. PLANNED IN NEXT THREE PROGRAM YEARS	0.00
g. REMAINING DEFICIENCY	0.00
h. GRAND TOTAL	48,000.00

8. PROJECTS REQUESTED IN THIS PROGRAM

a. CATEGORY			b. COST *($000)*	c. DESIGN STATUS	
(1) CODE	(2) PROJECT TITLE	(3) SCOPE		(1) START	(2) COMPLETE
13120	Communications Center	11,500 sf	48,000	Mar 2019	Oct 2020

9. FUTURE PROJECTS

10. MISSION OR MAJOR FUNCTIONS

The mission of the Missile Defense Agency (MDA) is to develop and deploy a layered Missile Defense System (MDS) to defend the United States, its deployed forces, allies, and friends from missile attacks in all phases of flight. The Fort Greely Communication Center project is required to support the Warfighter mission and enhance homeland defense from emerging threats. Improved communications capabilities are required to support expansion activities.

11. OUTSTANDING POLLUTION AND SAFETY DEFICIENCIES

	($000)
A. Air Pollution	0
B. Water Pollution	0
C. Occupational Safety and Health	0

1. COMPONENT	FY 2021 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
MDA		Feb 2020

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
Fort Greely, Alaska	Communications Center

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
0603882C	13120	MDA 680	48,000

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				31,589
Communications Center (13120)	SF	11,500	2,207	(25,380)
Special Construction	LS	-	-	(6,209)
SUPPORTING FACILITIES				11,061
Electrical/Comms Services	LS	-	-	(8,321)
Civil/Mechanical Services	LS	-	-	(920)
Site Preparations	LS	-	-	(1,535)
Site Improvements	LS	-	-	(285)
SUBTOTAL				42,649
CONTINGENCY (5.0%)				2,132
TOTAL CONTRACT COST				44,781
SIOH (6.5%)				2,911
Design During Construction (0.5%)				224
TOTAL REQUEST				47,916
TOTAL REQUEST ROUNDED				48,000
INSTALLED EQPT-OTHER APPROPRIATIONS				(54,166)

10. DESCRIPTION OF PROPOSED CONSTRUCTION :

Construct a Communications Center in support of the Ballistic Missile Defense System (BMDS) at Fort Greely, AK (FGA) to house mission communication equipment.

Primary Facility:

Communications Center with construction matching surrounding existing facilities (cast-in-place concrete walls). The building will use a single sloped or double pitched roof as part of a cold roof design. The facility will be a single story structure with attic that permits access to inspect High Altitude Electromagnetic Pulse (HEMP) shield from above. Interior framing will include seismic supports for installed equipment. Lightning protection and equipment grounding/bonding systems are included. Foundation includes features to meet site-specific ground motion, seismic and any blast protection requirements. Anti-Terrorism Force Protection features will be incorporated in accordance with applicable Unified Facilities Criteria (UFC). Facility to comply with UFC 1-200-01 DoD Building Code.

Facility will incorporate special construction for HEMP, Electromagnetic Interference (EMI), and Toxic Free Area protection.

1. COMPONENT	FY 2021 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
MDA		Feb 2020

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
Fort Greely, Alaska	Communications Center

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
0603882C	13120	MDA 680	48,000

10. DESCRIPTION OF PROPOSED CONSTRUCTION : (continued)

Supporting Facilities:

Electrical and Communications services will include HEMP protected electrical distribution and communications (existing and new) systems. Utilidor extension will be provided to connect to the existing infrastructure.

Civil and Mechanical Services will include water, sewer, walkways, fire protection & alarm systems and sewer / septic system. Appropriate HEMP and EMI waveguides will be used for all mechanical penetrations through shield boundaries.

Site Preparations include mobilization, clearing, grubbing, excavation and grading.

Site Improvements include connection to existing roads, fencing and new pavements.

11. REQUIREMENT: 25,353 SF ADQT: 13,853 SF SUBSTD: 0 SF

PROJECT: Construct a Communications Center and supporting infrastructure to house mission communication equipment required for connectivity between BMDS assets.

REQUIREMENT: This project is required to support the Warfighter mission and enhance homeland defense from emerging threats. As adversaries pursue credible and advanced capabilities, the United States must improve and adapt its missile defense capabilities to outpace the threats.

CURRENT SITUATION: This capability does not currently exist at FGA to support BMDS mission requirements. The Warfighter executes its mission using existing facilities distributed geographically across the BMDS. Operational Ground Based Interceptors (GBIs) are hosted at FGA and Vandenberg Air Force Base, CA, with additional equipment distributed worldwide.

IMPACT IF NOT PROVIDED: The Warfighter lacks additional space for mission communication equipment from which to execute the BMDS mission.

ADDITIONAL INFORMATION:

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

Anti-Terrorism Force Protection will be incorporated in accordance with applicable Unified Facilities Criteria (UFC).

Project to be executed in accordance with the NMD Deployment Final EIS dated July 2000.

Complies with UFC 1-200-02 High Performance and Sustainable Building Requirements to achieve high performance and sustainable buildings complying with the Energy Policy Act of 2005, and the Energy Independence and Security Act of 2007.

1. COMPONENT	FY 2021 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
MDA		Feb 2020

4. INSTALLATION AND LOCATION	4. PROJECT TITLE
Fort Greely, Alaska	Communications Center

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
0603882C	13120	MDA 680	48,000

12. SUPPLEMENTAL DATA:

A. Estimated Execution Data

(1) Acquisition Strategy:	Design-Bid-Build
(2) Design Data	
(a) Design or Request for Proposal (RFP) Started:	Mar 2019
(b) Percent Complete As Of January 2020	65%
(c) Design or RFP Complete:	Oct 2020
(d) Total Design Cost ($000):	4,800
(e) Energy Study and/or Life Cycle Analysis performed	No
(f) Standard or definitive design used?	No
(3) Construction Data:	
(a) Contract Award	Feb 2021
(b) Construction Start	Apr 2021
(c) Construction Completion	Jun 2023

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

Equipment Nomenclature	Procuring Appropriation	FY Appropriated or Requested	Cost $(000)
Construction Free Zone (CFZ)	RDT&E	FY21	1,921
Equipment Rack Isolation Framing	RDT&E	FY21	240
Site Activation / IPO	RDT&E	FY22-23	2,248
GFC/GCN Equipment	RDT&E	FY22-23	47,856
Security Equipment/IESS	RDT&E	FY22	533
Mission Fiber Optic Cable	RDT&E	FY23	739
Furniture, Furnishings & Equipment(FFE)	RDT&E	FY23	629
		Total RDT&E:	54,166
		Total:	54,166

1. COMPONENT	FY 2021 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
MDA		Feb 2020

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
Various Worldwide Locations	Unspecified Minor Construction

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
N/A	N/A	N/A	4,922

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
Unspecified Minor Construction	LS			4,922
SUBTOTAL				4,922
CONTINGENCY PERCENT (0.0%)				0
ESTMATED CONTRACT COST				4,922
SUPERVISION, INSPECTION & OVERHEAD (0.0%)				0
TOTAL REQUEST				4,922
TOTAL REQUEST (ROUNDED)				4,922
INSTALLED EQPT-OTHER APPROPRIATIONS				(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 required

REQUIREMENT: New and expanded facilities supporting MDA missions with a cost up to $6,000,000 adjusted for location (not to exceed $10,000,000) within the U.S. and territories, and up to $6,000,000 elsewhere. These funds provide MDA the capability to react in FY 2021 to any priority emergent requirements for construction, alteration, or modification of facilities resulting from unforeseen situations affecting mission performance or safety of life or property. Included would be projects to support mission critical research and development requirements of the Ballistic Missile Defense System.

All required NEPA and/or EO 12114 analyses will be completed prior to the start of construction for each unspecified construction project.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD07 / THAAD

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0603881C, 0604876C	Other Related Program Elements: 0604876C, 0603881C
Line Item MDAP/MAIS Code: 362		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	385	110	39	41	-	41	26	25	29	29	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	5,278.493	1,025.804	407.203	495.396	-	495.396	341.042	328.354	374.424	425.125	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	5,278.493	1,025.804	407.203	495.396	-	495.396	341.042	328.354	374.424	425.125	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**5,278.493**	**1,025.804**	**407.203**	**495.396**	**-**	**495.396**	**341.042**	**328.354**	**374.424**	**425.125**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	10.238	8.410	8.464	9.840	-	9.840	9.849	10.143	10.144	12.068	Continuing	Continuing
Gross/Weapon System Unit Cost *($ in Millions)*	13.710	9.325	10.441	12.083	-	12.083	13.117	13.134	12.911	14.659	Continuing	Continuing

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.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD07 / THAAD

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

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	THAAD	P-5a, P-21	B		385 / 5,278.493	110 / 1,025.804	39 / 407.203	41 / 495.396	- / -	41 / 495.396
P-40	**Total Gross/Weapon System Cost**				**385 / 5,278.493**	**110 / 1,025.804**	**39 / 407.203**	**41 / 495.396**	**- / -**	**41 / 495.396**

*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 increase from FY 2020 to FY 2021 budget provides for an increase in the THAAD Interceptor procurement quantity from 39 in FY 2020 to 41 in FY 2021, required THAAD Battery Ground Component enhancement modifications to meet the growing cyber threat and additional interceptor obsolescence parts.

The FY 2021 budget request includes 41 THAAD Interceptors, the THAAD Stockpile Reliability Program, Production and Training Support, THAAD Skills Trainer software updates, obsolescence mitigation efforts and the procurement of required THAAD Battery Ground Component modifications to meet the growing cyber threat.

In FY 2021 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 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.

Two (2) of the seven (7) THAAD Batteries delivered to date were funded with Research Development Test and Evaluation (RDT&E) in Program Element (PE) 0603881C, thus not included in the costs above.

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

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
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:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	385	110	39	41	-	41
Gross/Weapon System Cost *($ in Millions)*	5,278.493	1,025.804	407.203	495.396	-	495.396
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	5,278.493	1,025.804	407.203	495.396	-	495.396
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**5,278.493**	**1,025.804**	**407.203**	**495.396**	**-**	**495.396**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	13.710	9.325	10.441	12.083	-	12.083

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Recurring Cost																		
Interceptor(†)	10.238	385	3,941.809	8.388	110	922.729	8.464	39	330.093	9.840	41	403.453	-	-	-	9.840	41	403.453
Launcher(†)	8.110	36	291.977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Equipment	25.943	9	233.491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TFCC Tactical Station Group(†)	10.522	8	84.179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*4,551.456*	-	-	*922.729*	-	-	*330.093*	-	-	*403.453*	-	-	-	-	-	*403.453*
Subtotal: Hardware Cost	**-**	**-**	***4,551.456***	**-**	**-**	***922.729***	**-**	**-**	***330.093***	**-**	**-**	***403.453***	**-**	**-**	**-**	**-**	**-**	***403.453***
Support Cost																		
INDOPACOM JEON	4.140	1	4.140	37.800	1	37.800	-	-	-	-	-	-	-	-	-	-	-	-
Obsolescence and Modifications	31.178	6	187.069	42.656	1	42.656	25.151	1	25.151	65.774	1	65.774	-	-	-	65.774	1	65.774
Production Support & Testing	54.756	7	383.291	22.619	1	22.619	44.549	1	44.549	18.612	1	18.612	-	-	-	18.612	1	18.612
Training	21.791	7	152.537	-	-	-	7.410	1	7.410	7.557	1	7.557	-	-	-	7.557	1	7.557
Subtotal: Support Cost	**-**	**-**	***727.037***	**-**	**-**	***103.075***	**-**	**-**	***77.110***	**-**	**-**	***91.943***	**-**	**-**	**-**	**-**	**-**	***91.943***
Gross/Weapon System Cost	**13.710**	**385**	**5,278.493**	**9.325**	**110**	**1,025.804**	**10.441**	**39**	**407.203**	**12.083**	**41**	**495.396**	**-**	**-**	**-**	**12.083**	**41**	**495.396**

Remarks:

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
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 Procurement" cost above includes the costs of all hardware. Prior FYs funding includes procurement of ground components, which affects the "Gross Weapon System Unit Cost". Support Equipment captures miscellaneous items such as THAAD Missile Round Pallet-Transportable (MRP-T), THAAD Active Leak Sensor System (TALSS), and Battery Support Center (BSC) that support the THAAD Batteries and varies from year to year.

The increase in the Interceptor line above from FY 2020 to FY 2021 provides for an increase in the THAAD interceptor procurement quantity from 39 in FY 2020 to 41 in FY 2021.

The decrease in the Production Support & Testing from FY 2020 to FY 2021 reflects the completion of procuring test equipment and production fixtures for the new Stockpile Reliability Test Interceptor assembly/ disassembly line.

The increase in the Obsolescence and Modifications from FY 2020 to FY 2021 provides for the procurement of required THAAD Battery Ground Component enhancement modifications to meet the growing cyber threat and the procurement of additional interceptor obsolescence parts.

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

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Interceptor - Lot 1(†)		2010	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2011	Jul 2012	26	14.480	Y		Oct 2009
Interceptor - Lot 2(†)		2011	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2011	Jul 2013	22	12.100	N		Oct 2009
Interceptor - Lot 4(†)		2012	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Aug 2012	Jun 2015	46	11.022	N		Aug 2011
Interceptor - Lot 5(†)		2013	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Sep 2013	Jul 2017	34	11.022	N		Aug 2011
Interceptor - Lot 6(†)		2014	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2013	Mar 2018	27	11.022	N		Jun 2013
Interceptor - Lot 7(†)		2015	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2015	Aug 2018	38	10.100	N		Mar 2014
Interceptor - Lot 8(†)		2016	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2015	Feb 2019	36	10.100	N		Apr 2015
Interceptor - Lot 9(†)		2017	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Mar 2017	Jan 2020	47	9.185	N		May 2016
Interceptor - Lot 10(†)		2018	Lockheed Martin / Troy, AL	SS / FPIF	MDA, Huntsville, AL	Dec 2017	Jun 2020	109	9.169	N		Dec 2016
Launcher - Lot 1(†)		2010	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	May 2011	Apr 2013	6	9.170	Y		Oct 2009
Launcher - Lot 3(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	May 2014	6	9.130	Y		Aug 2011
Launcher - Lot 2(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	May 2011	Oct 2013	6	9.130	Y		Oct 2009
Launcher - Lot 4(†)		2012	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Nov 2014	6	7.490	Y		Aug 2011
Launcher - Lot 6(†)		2014	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Aug 2014	Mar 2016	12	9.050	Y		Jun 2013
TFCC Tactical Station Group - Lot 2(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Mar 2011	May 2013	4	10.100	Y		Oct 2009
TFCC Tactical Station Group - Lot 3(†)		2011	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Aug 2014	2	10.100	Y		Aug 2011
TFCC Tactical Station Group - Lot 4(†)		2012	Lockheed Martin / Camden, AR	SS / FFP	MDA, Huntsville, AL	Jul 2012	Oct 2014	2	9.260	Y		Aug 2011

(†) indicates the presence of a P-21

Remarks:

Lot 3 Interceptors were removed due to a Congressional Mark in FY 2011. Lot numbers relate to groupings in fiscal years and no Launcher or Tactical Fire Control and Communication (TFCC) Tactical Station Groups (TSGs) were scheduled for procurement in FY 2013, therefore Lot 5 is an interceptor only Lot. Delivery of Battery 3 completed in FY 2013. Delivery of Battery 4 completed in FY 2014. Delivery of Battery 5 completed in FY 2015. Delivery of Battery 6 completed in FY 2016. Delivery of Battery 7 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 P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2011												Fiscal Year 2012												
							Calendar Year 2011												Calendar Year 2012												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2010	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	BALANCE
Interceptor - Lot 1																															
	1	2010	MDA	26	0	26						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	25
Interceptor - Lot 2																															
	2	2011	MDA	22	0	22						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
Interceptor - Lot 4																															
	3	2012	MDA	46	0	46																							A -	-	46
Interceptor - Lot 5																															
	4	2013	MDA	34	0	34																									34
Interceptor - Lot 6																															
	5	2014	MDA	27	0	27																									27
Interceptor - Lot 7																															
	6	2015	MDA	38	0	38																									38
Interceptor - Lot 8																															
	6	2016	MDA	36	0	36																									36
Interceptor - Lot 9																															
	6	2017	MDA	47	0	47																									47
Interceptor - Lot 10																															
	6	2018	MDA	109	0	109																									109
Launcher - Lot 1																															
	7	2010	MDA	6	0	6								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Launcher - Lot 3																															
	8	2011	MDA	6	0	6																							A -	-	6
Launcher - Lot 2																															
	9	2011	MDA	6	0	6								A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Launcher - Lot 4																															
	10	2012	MDA	6	0	6																							A -	-	6
Launcher - Lot 6																															
	11	2014	MDA	12	0	12																									12
TFCC Tactical Station Group - Lot 2																															
	12	2011	MDA	4	0	4						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
TFCC Tactical Station Group - Lot 3																															
	13	2011	MDA	2	0	2																							A -	-	2
TFCC Tactical Station Group - Lot 4																															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2011												Fiscal Year 2012												BALANCE
										Calendar Year 2011														Calendar Year 2012									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2010	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	14	2012	MDA	2	0	2																					A -	-	-	2
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2013												Fiscal Year 2014												
							Calendar Year 2013												Calendar Year 2014													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2012	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	BALANCE
Interceptor - Lot 1																															
	1	2010	MDA	26	1	25	-	-	-	-	-	3	6	6	7	3															0
Interceptor - Lot 2																															
	2	2011	MDA	22	0	22	-	-	-	-	-	-	-	-	-	4	4	4	3	3	3	-	-	-	1						0
Interceptor - Lot 4																															
	3	2012	MDA	46	0	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46
Interceptor - Lot 5																															
	4	2013	MDA	34	0	34												A -	-	-	-	-	-	-	-	-	-	-	-	-	34
Interceptor - Lot 6																															
	5	2014	MDA	27	0	27															A -	-	-	-	-	-	-	-	-	-	27
Interceptor - Lot 7																															
	6	2015	MDA	38	0	38																									38
Interceptor - Lot 8																															
	6	2016	MDA	36	0	36																									36
Interceptor - Lot 9																															
	6	2017	MDA	47	0	47																									47
Interceptor - Lot 10																															
	6	2018	MDA	109	0	109																									109
Launcher - Lot 1																															
	7	2010	MDA	6	0	6	-	-	-	-	-	-	1	2	-	-	3														0
Launcher - Lot 3																															
	8	2011	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1
Launcher - Lot 2																															
	9	2011	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1							0
Launcher - Lot 4																															
	10	2012	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Launcher - Lot 6																															
	11	2014	MDA	12	0	12																							A -	-	12
TFCC Tactical Station Group - Lot 2																															
	12	2011	MDA	4	0	4	-	-	-	-	-	-	-	1	1	-	-	-	-	-	2										0
TFCC Tactical Station Group - Lot 3																															
	13	2011	MDA	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0
TFCC Tactical Station Group - Lot 4																															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2013												Fiscal Year 2014											BALANCE
										Calendar Year 2013														Calendar Year 2014								
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2012	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	14	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
							Calendar Year 2015												Calendar Year 2016													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Interceptor - Lot 1																															
	1	2010	MDA	26	26	0																									0
Interceptor - Lot 2																															
	2	2011	MDA	22	22	0																									0
Interceptor - Lot 4																															
	3	2012	MDA	46	0	46	-	-	-	-	-	-	-	-	3	-	-	-	-	2	7	-	-	-	-	-	12	-	-	-	22
Interceptor - Lot 5																															
	4	2013	MDA	34	0	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34
Interceptor - Lot 6																															
	5	2014	MDA	27	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27
Interceptor - Lot 7																															
	6	2015	MDA	38	0	38															A -	-	-	-	-	-	-	-	-	-	38
Interceptor - Lot 8																															
	6	2016	MDA	36	0	36															A -	-	-	-	-	-	-	-	-	-	36
Interceptor - Lot 9																															
	6	2017	MDA	47	0	47																									47
Interceptor - Lot 10																															
	6	2018	MDA	109	0	109																									109
Launcher - Lot 1																															
	7	2010	MDA	6	6	0																									0
Launcher - Lot 3																															
	8	2011	MDA	6	5	1	1																								0
Launcher - Lot 2																															
	9	2011	MDA	6	6	0																									0
Launcher - Lot 4																															
	10	2012	MDA	6	0	6	-	1	1	1	1	1	1																		0
Launcher - Lot 6																															
	11	2014	MDA	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	1	1	2	1	2
TFCC Tactical Station Group - Lot 2																															
	12	2011	MDA	4	4	0																									0
TFCC Tactical Station Group - Lot 3																															
	13	2011	MDA	2	2	0																									0
TFCC Tactical Station Group - Lot 4																															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD07 / THAAD	**Item Number / Title [DODIC]:** THAAD

Cost Elements (Units in Each)							Fiscal Year 2015												Fiscal Year 2016												BALANCE
										Calendar Year 2015														Calendar Year 2016									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	14	2012	MDA	2	0	2	1	1																						0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												
							Calendar Year 2017												Calendar Year 2018												
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	BALANCE
Interceptor - Lot 1																															
	1	2010	MDA	26	26	0																									0
Interceptor - Lot 2																															
	2	2011	MDA	22	22	0																									0
Interceptor - Lot 4																															
	3	2012	MDA	46	24	22	-	-	-	-	-	-	2	3	9	8															0
Interceptor - Lot 5																															
	4	2013	MDA	34	0	34	-	-	-	-	-	-	-	-	-	4	8	7	1	-	4	-	7	3							0
Interceptor - Lot 6																															
	5	2014	MDA	27	0	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	12	6	1				0
Interceptor - Lot 7																															
	6	2015	MDA	38	0	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	6	22
Interceptor - Lot 8																															
	6	2016	MDA	36	0	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
Interceptor - Lot 9																															
	6	2017	MDA	47	0	47						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47
Interceptor - Lot 10																															
	6	2018	MDA	109	0	109															A	-	-	-	-	-	-	-	-	-	109
Launcher - Lot 1																															
	7	2010	MDA	6	6	0																									0
Launcher - Lot 3																															
	8	2011	MDA	6	6	0																									0
Launcher - Lot 2																															
	9	2011	MDA	6	6	0																									0
Launcher - Lot 4																															
	10	2012	MDA	6	6	0																									0
Launcher - Lot 6																															
	11	2014	MDA	12	10	2	1	1																							0
TFCC Tactical Station Group - Lot 2																															
	12	2011	MDA	4	4	0																									0
TFCC Tactical Station Group - Lot 3																															
	13	2011	MDA	2	2	0																									0
TFCC Tactical Station Group - Lot 4																															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												BALANCE
										Calendar Year 2017														Calendar Year 2018									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	14	2012	MDA	2	2	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
							Calendar Year 2019												Calendar Year 2020													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
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	-	4	10	-	8																				0
Interceptor - Lot 8																															
	6	2016	MDA	36	0	36	-	-	-	-	3	6	3	3	4	5	2	5	1	4											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																															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD07 / THAAD	**Item Number / Title [DODIC]:** THAAD

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019														Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	14	2012	MDA	2	2	0																								0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
							Calendar Year 2021												Calendar Year 2022													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
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	38	0																									0
Interceptor - Lot 8																															
	6	2016	MDA	36	36	0																									0
Interceptor - Lot 9																															
	6	2017	MDA	47	47	0																									0
Interceptor - Lot 10																															
	6	2018	MDA	109	25	84	8	8	8	8	8	8	8	8	8	8	4														0
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																															
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD07 / THAAD	Item Number / Title [DODIC]: THAAD

Cost Elements (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												BALANCE
										Calendar Year 2021														Calendar Year 2022									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	14	2012	MDA	2	2	0																								0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD07 / THAAD	**Item Number / Title [DODIC]:** THAAD

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Lockheed Martin - Troy, AL	1	4	8	6	6	16	22	6	4	27	31
2	Lockheed Martin - Troy, AL	1	4	8	6	6	28	34	6	4	27	31
3	Lockheed Martin - Troy, AL	1	4	8	6	11	36	47	6	11	36	47
4	Lockheed Martin - Troy, AL	1	4	8	6	12	37	49	6	12	37	49
5	Lockheed Martin - Troy, AL	1	4	8	6	3	43	46	6	3	43	46
6	Lockheed Martin - Troy, AL	1	4	8	6	12	31	43	6	12	31	43
7	Lockheed Martin - Camden, AR	1	1	3	6	8	23	31	6	4	21	25
8	Lockheed Martin - Camden, AR	1	1	2	6	10	22	32	6	4	21	25
9	Lockheed Martin - Camden, AR	1	1	2	6	8	29	37	6	4	21	25
10	Lockheed Martin - Camden, AR	1	1	2	6	10	28	38	6	3	21	24
11	Lockheed Martin - Camden, AR	1	1	2	6	6	22	28	6	4	21	25
12	Lockheed Martin - Camden, AR	1	2	2	6	6	26	32	6	4	24	28
13	Lockheed Martin - Camden, AR	1	1	1	6	10	25	35	6	4	24	28
14	Lockheed Martin - Camden, AR	1	1	1	6	10	27	37	6	3	24	27

Remarks:
- Max Production rate is 8 at normal capacity.

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

- In August 2016, interceptor deliveries were paused in order to resolve a cable connector sub-assembly issue. During this time however, production of other interceptor sub-assemblies continued. Interceptor production resumed in November 2016, 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 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD07 / THAAD	**Item Number / Title [DODIC]:** THAAD

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Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0603882C	Other Related Program Elements: 0603882C

Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	10	13	69	-	-	-	-	24	5	2	-	123
Gross/Weapon System Cost *($ in Millions)*	227.000	493.464	400.471	-	-	-	-	10.225	2.130	36.400	-	1,169.690
Less PY Advance Procurement *($ in Millions)*	47.000	88.000	115.000	-	-	-	-	-	-	-	-	250.000
Net Procurement (P-1) *($ in Millions)*	180.000	405.464	285.471	-	-	-	-	10.225	2.130	36.400	-	919.690
Plus CY Advance Procurement *($ in Millions)*	135.000	115.000	0.000	-	-	-	-	-	-	-	-	250.000
Total Obligation Authority *($ in Millions)*	**315.000**	**520.464**	**285.471**	**-**	**-**	**-**	**-**	**10.225**	**2.130**	**36.400**	**-**	**1,169.690**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	22.700	37.959	5.804	-	-	-	-	0.426	0.426	18.200	-	9.510

Description:

The Ground-based Midcourse Defense (GMD) element of the Missile Defense System (MDS) provides combatant commands (CCMDs) 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 (FGA) and Missile Defense Integration and Operations Center (MDIOC) Colorado Springs, Colorado.

The termination of the Redesigned Kill Vehicle (RKV) development has delayed the procurement of the next 20 GBIs until the Next-Generation Interceptor is developed.

FY 2019 does not include the rescission of $312 million due to RKV termination: $115 million Advanced Procurement and $197 million Procurement

FY 2020 procures up to three (3) C2 boost vehicles to maintain the industrial base, improve reliability, and extend the service life of up to three (3) Capability Enhancement I GBIs.

FY 2020 provides for 66 LSS kits.

FY 2023 provides for 24 installations of LSS retrofits.

FY 2024 provides for 5 installations of LSS retrofits.

FY 2025 procures IDT retrofits for the two Ft. Greely Alaska IDTs to include implementing the Phased Array antenna.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0603882C	Other Related Program Elements: 0603882C

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Ground Based Midcourse		B		0 / 0.000	- / 0.000	69 / 285.471	- / -	- / -	- / -
P-5	Ground Based Interceptors (GBI)	P-5a, P-21	B		0 / 0.000	1 / 253.000	- / 115.000	- / -	- / -	- / -
P-5	Silo Interface Vaults/Silos	P-5a, P-21	B		10 / 227.000	12 / 240.464	- / 0.000	- / -	- / -	- / -
P-40	**Total Gross/Weapon System Cost**				**10 / 227.000**	**13 / 493.464**	**69 / 400.471**	**- / -**	**- / -**	**- / -**

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

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

Justification:
N/A

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Ground Based Midcourse
ID Code (A=Service Ready, B=Not Service Ready) : B		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	0	-	69	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	285.471	-	-	-
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	285.471	-	-	-
Plus CY Advance Procurement *($ in Millions)*	0.000	115.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**115.000**	**285.471**	**-**	**-**	**-**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	0.000	0.000	4.137	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Non Recurring Cost																		
Boost Vehicles	-	-	-	-	-	-	50.000	3	150.000	-	-	-	-	-	-	-	-	-
Launch Support Systems	-	-	-	-	-	-	2.045	66	135.000	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	-	-	-	-	-	-	*285.000*	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***285.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support Cost																		
Obsolescence	-	-	-	-	-	-	0.471	1	0.471	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***0.471***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**0.000**	**0**	**0.000**	**0.000**	**-**	**0.000**	**4.137**	**69**	**285.471**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Remarks:
N/A

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Ground Based Interceptors (GBI)
ID Code (A=Service Ready, B=Not Service Ready) : B		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	0	1	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	253.000	115.000	-	-	-
Less PY Advance Procurement *($ in Millions)*	0.000	56.000	115.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	197.000	0.000	-	-	-
Plus CY Advance Procurement *($ in Millions)*	56.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**56.000**	**197.000**	**0.000**	**-**	**-**	**-**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	0.000	253.000	0.000	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Recurring Cost																		
Ground Based Interceptors(†)	-	-	-	253.000	1	253.000	-	-	115.000	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	-	-	-	*253.000*	-	-	*115.000*	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	**-**	**-**	**-**	**-**	**-**	***253.000***	**-**	**-**	***115.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**0.000**	**0**	**0.000**	**253.000**	**1**	**253.000**	**0.000**	**-**	**115.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Remarks:
Long-Lead Hardware

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD08 / Ground Based Midcourse	Item Number / Title [DODIC]: Ground Based Interceptors (GBI)

Cost Elements	OCO	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
Ground Based Interceptors - Hardware(†)		2019	Boeing / Huntsville	C / CPIF	Huntsville	Oct 2018	Jan 2019	1	0.000	N		Jan 2018

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Ground Based Interceptors (GBI)

Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE
										Calendar Year 2019														Calendar Year 2020									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Ground Based Interceptors - Hardware																															
	1	2019	MDA	1	0	1	A -	-	-	1																					0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Ground Based Interceptors (GBI)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	6	0	38	38	6	0	38	38

"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 Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Silo Interface Vaults/Silos
ID Code (A=Service Ready, B=Not Service Ready) : B		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	10	12	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	227.000	240.464	0.000	-	-	-
Less PY Advance Procurement *($ in Millions)*	47.000	32.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	180.000	208.464	0.000	-	-	-
Plus CY Advance Procurement *($ in Millions)*	79.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**259.000**	**208.464**	**0.000**	**-**	**-**	**-**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	22.700	20.039	0.000	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Non Recurring Cost																		
Silos(†)	22.700	10	227.000	20.039	12	240.464	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*227.000*	-	-	*240.464*	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	**-**	**-**	***227.000***	**-**	**-**	***240.464***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**22.700**	**10**	**227.000**	**20.039**	**12**	**240.464**	**0.000**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Remarks:
N/A

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD08 / Ground Based Midcourse	Item Number / Title [DODIC]: Silo Interface Vaults/Silos

Cost Elements	OCO	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(†)		2018	Boeing / AL/AK/AZ/CA/CO/VA	SS / CPIF	Huntsville, AL	Jan 2018	Jul 2020	10	22.700	Y	Sep 2018	Jan 2018
Silos - Hardware(†)		2019	Boeing / AL/AK/AZ/CA/CO/VA	SS / CPIF	Huntsville, AL	Jan 2018	Mar 2021	12	21.050	Y	Sep 2018	Jan 2018

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Silo Interface Vaults/Silos

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019											BALANCE
										Calendar Year 2018														Calendar Year 2019								
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Silos - Hardware																														
	1	2018	MDA	10	0	10				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
	1	2019	MDA	12	0	12				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Silo Interface Vaults/Silos

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021											BALANCE
										Calendar Year 2020														Calendar Year 2021								
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Silos - Hardware																														
	1	2018	MDA	10	0	10	-	-	-	-	-	-	-	-	-	2	-	1	-	1	-	2	2	2							0
	1	2019	MDA	12	0	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	10
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD08 / Ground Based Midcourse	Item Number / Title [DODIC]: Silo Interface Vaults/Silos

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Silos - Hardware																															
	1	2018	MDA	10	10	0																									0
	1	2019	MDA	12	2	10	-	2	-	2	2	2	-	-	-	-	2														0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**Item Number / Title [DODIC]:** Silo Interface Vaults/Silos

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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	0	20	20	6	0	20	20

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

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Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse
Program Elements for Code B Items: 0603882C	**Other Related Program Elements:** 0603882C
Line Item MDAP/MAIS Code: 362	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Gross/Weapon System Cost *($ in Millions)*	135.000	115.000	0.000	-	-	-	-	-	-	-	-	250.000
Net Procurement (P-1) *($ in Millions)*	135.000	115.000	0.000	-	-	-	-	-	-	-	-	250.000
Total Obligation Authority *($ in Millions)*	**135.000**	**115.000**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**250.000**

Description:
N/A

Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse
Program Elements for Code B Items: 0603882C	**Other Related Program Elements:** 0603882C
Line Item MDAP/MAIS Code: 362	

Exhibits Schedule				Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-10	Ground Based Midcourse			0 / 0.000	- / 115.000	69 / 0.000	- / -	- / -	- / -
P-10	Ground Based Interceptors (GBI)			0 / 56.000	1 / 0.000	- / 0.000	- / -	- / -	- / -
P-10	Silo Interface Vaults/Silos			10 / 79.000	12 / 0.000	- / 0.000	- / -	- / -	- / -
P-40	**Total Gross/Weapon System Cost**			**10 / 135.000**	**13 / 115.000**	**69 / 0.000**	**- / -**	**- / -**	**- / -**

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

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

Justification:
N/A

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**P-5 Number / Title:** Ground Based Midcourse

First System (2021) Award Date:	First System (2021) Completion Date:	Interval Between Systems:
January 2020	January 2020	1 Months

Ground Based Midcourse	Production Leadtime *(Months)*	Prior Years *(Each)*	FY 2019 *(Each)*	FY 2020 *(Each)*	FY 2021 *(Each)*
Quantity	1	0	-	69	-

Cost Elements	When Required *(Months)*	Prior Years *($ M)*	FY 2019 *($ M)*	FY 2020 *($ M)*	FY 2021 *($ M)*
CFE					
RKV Rescission	0	-	115.000	-	0.000
Total: CFE		*0.000*	*115.000*	*0.000*	*0.000*
Total Advance Procurement/Obligation Authority		**0.000**	**115.000**	**0.000**	**-**

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**P-5 Number / Title:** Ground Based Midcourse

Cost Elements	QPA (Each)	FY 2021 Production Leadtime (Months)	FY 2021 Unit Cost ($ M)	FY 2021 Contract Forecast Date	FY 2021 2021 Qty (Each)	FY 2021 For FY	FY 2021 Total Cost Request ($ M)
CFE							
RKV Rescission	1						0.000
Total: CFE							*0.000*
Total Advance Procurement/Obligation Authority							**-**

Description:
Advanced Procurement

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**P-5 Number / Title:** Ground Based Interceptors (GBI)

First System (2021) Award Date:	First System (2021) Completion Date:	Interval Between Systems:
January 2018	April 2021	3 Months

Ground Based Interceptors (GBI)	Production Leadtime *(Months)*	Prior Years *(Each)*	FY 2019 *(Each)*	FY 2020 *(Each)*	FY 2021 *(Each)*
Quantity	38	0	1	-	-

Cost Elements	When Required *(Months)*	Prior Years *($ M)*	FY 2019 *($ M)*	FY 2020 *($ M)*	FY 2021 *($ M)*
Other					
Hardware FY18	0	56.000	-	-	0.000
Total: Other		*56.000*	*0.000*	*0.000*	*0.000*
Total Advance Procurement/Obligation Authority		**56.000**	**0.000**	**0.000**	**-**

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**P-5 Number / Title:** Ground Based Interceptors (GBI)

Cost Elements	QPA (Each)	FY 2021 Production Leadtime (Months)	FY 2021 Unit Cost ($ M)	FY 2021 Contract Forecast Date	FY 2021 2021 Qty (Each)	FY 2021 For FY	FY 2021 Total Cost Request ($ M)
Other							
Hardware FY18	1						0.000
Total: Other							*0.000*
Total Advance Procurement/Obligation Authority							**-**

Description:
Long lead materials for Ground Based Interceptors

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**P-5 Number / Title:** Silo Interface Vaults/Silos

First System (2021) Award Date:	First System (2021) Completion Date:	Interval Between Systems:
January 2018	September 2019	12 Months

Silo Interface Vaults/Silos	Production Leadtime *(Months)*	Prior Years *(Each)*	FY 2019 *(Each)*	FY 2020 *(Each)*	FY 2021 *(Each)*
Quantity	20	10	12	-	-

Cost Elements	When Required *(Months)*	Prior Years *($ M)*	FY 2019 *($ M)*	FY 2020 *($ M)*	FY 2021 *($ M)*
Other					
Hardware FY18	0	79.000	-	-	0.000
Total: Other		*79.000*	*0.000*	*0.000*	*0.000*
Total Advance Procurement/Obligation Authority		**79.000**	**0.000**	**0.000**	**-**

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD08 / Ground Based Midcourse	**P-5 Number / Title:** Silo Interface Vaults/Silos

Cost Elements	QPA (Each)	FY 2021 Production Leadtime (Months)	FY 2021 Unit Cost ($ M)	FY 2021 Contract Forecast Date	FY 2021 2021 Qty (Each)	FY 2021 For FY	FY 2021 Total Cost Request ($ M)
Other							
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 Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C
Line Item MDAP/MAIS Code: 362		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	296	44	30	34	-	34	35	41	34	33	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	4,798.584	706.366	336.374	402.219	-	402.219	407.827	467.028	440.949	438.624	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	46.024	-	46.024	59.765	53.600	-	-	-	159.389
Net Procurement (P-1) *($ in Millions)*	4,798.584	706.366	336.374	356.195	-	356.195	348.062	413.428	440.949	438.624	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	96.995	44.901	-	44.901	17.493	-	-	-	-	159.389
Total Obligation Authority *($ in Millions)*	**4,798.584**	**706.366**	**433.369**	**401.096**	**-**	**401.096**	**365.555**	**413.428**	**440.949**	**438.624**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	44.144	13.498	12.786	11.997	-	11.997	12.515	13.450	-	-	Continuing	Continuing
Gross/Weapon System Unit Cost *($ in Millions)*	16.211	16.054	11.212	11.830	-	11.830	11.652	11.391	12.969	13.292	Continuing	Continuing

Description:

In accordance with the Consolidated Appropriations Act 2020, SM-3 Block IIA was transferred to MD14 from MD09 in FY 2020 and beyond. FY 2018 and FY 2019 costs are contained in MD09.

Net Procurement and Gross Weapon System costs includes all hardware and support costs and are detailed in separate P5s.
Prior Year procurement 71 SM-3 Block IAs are not included.

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.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Aegis BMD SM-3 Block IB	P-5a, P-21	B		276 / 4,236.337	34 / 417.555	30 / 336.374	34 / 402.219	- / -	34 / 402.219
P-5	Aegis BMD SM-3 Block IIA		B		20 / 562.247	10 / 288.811	- / 0.000	- / -	- / -	- / -
P-40	**Total Gross/Weapon System Cost**				**296 / 4,798.584**	**44 / 706.366**	**30 / 336.374**	**34 / 402.219**	**- / -**	**34 / 402.219**

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

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

Justification:
N/A

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
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:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	276	34	30	34	-	34
Gross/Weapon System Cost *($ in Millions)*	4,236.337	417.555	336.374	402.219	-	402.219
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	46.024	-	46.024
Net Procurement (P-1) *($ in Millions)*	4,236.337	417.555	336.374	356.195	-	356.195
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	96.995	44.901	-	44.901
Total Obligation Authority *($ in Millions)*	**4,236.337**	**417.555**	**433.369**	**401.096**	**-**	**401.096**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	15.349	12.281	11.212	11.830	-	11.830

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Flyaway Cost																		
Recurring Cost																		
SM-3 Block IA Procurement(†)	10.800	71	766.765	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SM-3 Block IB Procurement(†)	11.235	276	3,100.810	10.762	34	365.905	9.900	30	297.000	10.626	34	361.299	-	-	-	10.626	34	361.299
Subtotal: Recurring Cost	-	-	*3,867.575*	-	-	*365.905*	-	-	*297.000*	-	-	*361.299*	-	-	-	-	-	*361.299*
Subtotal: Flyaway Cost	**-**	**-**	***3,867.575***	**-**	**-**	***365.905***	**-**	**-**	***297.000***	**-**	**-**	***361.299***	**-**	**-**	**-**	**-**	**-**	***361.299***
Hardware Cost																		
Recurring Cost																		
Canisters Procurement SM-3 Block IA/IB (1)	0.236	289	68.067	0.272	35	9.518	0.253	30	7.576	0.252	34	8.583	-	-	-	0.252	34	8.583
Subtotal: Recurring Cost	-	-	*68.067*	-	-	*9.518*	-	-	*7.576*	-	-	*8.583*	-	-	-	-	-	*8.583*
Subtotal: Hardware Cost	**-**	**-**	***68.067***	**-**	**-**	***9.518***	**-**	**-**	***7.576***	**-**	**-**	***8.583***	**-**	**-**	**-**	**-**	**-**	***8.583***
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	-	-	-	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	3.733	1	3.733	-	-	-	3.733	1	3.733
SM-3 Block IB Investment Spares (5)	4.821	2	9.641	14.826	1	14.826	8.688	1	8.688	15.042	1	15.042	-	-	-	15.042	1	15.042

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)
SM-3 Block IB Obsolescence (6)	25.473	2	50.946	1.328	1	1.328	1.367	1	1.367	1.394	1	1.394	-	-	-	1.394	1	1.394
SM-3 Block IB Production Engineering (7)	29.325	7	205.277	6.598	1	6.598	4.080	1	4.080	4.162	1	4.162	-	-	-	4.162	1	4.162
SM-3 Block IB Service Life Evaluation Program (8)	4.865	2	9.729	2.000	1	2.000	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	4.506	1	4.506	-	-	-	4.506	1	4.506
Subtotal: Support Cost	-	-	***300.695***	-	-	***42.132***	-	-	***31.798***	-	-	***32.337***	-	-	-	-	-	***32.337***
Gross/Weapon System Cost	**15.349**	**276**	**4,236.337**	**12.281**	**34**	**417.555**	**11.212**	**30**	**336.374**	**11.830**	**34**	**402.219**	**-**	**-**	**-**	**11.830**	**34**	**402.219**

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 Security - Support Certification & Accreditation planning and testing in accordance with the Operational Designated Accrediting Authority (ODAA) Process. Conduct certification and accreditation of classified systems and networks under The National Industrial Security Program Operating Manual (NISPOM). Ensure protection of trusted system networks and unclassified contractor networks containing DoD Information.

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

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
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:**

(9) Systems Engineering and Integration - 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.

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB

Cost Elements	OCO	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
SM-3 Block IA Procurement(†)		2009	Raytheon / Tucson, AZ	SS / CPIF	Dahlgren, VA	Feb 2008	Mar 2010	11	8.405	Y		Mar 2007
SM-3 Block IA Procurement(†)		2010	Raytheon / Tucson, AZ	SS / CPIF	Dahlgren, VA	Apr 2008	Aug 2010	24	8.119	Y		Mar 2007
SM-3 Block IA Procurement(†)		2011	Raytheon / Tucson, AZ	SS / CPIF	Dahlgren, VA	Aug 2012	Sep 2013	22	9.525	Y		Nov 2010
SM-3 Block IA Procurement(†)		2012	Raytheon / Tucson, AZ	SS / CPIF	Dahlgren, VA	Aug 2012	Jul 2014	14	9.867	Y		Aug 2011
SM-3 Block IB Procurement(†)		2012	Raytheon / Tucson, AZ	SS / CPIF	Dahlgren, VA	May 2012	Dec 2013	14	13.400	Y		Aug 2011
SM-3 Block IB Procurement(†)		2013	Raytheon / Tucson, AZ	SS / CPIF	Dahlgren, VA	Jun 2013	Jun 2014	33	12.130	Y		Aug 2012
SM-3 Block IB Procurement(†)		2014	Raytheon / Tucson, AZ	SS / CPIF	Dahlgren, VA	Apr 2014	Jan 2016	52	10.236	Y		Aug 2013
SM-3 Block IB Procurement(†)		2015	Raytheon / Tucson, AZ	SS / FPIF	Dahlgren, VA	Mar 2015	Nov 2016	52	11.411	Y		Aug 2014
SM-3 Block IB Procurement(†)		2016	Raytheon / Tucson, AZ	SS / FPIF	Dahlgren, VA	Mar 2016	Oct 2018	46	11.538	Y		Aug 2015
SM-3 Block IB Procurement(†)		2017	Raytheon / Tucson, AZ	SS / FP	Dahlgren, VA	Mar 2017	Oct 2019	35	10.896	Y		Aug 2016
SM-3 Block IB Procurement(†)		2018	Raytheon / Tucson, AZ	SS / FPIF	Dahlgren VA	Apr 2019	Jan 2021	44	11.843	Y		Aug 2017

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2008												Fiscal Year 2009											BALANCE
										Calendar Year 2008													Calendar Year 2009									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2007	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																														
	1	2009	MDA	11	0	11					A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
	1	2010	MDA	24	0	24							A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
	1	2011	MDA	22	0	22																								22
	1	2012	MDA	14	0	14																								14
SM-3 Block IB Procurement																														
	2	2012	MDA	14	0	14																								14
	2	2013	MDA	33	0	33																								33
	2	2014	MDA	52	0	52																								52
	2	2015	MDA	52	0	52																								52
	2	2016	MDA	46	0	46																								46
	2	2017	MDA	35	0	35																								35
	2	2018	MDA	44	0	44																								44
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD	**Item Number / Title [DODIC]:** Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2010												Fiscal Year 2011											BALANCE
							Calendar Year 2010												Calendar Year 2011											
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2009	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																														
	1	2009	MDA	11	0	11	-	-	-	-	-	2	-	-	-	2	2	-	-	-	-	-	-	1	1	3					0
	1	2010	MDA	24	0	24	-	-	-	-	-	-	-	-	-	-	2	2	7	-	-	-	-	-	-	-	-	-	-	-	13
	1	2011	MDA	22	0	22																								22
	1	2012	MDA	14	0	14																								14
SM-3 Block IB Procurement																														
	2	2012	MDA	14	0	14																								14
	2	2013	MDA	33	0	33																								33
	2	2014	MDA	52	0	52																								52
	2	2015	MDA	52	0	52																								52
	2	2016	MDA	46	0	46																								46
	2	2017	MDA	35	0	35																								35
	2	2018	MDA	44	0	44																								44
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2012												Fiscal Year 2013											BALANCE
										Calendar Year 2012													Calendar Year 2013									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																														
	1	2009	MDA	11	11	0																								0
	1	2010	MDA	24	11	13	-	-	-	-	6	-	1	-	-	2	-	3	-	-	-	-	-	-	-	-	-	-	1	0
	1	2011	MDA	22	0	22											A	-	-	-	-	-	-	-	-	-	-	-	-	1	21
	1	2012	MDA	14	0	14											A	-	-	-	-	-	-	-	-	-	-	-	-	-	14
SM-3 Block IB Procurement																														
	2	2012	MDA	14	0	14								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
	2	2013	MDA	33	0	33																					A	-	-	-	33
	2	2014	MDA	52	0	52																									52
	2	2015	MDA	52	0	52																									52
	2	2016	MDA	46	0	46																									46
	2	2017	MDA	35	0	35																									35
	2	2018	MDA	44	0	44																									44
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD	**Item Number / Title [DODIC]:** Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015											BALANCE
							Calendar Year 2014												Calendar Year 2015											
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																														
	1	2009	MDA	11	11	0																								0
	1	2010	MDA	24	24	0																								0
	1	2011	MDA	22	1	21	5	1	2	1	-	3	4	1	1	3														0
	1	2012	MDA	14	0	14	-	-	-	-	-	-	-	-	-	2	1	3	-	-	-	3	4	-	1						0
SM-3 Block IB Procurement																														
	2	2012	MDA	14	0	14	-	-	1	3	2	3	1	2	2																0
	2	2013	MDA	33	0	33	-	-	-	-	-	-	-	-	2	1	-	1	-	6	3	1	-	3	2	4	-	-	-	1	9
	2	2014	MDA	52	0	52							A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52
	2	2015	MDA	52	0	52																		A	-	-	-	-	-	-	52
	2	2016	MDA	46	0	46																									46
	2	2017	MDA	35	0	35																									35
	2	2018	MDA	44	0	44																									44
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017											BALANCE
							Calendar Year 2016												Calendar Year 2017											
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																														
	1	2009	MDA	11	11	0																								0
	1	2010	MDA	24	24	0																								0
	1	2011	MDA	22	22	0																								0
	1	2012	MDA	14	14	0																								0
SM-3 Block IB Procurement																														
	2	2012	MDA	14	14	0																								0
	2	2013	MDA	33	24	9	4	-	5																					0
	2	2014	MDA	52	0	52	-	-	-	2	-	-	-	2	-	-	14	6	-	-	12	5	5	4	2						0
	2	2015	MDA	52	0	52	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	2	6	3	-	5	8	25
	2	2016	MDA	46	0	46						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46
	2	2017	MDA	35	0	35																		A	-	-	-	-	-	-	35
	2	2018	MDA	44	0	44																									44
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD	**Item Number / Title [DODIC]:** Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																															
	1	2009	MDA	11	11	0																									0
	1	2010	MDA	24	24	0																									0
	1	2011	MDA	22	22	0																									0
	1	2012	MDA	14	14	0																									0
SM-3 Block IB Procurement																															
	2	2012	MDA	14	14	0																									0
	2	2013	MDA	33	33	0																									0
	2	2014	MDA	52	52	0																									0
	2	2015	MDA	52	27	25	3	-	9	-	-	-	-	-	-	-	-	-	13												0
	2	2016	MDA	46	0	46	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	3	3	6	5	13	3	9
	2	2017	MDA	35	0	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
	2	2018	MDA	44	0	44																			A -	-	-	-	-	-	44
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD	**Item Number / Title [DODIC]:** Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																															
	1	2009	MDA	11	11	0																									0
	1	2010	MDA	24	24	0																									0
	1	2011	MDA	22	22	0																									0
	1	2012	MDA	14	14	0																									0
SM-3 Block IB Procurement																															
	2	2012	MDA	14	14	0																									0
	2	2013	MDA	33	33	0																									0
	2	2014	MDA	52	52	0																									0
	2	2015	MDA	52	52	0																									0
	2	2016	MDA	46	37	9	9																								0
	2	2017	MDA	35	0	35	4	10	-	1	1	2	2	3	3	3	3	3													0
	2	2018	MDA	44	0	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	4	4	4	4	4	4	12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD09 / AEGIS BMD	Item Number / Title [DODIC]: Aegis BMD SM-3 Block IB

Cost Elements (Units in Each)							Fiscal Year 2022												Fiscal Year 2023												BALANCE
							Calendar Year 2022												Calendar Year 2023													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
SM-3 Block IA Procurement																															
	1	2009	MDA	11	11	0																									0
	1	2010	MDA	24	24	0																									0
	1	2011	MDA	22	22	0																									0
	1	2012	MDA	14	14	0																									0
SM-3 Block IB Procurement																															
	2	2012	MDA	14	14	0																									0
	2	2013	MDA	33	33	0																									0
	2	2014	MDA	52	52	0																									0
	2	2015	MDA	52	52	0																									0
	2	2016	MDA	46	46	0																									0
	2	2017	MDA	35	35	0																									0
	2	2018	MDA	44	32	12	4	4	4																						0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
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

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Raytheon - Tucson, AZ				4	0	30	30	4	0	30	30
2	Raytheon - 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 Analysis: PB 2021 Missile Defense Agency		Date: February 2020
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 IIA
ID Code (A=Service Ready, B=Not Service Ready) : B		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	20	10	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	562.247	288.811	0.000	-	-	-
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	562.247	288.811	0.000	-	-	-
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**562.247**	**288.811**	**0.000**	**-**	**-**	**-**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	28.112	28.881	0.000	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Flyaway Cost																		
Recurring Cost																		
SM-3 Block IIA Procurement	26.849	20	536.974	27.356	10	273.559	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*536.974*	-	-	*273.559*	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway Cost	**-**	**-**	***536.974***	**-**	**-**	***273.559***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Hardware Cost																		
Recurring Cost																		
Canisters Procurement SM-3 Block IIA (1)	1.203	21	25.273	1.263	11	13.898	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*25.273*	-	-	*13.898*	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	**-**	**-**	***25.273***	**-**	**-**	***13.898***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support Cost																		
SM-3 Block IIA Production Engineering (6)	-	-	-	1.354	1	1.354	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	**-**	**-**	**-**	**-**	**-**	***1.354***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**28.112**	**20**	**562.247**	**28.881**	**10**	**288.811**	**0.000**	**-**	**0.000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Remarks:
N/A

Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD
Program Elements for Code B Items: 0604881C, 0603892C	**Other Related Program Elements:** 0603892C
Line Item MDAP/MAIS Code: 362	

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	96.995	44.901	-	44.901	17.493	-	-	-	-	159.389
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	96.995	44.901	-	44.901	17.493	-	-	-	-	159.389
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**96.995**	**44.901**	**-**	**44.901**	**17.493**	**-**	**-**	**-**	**-**	**159.389**

Description:

The Missile Defense Agency intends to award a five year Multi-Year Procurement (MYP) contract for 174 Standard Missile-3 Block IBs in FY 2019 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 with $96.995M requested in FY 2020. This MYP requests $44.900M EOQ AP funding in FY 2021 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 76 FY 2022-FY 2023 All Up Rounds (AUR). EOQ AP funding will enable Raytheon Missile Systems 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.

Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD
Program Elements for Code B Items: 0604881C, 0603892C	**Other Related Program Elements:** 0603892C
Line Item MDAP/MAIS Code: 362	

Exhibits Schedule				Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-10	Aegis BMD SM-3 Block IB			276 / 0.000	34 / 0.000	30 / 96.995	34 / 44.901	- / -	34 / 44.901
P-40	**Total Gross/Weapon System Cost**			**296 / 0.000**	**44 / 0.000**	**30 / 96.995**	**34 / 44.901**	**- / -**	**34 / 44.901**

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

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

Justification:
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 2021 Advance Procurement ($44.900M) funding will procure the following major items for the FY22 through FY23 lots:
1. Kinetic Warhead Guidance Unit (29 month lead time) with estimated savings of 18% across Future 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 production efficiencies including Integrated Dewar Assembly Substrates, Fiber Material, Beryllium Material, Electronic Components, Printed Wire Boards, Housings, Antennas and Shell Material.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD	**P-5 Number / Title:** Aegis BMD SM-3 Block IB

First System (2021) Award Date:	First System (2021) Completion Date:	Interval Between Systems:
January 2018	October 2020	1 Months

Aegis BMD SM-3 Block IB	Production Leadtime *(Months)*	Prior Years *(Each)*	FY 2019 *(Each)*	FY 2020 *(Each)*	FY 2021 *(Each)*
Quantity	30	276	34	30	34

Cost Elements	When Required *(Months)*	Prior Years *($ M)*	FY 2019 *($ M)*	FY 2020 *($ M)*	FY 2021 *($ M)*
EOQ					
Aegis Advanced Procurement	0	-	-	96.995	44.901
Total: EOQ		*0.000*	*0.000*	*96.995*	*44.901*
Total Advance Procurement/Obligation Authority		**0.000**	**0.000**	**96.995**	**44.901**

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD09 / AEGIS BMD	**P-5 Number / Title:** Aegis BMD SM-3 Block IB

Cost Elements	QPA (Each)	FY 2021 Production Leadtime (Months)	FY 2021 Unit Cost ($ M)	FY 2021 Contract Forecast Date	FY 2021 2021 Qty (Each)	FY 2021 For FY	Total Cost Request ($ M)
EOQ							
Aegis Advanced Procurement	0						44.901
Total: EOQ							*44.901*
Total Advance Procurement/Obligation Authority							**44.901**

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 Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD11 / BMDS Sensors

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603881C, 0603884C	Other Related Program Elements: 0603881C, 0603884C
Line Item MDAP/MAIS Code: 362		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	5	-	-	-	-	-	-	-	-	-	-	5
Gross/Weapon System Cost *($ in Millions)*	1,189.537	13.585	10.046	-	-	-	5.593	22.145	17.065	17.009	-	1,274.980
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,189.537	13.585	10.046	-	-	-	5.593	22.145	17.065	17.009	-	1,274.980
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,189.537**	**13.585**	**10.046**	**-**	**-**	**-**	**5.593**	**22.145**	**17.065**	**17.009**	**-**	**1,274.980**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented 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)*	237.907	0.000	0.000	-	-	-	-	-	-	-	-	254.996

Description:

The Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) radar is an integral component of the Missile Defense System (MDS) layered network of sensors. It is easily transported and can be configured to operate as either 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 BMDS 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.

Prior year 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 (CEU), 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 provided updated processing capabilities and added a cybersecurity server in the EEUs in both Terminal and Forward-based modes. The AEU transformers include design improvements to extend the life of this mission critical component.

The secure server procurement updates the existing servers and enhances cyber protection for the fleet.

The Change Notice procurement will procure CEU modernization kits and bring the fleets CEUs into a common, more reliable configuration.

The Digital Receiver/Exciter (REX) redesign kit procurement will upgrade from the current analog REX technology to a modern digital capability increasing reliability and spares availability to the fleet.

The COBRA DANE procurement addressed parts obsolescence concerns. Modern, supportable designs eliminated unsupportable parts. Starting in FY20, the United States Air Force (USAF) is responsible for procurement of obsolete components.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD11 / BMDS Sensors

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603881C, 0603884C	Other Related Program Elements: 0603881C, 0603884C

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	BMDS AN/TPY-2 Radars	P-5a, P-21	A		5 / 1,189.537	- / 13.585	- / 10.046	- / -	- / -	- / -
P-40	**Total Gross/Weapon System Cost**				**5 / 1,189.537**	**- / 13.585**	**- / 10.046**	**- / -**	**- / -**	**- / -**

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

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

Justification:

FY 2021 through FY 2025 base procurement provides:
- Secure servers to upgrade the existing servers and enhance cyber protection for the fleet.
- Change Notice kits to procure CEU modernization kits and bring the fleet's CEUs into a common, more reliable configuration.
- Digital Receiver/Exciter (REX) redesign kits to upgrade the current analog REX technology to a modern digital capability increasing reliability and availability to the fleet.

The decrease from FY20 to FY21 reflects completion of the procurement of AEU Transformers, EEU Mod kits, and RAFU kits.

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD11 / BMDS Sensors	**Item Number / Title [DODIC]:** BMDS AN/TPY-2 Radars
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	5	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	1,189.537	13.585	10.046	-	-	-
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,189.537	13.585	10.046	-	-	-
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**1,189.537**	**13.585**	**10.046**	**-**	**-**	**-**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	237.907	0.000	0.000	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Recurring Cost																		
AN/TPY-2 Secure Servers(†)	-	-	-	1.862	2	3.724	-	-	-	-	-	-	-	-	-	-	-	-
Antenna Equipment Unit (AEU)(†)	130.482	5	652.411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antenna Equipment Unit (AEU) Transformer(†)	1.267	6	7.602	0.727	2	1.453	0.869	1	0.869	-	-	-	-	-	-	-	-	-
COBRA DANE Transmitter Group Replacement(†)	11.000	1	11.000	8.408	1	8.408	-	-	-	-	-	-	-	-	-	-	-	-
Cooling Equipment Unit (CEU)(†)	6.996	5	34.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Spares(†)	9.742	3	29.227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electronic Equipment Unit (EEU)(†)	20.914	5	104.572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electronic Equipment Unit (EEU) Modification Kit(†)	4.850	5	24.248	-	-	-	2.979	2	5.957	-	-	-	-	-	-	-	-	-
Float Antenna Equipment Unit (AEU)(†)	62.019	1	62.019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)
Float Cooling Equipment Unit (CEU)(†)	12.929	2	25.857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Float Electronic Equipment Unit (EEU)(†)	21.491	2	42.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forward-Based Mode Prime Power Units (PPU)(†)	10.985	4	43.940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prime Power Unit (PPUs - 2 each radar system)(†)	14.109	5	70.545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Radar Field Upgrade (RAFU) Kit(†)	1.450	1	1.450	-	-	-	1.610	2	3.220	-	-	-	-	-	-	-	-	-
Transmit/Receive Integrated Microwave Module (TRIMMs)(†)	59.840	1	59.840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*1,170.675*	-	-	*13.585*	-	-	*10.046*	-	-	-	-	-	-	-	-	-
Non Recurring Cost																		
Contractor Certification(†)	2.862	1	2.862	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	*2.862*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	**-**	**-**	***1,173.537***	**-**	**-**	***13.585***	**-**	**-**	***10.046***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Support Cost																		
Program Support*	16.000	1	16.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost	**-**	**-**	***16.000***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Gross/Weapon System Cost	**237.907**	**5**	**1,189.537**	**0.000**	**-**	**13.585**	**0.000**	**-**	**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).

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars

Cost Elements	OCO	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
AN/TPY-2 Secure Servers - Lot(†)		2019	Raytheon / Woburn, MA	C / BA	MDA, Huntsville, AL	Feb 2019	Aug 2020	2	1,862,000.000	N		Jun 2018
Antenna Equipment Unit (AEU)(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	144.290	Y		
Antenna Equipment Unit (AEU)(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	144.090	Y		
Antenna Equipment Unit (AEU) - 1(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	126.400	Y		
Antenna Equipment Unit (AEU) - 2(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	126.400	Y		
Antenna Equipment Unit (AEU) Transformer(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Sep 2015	3	1.775	Y		
Antenna Equipment Unit (AEU) Transformer(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Sep 2016	1	0.410	Y		
Antenna Equipment Unit (AEU) Transformer(†)		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Sep 2017	1	0.919	Y		
Antenna Equipment Unit (AEU) Transformer(†)		2018	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2017	Sep 2018	1	0.947	Y		
Antenna Equipment Unit (AEU) Transformer(†)		2019	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2018	Sep 2019	2	0.978	Y		
Antenna Equipment Unit (AEU) Transformer(†)		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Sep 2020	1	0.869	N		
COBRA DANE Transmitter Group Replacement(†)		2018	Raytheon / Washington, D.C.	C / IDIQ	MDA, Huntsville, AL	Apr 2018	Apr 2019	1	11.000	Y		
COBRA DANE Transmitter Group Replacement(†)		2019	Raytheon / Washington, D.C.	C / IDIQ	MDA, Huntsville, AL	Jun 2019	Jun 2020	1	8.000	Y		
Cooling Equipment Unit (CEU)(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	7.800	Y		
Cooling Equipment Unit (CEU)(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	7.668	Y		
Cooling Equipment Unit (CEU) - 1(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	6.802	Y		
Cooling Equipment Unit (CEU) - 2(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	6.802	Y		
Critical Spares(†)		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	May 2014	May 2015	1	14.361	Y		
Critical Spares(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Dec 2015	1	11.391	Y		
Critical Spares(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Dec 2016	1	3.475	Y		
Electronic Equipment Unit (EEU)(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	23.400	Y		

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Cost Elements	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost ($ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Electronic Equipment Unit (EEU)(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	23.000	Y		
Electronic Equipment Unit (EEU) - 1(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	20.220	Y		
Electronic Equipment Unit (EEU) - 2(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	20.220	Y		
Electronic Equipment Unit (EEU) Modification Kit(†)		2015	Raytheon / Woburn, MA	SS / FFP	M	Dec 2014	Jun 2015	3	2.795	Y		
Electronic Equipment Unit (EEU) Modification Kit(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Mar 2016	Sep 2016	1	3.183	Y		
Electronic Equipment Unit (EEU) Modification Kit(†)		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Jun 2017	1	3.134	Y		
Electronic Equipment Unit (EEU) Modification Kit(†)		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Jun 2020	2	2.979	Y		
Float Antenna Equipment Unit (AEU)(†)		2016	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2015	Jun 2018	1	62.019	Y		
Float Cooling Equipment Unit (CEU)(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	1	7.140	Y		
Float Cooling Equipment Unit (CEU)(†)		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Sep 2014	Dec 2015	1	18.721	Y		
Float Electronic Equipment Unit (EEU)(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	1	20.260	Y		
Float Electronic Equipment Unit (EEU)(†)		2014	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Sep 2014	Sep 2016	1	22.718	Y		
Forward-Based Mode Prime Power Units (PPU)(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Dec 2014	4	10.985	Y		
Prime Power Unit (PPUs - 2 each radar system)(†)		2010	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Jun 2010	Dec 2012	1	15.600	Y		
Prime Power Unit (PPUs - 2 each radar system)(†)		2012	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2011	Jun 2014	2	15.336	Y		
Prime Power Unit (PPUs - 2 each radar system) - 1(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2012	Jun 2015	1	13.895	Y		
Prime Power Unit (PPUs - 2 each radar system) - 2(†)		2013	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2013	Jun 2016	1	13.895	Y		
Radar Field Upgrade (RAFU) Kit(†)		2017	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2016	Jun 2017	1	1.450	Y		
Radar Field Upgrade (RAFU) Kit		2020	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2019	Jun 2020	2	1.610	Y		

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Cost Elements	OCO	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
Transmit/Receive Integrated Microwave Module (TRIMMs)(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Jun 2016	1	59.840	Y		
Contractor Certification(†)		2015	Raytheon / Woburn, MA	SS / FFP	MDA, Huntsville, AL	Dec 2014	Dec 2015	1	2.862	Y		

(†) indicates the presence of a P-21

Remarks:
N/A

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Cost Elements (Units in Each)							Fiscal Year 2010												Fiscal Year 2011												BALANCE
							Calendar Year 2010												Calendar Year 2011													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2009	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
AN/TPY-2 Secure Servers - Lot																															
	1	2019	MDA	2	0	2																									2
Antenna Equipment Unit (AEU)																															
	2	2010	MDA	1	0	1									A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	2	2012	MDA	2	0	2																									2
Antenna Equipment Unit (AEU) - 1																															
	2	2013	MDA	1	0	1																									1
Antenna Equipment Unit (AEU) - 2																															
	2	2013	MDA	1	0	1																									1
Antenna Equipment Unit (AEU) Transformer																															
	3	2015	MDA	3	0	3																									3
	3	2016	MDA	1	0	1																									1
	3	2017	MDA	1	0	1																									1
	3	2018	MDA	1	0	1																									1
	3	2019	MDA	2	0	2																									2
	3	2020	MDA	1	0	1																									1
COBRA DANE Transmitter Group Replacement																															
	4	2018	MDA	1	0	1																									1
	4	2019	MDA	1	0	1																									1
Cooling Equipment Unit (CEU)																															
	5	2010	MDA	1	0	1									A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	5	2012	MDA	2	0	2																									2
Cooling Equipment Unit (CEU) - 1																															
	5	2013	MDA	1	0	1																									1
Cooling Equipment Unit (CEU) - 2																															
	5	2013	MDA	1	0	1																									1
Critical Spares																															
	6	2014	MDA	1	0	1																									1
	6	2015	MDA	1	0	1																									1
	6	2016	MDA	1	0	1																									1
Electronic Equipment Unit (EEU)																															
	7	2010	MDA	1	0	1									A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	7	2012	MDA	2	0	2																									2
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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Cost Elements (Units in Each)							Fiscal Year 2010												Fiscal Year 2011												BALANCE
							Calendar Year 2010												Calendar Year 2011													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2009	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Electronic Equipment Unit (EEU) - 1																															
	7	2013	MDA	1	0	1																									1
Electronic Equipment Unit (EEU) - 2																															
	7	2013	MDA	1	0	1																									1
Electronic Equipment Unit (EEU) Modification Kit																															
	8	2015	MDA	3	0	3																									3
	8	2016	MDA	1	0	1																									1
	8	2017	MDA	1	0	1																									1
	8	2020	MDA	2	0	2																									2
Float Antenna Equipment Unit (AEU)																															
	9	2016	MDA	1	0	1																									1
Float Cooling Equipment Unit (CEU)																															
	10	2012	MDA	1	0	1																									1
	10	2014	MDA	1	0	1																									1
Float Electronic Equipment Unit (EEU)																															
	11	2012	MDA	1	0	1																									1
	11	2014	MDA	1	0	1																									1
Forward-Based Mode Prime Power Units (PPU)																															
	12	2013	MDA	4	0	4																									4
Prime Power Unit (PPUs - 2 each radar system)																															
	13	2010	MDA	1	0	1									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	13	2012	MDA	2	0	2																									2
Prime Power Unit (PPUs - 2 each radar system) - 1																															
	13	2013	MDA	1	0	1																									1
Prime Power Unit (PPUs - 2 each radar system) - 2																															
	13	2013	MDA	1	0	1																									1
Radar Field Upgrade (RAFU) Kit																															
	14	2017	MDA	1	0	1																									1
Transmit/Receive Integrated Microwave Module (TRIMMs)																															
	15	2015	MDA	1	0	1																									1
Contractor Certification																															
	16	2015	MDA	1	0	1																									1

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

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Cost Elements (Units in Each)							Fiscal Year 2012												Fiscal Year 2013											BALANCE
							Calendar Year 2012												Calendar Year 2013											
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
AN/TPY-2 Secure Servers - Lot																														
	1	2019	MDA	2	0	2																								2
Antenna Equipment Unit (AEU)																														
	2	2010	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1									0
	2	2012	MDA	2	0	2			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Antenna Equipment Unit (AEU) - 1																														
	2	2013	MDA	1	0	1															A	-	-	-	-	-	-	-	-	-	1
Antenna Equipment Unit (AEU) - 2																														
	2	2013	MDA	1	0	1																								1
Antenna Equipment Unit (AEU) Transformer																														
	3	2015	MDA	3	0	3																								3
	3	2016	MDA	1	0	1																								1
	3	2017	MDA	1	0	1																								1
	3	2018	MDA	1	0	1																								1
	3	2019	MDA	2	0	2																								2
	3	2020	MDA	1	0	1																								1
COBRA DANE Transmitter Group Replacement																														
	4	2018	MDA	1	0	1																								1
	4	2019	MDA	1	0	1																								1
Cooling Equipment Unit (CEU)																														
	5	2010	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1									0
	5	2012	MDA	2	0	2			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Cooling Equipment Unit (CEU) - 1																														
	5	2013	MDA	1	0	1															A	-	-	-	-	-	-	-	-	-	1
Cooling Equipment Unit (CEU) - 2																														
	5	2013	MDA	1	0	1																								1
Critical Spares																														
	6	2014	MDA	1	0	1																								1
	6	2015	MDA	1	0	1																								1
	6	2016	MDA	1	0	1																								1
Electronic Equipment Unit (EEU)																														
	7	2010	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1									0
	7	2012	MDA	2	0	2			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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Cost Elements (Units in Each)							Fiscal Year 2012												Fiscal Year 2013												BALANCE
							Calendar Year 2012												Calendar Year 2013													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2011	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Electronic Equipment Unit (EEU) - 1																															
	7	2013	MDA	1	0	1															A -	-	-	-	-	-	-	-	-	-	1
Electronic Equipment Unit (EEU) - 2																															
	7	2013	MDA	1	0	1																									1
Electronic Equipment Unit (EEU) Modification Kit																															
	8	2015	MDA	3	0	3																									3
	8	2016	MDA	1	0	1																									1
	8	2017	MDA	1	0	1																									1
	8	2020	MDA	2	0	2																									2
Float Antenna Equipment Unit (AEU)																															
	9	2016	MDA	1	0	1																									1
Float Cooling Equipment Unit (CEU)																															
	10	2012	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	10	2014	MDA	1	0	1																									1
Float Electronic Equipment Unit (EEU)																															
	11	2012	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	11	2014	MDA	1	0	1																									1
Forward-Based Mode Prime Power Units (PPU)																															
	12	2013	MDA	4	0	4															A -	-	-	-	-	-	-	-	-	-	4
Prime Power Unit (PPUs - 2 each radar system)																															
	13	2010	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1										0
	13	2012	MDA	2	0	2			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Prime Power Unit (PPUs - 2 each radar system) - 1																															
	13	2013	MDA	1	0	1															A -	-	-	-	-	-	-	-	-	-	1
Prime Power Unit (PPUs - 2 each radar system) - 2																															
	13	2013	MDA	1	0	1																									1
Radar Field Upgrade (RAFU) Kit																															
	14	2017	MDA	1	0	1																									1
Transmit/Receive Integrated Microwave Module (TRIMMs)																															
	15	2015	MDA	1	0	1																									1
Contractor Certification																															
	16	2015	MDA	1	0	1																									1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015												BALANCE
							Calendar Year 2014												Calendar Year 2015													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
AN/TPY-2 Secure Servers - Lot																															
	1	2019	MDA	2	0	2																									2
Antenna Equipment Unit (AEU)																															
	2	2010	MDA	1	1	0																									0
	2	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	2																0
Antenna Equipment Unit (AEU) - 1																															
	2	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				0
Antenna Equipment Unit (AEU) - 2																															
	2	2013	MDA	1	0	1			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Antenna Equipment Unit (AEU) Transformer																															
	3	2015	MDA	3	0	3															A	-	-	-	-	-	-	-	-	3	0
	3	2016	MDA	1	0	1																									1
	3	2017	MDA	1	0	1																									1
	3	2018	MDA	1	0	1																									1
	3	2019	MDA	2	0	2																									2
	3	2020	MDA	1	0	1																									1
COBRA DANE Transmitter Group Replacement																															
	4	2018	MDA	1	0	1																									1
	4	2019	MDA	1	0	1																									1
Cooling Equipment Unit (CEU)																															
	5	2010	MDA	1	1	0																									0
	5	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	2																0
Cooling Equipment Unit (CEU) - 1																															
	5	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				0
Cooling Equipment Unit (CEU) - 2																															
	5	2013	MDA	1	0	1			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Critical Spares																															
	6	2014	MDA	1	0	1								A	-	-	-	-	-	-	-	-	-	-	-	1					0
	6	2015	MDA	1	0	1															A	-	-	-	-	-	-	-	-	-	1
	6	2016	MDA	1	0	1																									1
Electronic Equipment Unit (EEU)																															
	7	2010	MDA	1	1	0																									0
	7	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	2																0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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Cost Elements (Units in Each)							Fiscal Year 2014												Fiscal Year 2015											BALANCE
							Calendar Year 2014												Calendar Year 2015											
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Electronic Equipment Unit (EEU) - 1																														
	7	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				0
Electronic Equipment Unit (EEU) - 2																														
	7	2013	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Electronic Equipment Unit (EEU) Modification Kit																														
	8	2015	MDA	3	0	3															A -	-	-	-	-	-	3				0
	8	2016	MDA	1	0	1																									1
	8	2017	MDA	1	0	1																									1
	8	2020	MDA	2	0	2																									2
Float Antenna Equipment Unit (AEU)																														
	9	2016	MDA	1	0	1																									1
Float Cooling Equipment Unit (CEU)																														
	10	2012	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
	10	2014	MDA	1	0	1												A -	-	-	-	-	-	-	-	-	-	-	-	-	1
Float Electronic Equipment Unit (EEU)																														
	11	2012	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
	11	2014	MDA	1	0	1												A -	-	-	-	-	-	-	-	-	-	-	-	-	1
Forward-Based Mode Prime Power Units (PPU)																														
	12	2013	MDA	4	0	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3										1
Prime Power Unit (PPUs - 2 each radar system)																														
	13	2010	MDA	1	1	0																									0
	13	2012	MDA	2	0	2	-	-	-	-	-	-	-	-	2																0
Prime Power Unit (PPUs - 2 each radar system) - 1																														
	13	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				0
Prime Power Unit (PPUs - 2 each radar system) - 2																														
	13	2013	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Radar Field Upgrade (RAFU) Kit																														
	14	2017	MDA	1	0	1																									1
Transmit/Receive Integrated Microwave Module (TRIMMs)																														
	15	2015	MDA	1	0	1															A -	-	-	-	-	-	-	-	-	-	1
Contractor Certification																														
	16	2015	MDA	1	0	1															A -	-	-	-	-	-	-	-	-	-	1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
AN/TPY-2 Secure Servers - Lot																															
	1	2019	MDA	2	0	2																									2
Antenna Equipment Unit (AEU)																															
	2	2010	MDA	1	1	0																									0
	2	2012	MDA	2	2	0																									0
Antenna Equipment Unit (AEU) - 1																															
	2	2013	MDA	1	1	0																									0
Antenna Equipment Unit (AEU) - 2																															
	2	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
Antenna Equipment Unit (AEU) Transformer																															
	3	2015	MDA	3	3	0																									0
	3	2016	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	1													0
	3	2017	MDA	1	0	1															A -	-	-	-	-	-	-	-	-	1	0
	3	2018	MDA	1	0	1																									1
	3	2019	MDA	2	0	2																									2
	3	2020	MDA	1	0	1																									1
COBRA DANE Transmitter Group Replacement																															
	4	2018	MDA	1	0	1																									1
	4	2019	MDA	1	0	1																									1
Cooling Equipment Unit (CEU)																															
	5	2010	MDA	1	1	0																									0
	5	2012	MDA	2	2	0																									0
Cooling Equipment Unit (CEU) - 1																															
	5	2013	MDA	1	1	0																									0
Cooling Equipment Unit (CEU) - 2																															
	5	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
Critical Spares																															
	6	2014	MDA	1	1	0																									0
	6	2015	MDA	1	0	1	-	-	1																						0
	6	2016	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	1										0
Electronic Equipment Unit (EEU)																															
	7	2010	MDA	1	1	0																									0
	7	2012	MDA	2	2	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Electronic Equipment Unit (EEU) - 1																															
	7	2013	MDA	1	1	0																									0
Electronic Equipment Unit (EEU) - 2																															
	7	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
Electronic Equipment Unit (EEU) Modification Kit																															
	8	2015	MDA	3	3	0																									0
	8	2016	MDA	1	0	1						A	-	-	-	-	-	1													0
	8	2017	MDA	1	0	1															A	-	-	-	-	-	1				0
	8	2020	MDA	2	0	2																									2
Float Antenna Equipment Unit (AEU)																															
	9	2016	MDA	1	0	1			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Float Cooling Equipment Unit (CEU)																															
	10	2012	MDA	1	1	0																									0
	10	2014	MDA	1	0	1	-	-	1																						0
Float Electronic Equipment Unit (EEU)																															
	11	2012	MDA	1	1	0																									0
	11	2014	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	1													0
Forward-Based Mode Prime Power Units (PPU)																															
	12	2013	MDA	4	3	1																									1
Prime Power Unit (PPUs - 2 each radar system)																															
	13	2010	MDA	1	1	0																									0
	13	2012	MDA	2	2	0																									0
Prime Power Unit (PPUs - 2 each radar system) - 1																															
	13	2013	MDA	1	1	0																									0
Prime Power Unit (PPUs - 2 each radar system) - 2																															
	13	2013	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
Radar Field Upgrade (RAFU) Kit																															
	14	2017	MDA	1	0	1															A	-	-	-	-	-	1				0
Transmit/Receive Integrated Microwave Module (TRIMMs)																															
	15	2015	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
Contractor Certification																															
	16	2015	MDA	1	0	1	-	-	1																						0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
AN/TPY-2 Secure Servers - Lot																															
	1	2019	MDA	2	0	2																	A -	-	-	-	-	-	-	-	2
Antenna Equipment Unit (AEU)																															
	2	2010	MDA	1	1	0																									0
	2	2012	MDA	2	2	0																									0
Antenna Equipment Unit (AEU) - 1																															
	2	2013	MDA	1	1	0																									0
Antenna Equipment Unit (AEU) - 2																															
	2	2013	MDA	1	1	0																									0
Antenna Equipment Unit (AEU) Transformer																															
	3	2015	MDA	3	3	0																									0
	3	2016	MDA	1	1	0																									0
	3	2017	MDA	1	1	0																									0
	3	2018	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	1													0
	3	2019	MDA	2	0	2															A -	-	-	-	-	-	-	-	-	1	1
	3	2020	MDA	1	0	1																									1
COBRA DANE Transmitter Group Replacement																															
	4	2018	MDA	1	0	1							A -	-	-	-	-	-	-	-	-	-	-	-	1						0
	4	2019	MDA	1	0	1																					A -	-	-	-	1
Cooling Equipment Unit (CEU)																															
	5	2010	MDA	1	1	0																									0
	5	2012	MDA	2	2	0																									0
Cooling Equipment Unit (CEU) - 1																															
	5	2013	MDA	1	1	0																									0
Cooling Equipment Unit (CEU) - 2																															
	5	2013	MDA	1	1	0																									0
Critical Spares																															
	6	2014	MDA	1	1	0																									0
	6	2015	MDA	1	1	0																									0
	6	2016	MDA	1	1	0																									0
Electronic Equipment Unit (EEU)																															
	7	2010	MDA	1	1	0																									0
	7	2012	MDA	2	2	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Electronic Equipment Unit (EEU) - 1																															
	7	2013	MDA	1	1	0																									0
Electronic Equipment Unit (EEU) - 2																															
	7	2013	MDA	1	1	0																									0
Electronic Equipment Unit (EEU) Modification Kit																															
	8	2015	MDA	3	3	0																									0
	8	2016	MDA	1	1	0																									0
	8	2017	MDA	1	1	0																									0
	8	2020	MDA	2	0	2																									2
Float Antenna Equipment Unit (AEU)																															
	9	2016	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
Float Cooling Equipment Unit (CEU)																															
	10	2012	MDA	1	1	0																									0
	10	2014	MDA	1	1	0																									0
Float Electronic Equipment Unit (EEU)																															
	11	2012	MDA	1	1	0																									0
	11	2014	MDA	1	1	0																									0
Forward-Based Mode Prime Power Units (PPU)																															
	12	2013	MDA	4	3	1																									1
Prime Power Unit (PPUs - 2 each radar system)																															
	13	2010	MDA	1	1	0																									0
	13	2012	MDA	2	2	0																									0
Prime Power Unit (PPUs - 2 each radar system) - 1																															
	13	2013	MDA	1	1	0																									0
Prime Power Unit (PPUs - 2 each radar system) - 2																															
	13	2013	MDA	1	1	0																									0
Radar Field Upgrade (RAFU) Kit																															
	14	2017	MDA	1	1	0																									0
Transmit/Receive Integrated Microwave Module (TRIMMs)																															
	15	2015	MDA	1	1	0																									0
Contractor Certification																															
	16	2015	MDA	1	1	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
AN/TPY-2 Secure Servers - Lot																															
	1	2019	MDA	2	0	2	-	-	-	-	-	-	-	-	-	-	2														0
Antenna Equipment Unit (AEU)																															
	2	2010	MDA	1	1	0																									0
	2	2012	MDA	2	2	0																									0
Antenna Equipment Unit (AEU) - 1																															
	2	2013	MDA	1	1	0																									0
Antenna Equipment Unit (AEU) - 2																															
	2	2013	MDA	1	1	0																									0
Antenna Equipment Unit (AEU) Transformer																															
	3	2015	MDA	3	3	0																									0
	3	2016	MDA	1	1	0																									0
	3	2017	MDA	1	1	0																									0
	3	2018	MDA	1	1	0																									0
	3	2019	MDA	2	1	1																									1
	3	2020	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	1													0
COBRA DANE Transmitter Group Replacement																															
	4	2018	MDA	1	1	0																									0
	4	2019	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
Cooling Equipment Unit (CEU)																															
	5	2010	MDA	1	1	0																									0
	5	2012	MDA	2	2	0																									0
Cooling Equipment Unit (CEU) - 1																															
	5	2013	MDA	1	1	0																									0
Cooling Equipment Unit (CEU) - 2																															
	5	2013	MDA	1	1	0																									0
Critical Spares																															
	6	2014	MDA	1	1	0																									0
	6	2015	MDA	1	1	0																									0
	6	2016	MDA	1	1	0																									0
Electronic Equipment Unit (EEU)																															
	7	2010	MDA	1	1	0																									0
	7	2012	MDA	2	2	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD11 / BMDS Sensors	Item Number / Title [DODIC]: BMDS AN/TPY-2 Radars

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Electronic Equipment Unit (EEU) - 1																															
	7	2013	MDA	1	1	0																									0
Electronic Equipment Unit (EEU) - 2																															
	7	2013	MDA	1	1	0																									0
Electronic Equipment Unit (EEU) Modification Kit																															
	8	2015	MDA	3	3	0																									0
	8	2016	MDA	1	1	0																									0
	8	2017	MDA	1	1	0																									0
	8	2020	MDA	2	0	2			A -	-	-	-	-	-	2																0
Float Antenna Equipment Unit (AEU)																															
	9	2016	MDA	1	1	0																									0
Float Cooling Equipment Unit (CEU)																															
	10	2012	MDA	1	1	0																									0
	10	2014	MDA	1	1	0																									0
Float Electronic Equipment Unit (EEU)																															
	11	2012	MDA	1	1	0																									0
	11	2014	MDA	1	1	0																									0
Forward-Based Mode Prime Power Units (PPU)																															
	12	2013	MDA	4	3	1																									1
Prime Power Unit (PPUs - 2 each radar system)																															
	13	2010	MDA	1	1	0																									0
	13	2012	MDA	2	2	0																									0
Prime Power Unit (PPUs - 2 each radar system) - 1																															
	13	2013	MDA	1	1	0																									0
Prime Power Unit (PPUs - 2 each radar system) - 2																															
	13	2013	MDA	1	1	0																									0
Radar Field Upgrade (RAFU) Kit																															
	14	2017	MDA	1	1	0																									0
Transmit/Receive Integrated Microwave Module (TRIMMs)																															
	15	2015	MDA	1	1	0																									0
Contractor Certification																															
	16	2015	MDA	1	1	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD11 / BMDS Sensors	**Item Number / Title [DODIC]:** BMDS AN/TPY-2 Radars

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	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				9	0	6	6	0	0	0	0
2	Raytheon - Woburn, MA	1	1	4	4	3	30	33	0	0	0	0
3	Raytheon - Woburn, MA	1	4	4	2	3	9	12	2	3	9	12
4	Raytheon - Washington, D.C.	1	1	1	3	2	12	14	3	2	12	14
5	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
6	Raytheon - Woburn, MA	1	1	4	4	2	12	14	4	2	12	14
7	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
8	Raytheon - Woburn, MA	1	2	4	2	3	6	9	2	3	6	9
9	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
10	Raytheon - Woburn, MA	1	1	4	4	2	15	17	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	24	26	0	0	0	0
13	Raytheon - Woburn, MA	1	1	4	4	2	30	32	0	0	0	0
14	Raytheon - Woburn, MA	1	2	4	2	3	6	9	2	3	6	9
15	Raytheon - Woburn, MA	1	1	4	4	2	18	20	4	2	18	20
16	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 Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD14 / SM-3 Block IIA

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C, 0604878C
Line Item MDAP/MAIS Code: 362		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	0	-	7	6	-	6	3	3	51	50	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	238.000	218.322	-	218.322	131.869	127.027	1,180.110	1,108.168	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	238.000	218.322	-	218.322	131.869	127.027	1,180.110	1,108.168	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**238.000**	**218.322**	**-**	**218.322**	**131.869**	**127.027**	**1,180.110**	**1,108.168**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	0.000	0.000	34.000	36.387	-	36.387	43.956	42.342	23.139	22.163	Continuing	Continuing

Description:

In accordance with the Consolidated Appropriations Act 2020, SM-3 Block IIA was transferred to MD14 from MD09 in FY 2020 and beyond. FY 2018 and FY 2019 costs are contained in MD09.

Net Procurement and Gross Weapon System costs includes all hardware and support costs including canisters, production engineering, obsolescence and system engineering and integration and are detailed in separate P5s.

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.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD14 / SM-3 Block IIA

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0604881C, 0603892C	Other Related Program Elements: 0603892C, 0604878C

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Seabased BMD SM-3 Blk IIA		A		0 / 0.000	- / 0.000	7 / 238.000	6 / 218.322	- / -	6 / 218.322
P-40	**Total Gross/Weapon System Cost**				**0 / 0.000**	**- / 0.000**	**7 / 238.000**	**6 / 218.322**	**- / -**	**6 / 218.322**

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

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

Justification:
N/A

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD14 / SM-3 Block IIA	**Item Number / Title [DODIC]:** Seabased BMD SM-3 Blk IIA
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	0	-	7	6	-	6
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	238.000	218.322	-	218.322
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	238.000	218.322	-	218.322
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**238.000**	**218.322**	**-**	**218.322**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	0.000	0.000	34.000	36.387	-	36.387

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Flyaway Cost																		
Recurring Cost																		
SBMD SM-3 Block IIA	-	-	-	-	-	-	27.348	7	191.436	26.227	6	157.360	-	-	-	26.227	6	157.360
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	*191.436*	-	-	*157.360*	-	-	-	-	-	*157.360*
Subtotal: Flyaway Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***191.436***	**-**	**-**	***157.360***	**-**	**-**	**-**	**-**	**-**	***157.360***
Hardware Cost																		
Recurring Cost																		
Canisters Procurement SM-3 Block IIA (1)	-	-	-	-	-	-	1.054	8	8.433	1.054	7	7.378	-	-	-	1.054	7	7.378
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	*8.433*	-	-	*7.378*	-	-	-	-	-	*7.378*
Subtotal: Hardware Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***8.433***	**-**	**-**	***7.378***	**-**	**-**	**-**	**-**	**-**	***7.378***
Support Cost																		
SM-3 BLK IIA Investment Spares (2)	-	-	-	-	-	-	9.630	1	9.630	21.762	1	21.762	-	-	-	21.762	1	21.762
SM-3 BLK IIA Service Life Evaluation Programs (3)	-	-	-	-	-	-	20.645	1	20.645	20.146	1	20.146	-	-	-	20.146	1	20.146
SM-3 Block IIA Obsolescence (5)	-	-	-	-	-	-	4.860	1	4.860	5.001	1	5.001	-	-	-	5.001	1	5.001
SM-3 Block IIA Production Engineering (6)	-	-	-	-	-	-	2.996	1	2.996	6.675	1	6.675	-	-	-	6.675	1	6.675
Subtotal: Support Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***38.131***	**-**	**-**	***53.584***	**-**	**-**	**-**	**-**	**-**	***53.584***

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD14 / SM-3 Block IIA	**Item Number / Title [DODIC]:** Seabased BMD SM-3 Blk IIA
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)
Gross/Weapon System Cost	0.000	0	0.000	0.000	-	0.000	34.000	7	238.000	36.387	6	218.322	-	-	-	36.387	6	218.322

Remarks:
N/A

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD26 / Arrow 3 Upper Tier System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603913C
Line Item MDAP/MAIS Code: 362		

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	3	1	1	1	-	1	1	1	1	1	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	255.000	80.000	55.000	77.000	-	77.000	62.000	90.000	90.000	90.000	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	255.000	80.000	55.000	77.000	-	77.000	62.000	90.000	90.000	90.000	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**255.000**	**80.000**	**55.000**	**77.000**	**-**	**77.000**	**62.000**	**90.000**	**90.000**	**90.000**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	85.000	80.000	55.000	77.000	-	77.000	62.000	90.000	90.000	90.000	Continuing	Continuing

Description:

For procurement of Arrow Weapon System (AWS) 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 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD26 / Arrow 3 Upper Tier System

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

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Israeli Program Procurement		A		3 / 255.000	1 / 80.000	1 / 55.000	1 / 77.000	- / -	1 / 77.000
P-40	**Total Gross/Weapon System Cost**				**3 / 255.000**	**1 / 80.000**	**1 / 55.000**	**1 / 77.000**	**- / -**	**1 / 77.000**

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

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

Justification:
For procurement of AWS components.

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD26 / Arrow 3 Upper Tier System	**Item Number / Title [DODIC]:** Israeli Program Procurement
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	3	1	1	1	-	1
Gross/Weapon System Cost *($ in Millions)*	255.000	80.000	55.000	77.000	-	77.000
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	255.000	80.000	55.000	77.000	-	77.000
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**255.000**	**80.000**	**55.000**	**77.000**	**-**	**77.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	85.000	80.000	55.000	77.000	-	77.000

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Recurring Cost																		
Israeli Programs	85.000	3	255.000	80.000	1	80.000	55.000	1	55.000	77.000	1	77.000	-	-	-	77.000	1	77.000
Subtotal: Recurring Cost	-	-	*255.000*	-	-	*80.000*	-	-	*55.000*	-	-	*77.000*	-	-	-	-	-	*77.000*
Subtotal: Hardware Cost	**-**	**-**	***255.000***	**-**	**-**	***80.000***	**-**	**-**	***55.000***	**-**	**-**	***77.000***	**-**	**-**	**-**	**-**	**-**	***77.000***
Gross/Weapon System Cost	**85.000**	**3**	**255.000**	**80.000**	**1**	**80.000**	**55.000**	**1**	**55.000**	**77.000**	**1**	**77.000**	**-**	**-**	**-**	**77.000**	**1**	**77.000**

Remarks:
For procurement of AWS components. Quantities are classified. The unit quantity of one is used as a proxy in each fiscal year with funding.

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Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))

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

Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	3	1	1	1	-	1	1	1	1	1	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	420.000	50.000	50.000	50.000	-	50.000	30.000	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)*	420.000	50.000	50.000	50.000	-	50.000	30.000	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)*	**420.000**	**50.000**	**50.000**	**50.000**	**-**	**50.000**	**30.000**	**30.000**	**30.000**	**30.000**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	140.000	50.000	50.000	50.000	-	50.000	30.000	30.000	30.000	30.000	Continuing	Continuing

Description:

Previously named David's Sling. FY 2018 name change to Short Range Ballistic Missile Defense (SRBMD).

-Provides funding to the Government of Israel to procure DSWS/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 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD34 / Short Range Ballistic Missile Defense (SRBMD)(David's Sling Weapon System (DSWS))

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

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	1 / David's Sling Weapon System [1]		A		3 / 420.000	1 / 50.000	1 / 50.000	1 / 50.000	- / -	1 / 50.000
P-40	**Total Gross/Weapon System Cost**				**3 / 420.000**	**1 / 50.000**	**1 / 50.000**	**1 / 50.000**	**- / -**	**1 / 50.000**

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

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

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

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD34 / Short Range Ballistic Missile Defense (SRBMD) (David's Sling Weapon System (DSWS))	**Item Number / Title [DODIC]:** 1 / David's Sling Weapon System [1]
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	3	1	1	1	-	1
Gross/Weapon System Cost *($ in Millions)*	420.000	50.000	50.000	50.000	-	50.000
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	420.000	50.000	50.000	50.000	-	50.000
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**420.000**	**50.000**	**50.000**	**50.000**	**-**	**50.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	140.000	50.000	50.000	50.000	-	50.000

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Recurring Cost																		
David's Sling Weapon System	140.000	3	420.000	50.000	1	50.000	50.000	1	50.000	50.000	1	50.000	-	-	-	50.000	1	50.000
Subtotal: Recurring Cost	-	-	*420.000*	-	-	*50.000*	-	-	*50.000*	-	-	*50.000*	-	-	-	-	-	*50.000*
Subtotal: Hardware Cost	**-**	**-**	***420.000***	**-**	**-**	***50.000***	**-**	**-**	***50.000***	**-**	**-**	***50.000***	**-**	**-**	**-**	**-**	**-**	***50.000***
Gross/Weapon System Cost	**140.000**	**3**	**420.000**	**50.000**	**1**	**50.000**	**50.000**	**1**	**50.000**	**50.000**	**1**	**50.000**	**-**	**-**	**-**	**50.000**	**1**	**50.000**

Remarks:
DSWS/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 Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD73 / Aegis Ashore Phase III

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0604881C, 0604880C, 0603892C	Other Related Program Elements: 0604880C

Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	1	-	-	-	-	-	1	-	-	-	-	2
Gross/Weapon System Cost *($ in Millions)*	499.820	15.000	25.659	39.114	-	39.114	26.248	3.891	2.400	0.980	-	613.112
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	499.820	15.000	25.659	39.114	-	39.114	26.248	3.891	2.400	0.980	-	613.112
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**499.820**	**15.000**	**25.659**	**39.114**	**-**	**39.114**	**26.248**	**3.891**	**2.400**	**0.980**	**-**	**613.112**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	499.820	0.000	0.000	-	-	-	26.248	-	-	-	-	306.556

Description:

Note: The increase from FY 2020 to FY 2021 accounts for costs to meet European Phased Adaptive Approach (EPAA) Phase III, which includes configuration and test validations. Increased funding request attributable to Poland Military Construction delays which pushed EPAA Phase III Technical Capability Declaration (TCD) from FY 2021 to FY 2022.

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 Missile Defense (MD) 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 an 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 (FY 2022) 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.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD73 / Aegis Ashore Phase III	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** 0604881C, 0604880C, 0603892C	**Other Related Program Elements:** 0604880C
Line Item MDAP/MAIS Code: 362		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Aegis Ashore Poland, Equipment and Deckhouse		A		1 / 499.820	- / 15.000	- / 25.659	- / 39.114	- / -	- / 39.114
P-40	**Total Gross/Weapon System Cost**				**1 / 499.820**	**- / 15.000**	**- / 25.659**	**- / 39.114**	**- / -**	**- / 39.114**

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

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

Justification:
The Aegis Ashore to be installed in Poland contains a Deckhouse structure and Weapon System comprised of a 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 in FY 2022, 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 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
FY 2021 Continue installation of the combat system and combat structure adaptation, integration and installation
FY 2022 Complete weapon system commissioning prior to Chief of Naval Operations acceptance and EUCOM acceptance

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD73 / Aegis Ashore Phase III	**Item Number / Title [DODIC]:** Aegis Ashore Poland, Equipment and Deckhouse
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	1	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	499.820	15.000	25.659	39.114	-	39.114
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	499.820	15.000	25.659	39.114	-	39.114
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**499.820**	**15.000**	**25.659**	**39.114**	**-**	**39.114**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	499.820	0.000	0.000	-	-	-

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Flyaway Cost																		
Recurring Cost																		
Aegis Ashore Poland, Equipment and Deckhouse	499.820	1	499.820	-	-	15.000	-	-	25.659	-	-	39.114	-	-	-	-	-	39.114
Subtotal: Recurring Cost	-	-	*499.820*	-	-	*15.000*	-	-	*25.659*	-	-	*39.114*	-	-	-	-	-	*39.114*
Subtotal: Flyaway Cost	**-**	**-**	***499.820***	**-**	**-**	***15.000***	**-**	**-**	***25.659***	**-**	**-**	***39.114***	**-**	**-**	**-**	**-**	**-**	***39.114***
Gross/Weapon System Cost	**499.820**	**1**	**499.820**	**0.000**	**-**	**15.000**	**0.000**	**-**	**25.659**	**-**	**-**	**39.114**	**-**	**-**	**-**	**-**	**-**	**39.114**

Remarks:
N/A

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Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD83 / Iron Dome

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

Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	7	1	1	1	-	1	1	1	1	1	Continuing	Continuing
Gross/Weapon System Cost *($ in Millions)*	1,403.630	70.000	95.000	73.000	-	73.000	108.000	80.000	80.000	80.000	Continuing	Continuing
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,403.630	70.000	95.000	73.000	-	73.000	108.000	80.000	80.000	80.000	Continuing	Continuing
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**1,403.630**	**70.000**	**95.000**	**73.000**	**-**	**73.000**	**108.000**	**80.000**	**80.000**	**80.000**	**Continuing**	**Continuing**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	200.519	70.000	95.000	73.000	-	73.000	108.000	80.000	80.000	80.000	Continuing	Continuing

Description:

Provides funding to the Government of Israel to procure Iron Dome 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 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD83 / Iron Dome
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0603913C
Line Item MDAP/MAIS Code: 362		

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Iron Dome		A		7 / 1,403.630	1 / 70.000	1 / 95.000	1 / 73.000	- / -	1 / 73.000
P-40	**Total Gross/Weapon System Cost**				**7 / 1,403.630**	**1 / 70.000**	**1 / 95.000**	**1 / 73.000**	**- / -**	**1 / 73.000**

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

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

Justification:
Procurement of additional Iron Dome components.

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD83 / Iron Dome	**Item Number / Title [DODIC]:** Iron Dome
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	7	1	1	1	-	1
Gross/Weapon System Cost *($ in Millions)*	1,403.630	70.000	95.000	73.000	-	73.000
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	1,403.630	70.000	95.000	73.000	-	73.000
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**1,403.630**	**70.000**	**95.000**	**73.000**	**-**	**73.000**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	200.519	70.000	95.000	73.000	-	73.000

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Recurring Cost																		
Iron Dome	200.519	7	1,403.630	70.000	1	70.000	95.000	1	95.000	73.000	1	73.000	-	-	-	73.000	1	73.000
Subtotal: Recurring Cost	-	-	*1,403.630*	-	-	*70.000*	-	-	*95.000*	-	-	*73.000*	-	-	-	-	-	*73.000*
Subtotal: Hardware Cost	**-**	**-**	***1,403.630***	**-**	**-**	***70.000***	**-**	**-**	***95.000***	**-**	**-**	***73.000***	**-**	**-**	**-**	**-**	**-**	***73.000***
Gross/Weapon System Cost	**200.519**	**7**	**1,403.630**	**70.000**	**1**	**70.000**	**95.000**	**1**	**95.000**	**73.000**	**1**	**73.000**	**-**	**-**	**-**	**73.000**	**1**	**73.000**

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

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Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD90 / Aegis BMD Hardware and Software

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603892C

Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Procurement Quantity *(Units in Each)*	55	26	36	49	-	49	45	48	49	48	-	356
Gross/Weapon System Cost *($ in Millions)*	345.468	91.181	124.986	104.241	-	104.241	109.245	103.208	125.968	124.464	-	1,128.761
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	345.468	91.181	124.986	104.241	-	104.241	109.245	103.208	125.968	124.464	-	1,128.761
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**345.468**	**91.181**	**124.986**	**104.241**	**-**	**104.241**	**109.245**	**103.208**	**125.968**	**124.464**	**-**	**1,128.761**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	0.000	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	6.281	3.507	3.472	2.127	-	2.127	2.428	2.150	2.571	2.593	-	3.171

Description:

Note:
FY 2021 Base procurement budget request provides the procurement, installation, fielding and deployment of integrated Aegis Ballistic Missile Defense (BMD) combat system to operational ships and sites for homeland and regional defense. 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 in support of early detection of BMD threats to the homeland. 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.

Exhibit P-40, Budget Line Item Justification: PB 2021 Missile Defense Agency	Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency	**P-1 Line Item Number / Title:** MD90 / Aegis BMD Hardware and Software

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603892C

Line Item MDAP/MAIS Code: 362

Exhibits Schedule					Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Aegis BMD Shipsets	P-5a, P-21	A		55 / 345.468	26 / 91.181	36 / 124.986	49 / 104.241	- / -	49 / 104.241
P-40	**Total Gross/Weapon System Cost**				**55 / 345.468**	**26 / 91.181**	**36 / 124.986**	**49 / 104.241**	**- / -**	**49 / 104.241**

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

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

Justification:
FY 2021 Base procurement dollars in the amount of $104.241 million supports the continued procurement and deployment of Aegis BMD capabilities to operational ships and sites. A shipset consists of the procurement of cabinets, cabling, equipment, and other material required to support a single shipboard installation of the appropriate BMD baseline.

Upgrading the 3.6 and 4.0 shipsets to 4.x adds capability and capacity in support of the European Phased Adaptive Approach EPAA Phase II requirements.

Upgrading the 4.x to BL 5.4.0 (BMD 4.1.2) delivers a single Aegis Weapon System maximizing a merger of BMD 4.1 and B/L 5.3 computer programs within the current BMD 4 system architecture. Additional capabilities delivered include Anti-Air Warfare (AAW) improvements, SM-6 Dual I Extended Range AAW/Anti-Surface Warfare (ASUW), interoperability improvements, and updated BMD threat adaptation data.

Upgrading 4.x to BL 5.4.1 (BMD 4.2) is a joint effort with the U.S. Navy that refurbishes existing ship AN/SPY-1 radar arrays with the installation of antenna Low Noise Amplifiers (LNAs). Updates planned for 21 Flight I/II Destroyers (DDG) with increased capability and growth to maintain relevance through End of Service Life. Capabilities delivered include discrimination improvements, increased threat set, integration of SM-3 Block IB Modernization, and other warfighter improvements. BMD 4.2 plans to procure an Array Set in FY 2020 to support rotatable pool for radar refurbishment. Navy Certification of BL 5.4.1 (BMD 4.2) is planned to occur in FY 2023.

Upgrading the 5.x shipsets adds capability and capacity in support of achieving the European Phased Adaptive Approach EPAA Phase III requirements. Hardware and software updates to 5.x shipsets provides warfighter improvements implemented through Combat System upgrades to meet emerging threats.

The procurement and fielding of new BMD components impacted by Diminishing Manufacturing Sources (DMS) will allow for the continued production of 5.x and BL 5.4.0 (BMD 4.1.2) in support of EPAA Phase II and III requirements.

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD90 / Aegis BMD Hardware and Software	**Item Number / Title [DODIC]:** Aegis BMD Shipsets
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Procurement Quantity *(Units in Each)*	55	26	36	49	-	49
Gross/Weapon System Cost *($ in Millions)*	345.468	91.181	124.986	104.241	-	104.241
Less PY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Net Procurement (P-1) *($ in Millions)*	345.468	91.181	124.986	104.241	-	104.241
Plus CY Advance Procurement *($ in Millions)*	0.000	0.000	0.000	-	-	-
Total Obligation Authority *($ in Millions)*	**345.468**	**91.181**	**124.986**	**104.241**	**-**	**104.241**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	6.281	3.507	3.472	2.127	-	2.127

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Hardware Cost																		
Recurring Cost																		
Aegis BL 5.4.0 (BMD 4.1.2) Installs(†)	-	-	-	0.650	3	1.951	0.633	5	3.163	0.647	5	3.235	-	-	-	0.647	5	3.235
Aegis BL 5.4.0 (BMD 4.1.2) Procurement(†)	-	-	-	0.167	10	1.665	0.324	8	2.592	-	-	-	-	-	-	-	-	-
Aegis BL 5.4.1 (BMD 4.2) Hardware Procurement(†)	-	-	-	-	-	-	51.996	1	51.996	3.719	3	11.158	-	-	-	3.719	3	11.158
Aegis BL 9.C1 (5.0 CU) Installs	1.400	1	1.400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BL 9.C2 (BMD 5.1) BackFit Installs(†)	1.073	11	11.808	0.762	3	2.286	1.163	2	2.326	1.615	2	3.230	-	-	-	1.615	2	3.230
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement(†)	2.194	17	37.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aegis BL 9.C2 (BMD 5.1) Inline Installs(†)	1.756	4	7.022	0.636	2	1.272	2.190	3	6.570	2.134	4	8.534	-	-	-	2.134	4	8.534
Aegis BL 9.C2 (BMD 5.1) Inline Procurements(†)	4.122	6	24.733	3.738	2	7.476	3.871	3	11.613	6.862	3	20.587	-	-	-	6.862	3	20.587
Aegis BMD 3.6 to 4.X Hardware Procurements(†)	13.519	10	135.193	15.010	1	15.010	-	-	-	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets
ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:	

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

Cost Elements	Prior Years			FY 2019			FY 2020			FY 2021 Base			FY 2021 OCO			FY 2021 Total		
	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)
Aegis BMD 3.6 to 4.X Installs(†)	17.831	7	124.815	18.299	3	54.898	24.482	1	24.482	25.119	1	25.119	-	-	-	25.119	1	25.119
Aegis BMD DMS Procurement	-	-	-	-	-	-	-	-	-	0.326	12	3.909	-	-	-	0.326	12	3.909
Aegis BMD TI-12H Upgrade Installs(†)	-	-	-	-	-	-	-	-	-	2.211	4	8.844	-	-	-	2.211	4	8.844
Aegis BMD TI-12H Upgrade Procurement(†)	-	-	-	3.312	2	6.623	3.420	5	17.099	3.671	3	11.014	-	-	-	3.671	3	11.014
Subtotal: Recurring Cost	-	-	*342.268*	-	-	*91.181*	-	-	*119.841*	-	-	*95.630*	-	-	-	-	-	*95.630*
Subtotal: Hardware Cost	**-**	**-**	***342.268***	**-**	**-**	***91.181***	**-**	**-**	***119.841***	**-**	**-**	***95.630***	**-**	**-**	**-**	**-**	**-**	***95.630***
Software Cost																		
Recurring Cost																		
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs(†)	-	-	-	-	-	-	0.643	8	5.145	0.718	12	8.611	-	-	-	0.718	12	8.611
Aegis BMD 4.0 to 4.X Software Installs	0.533	6	3.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	*3.200*	-	-	-	-	-	*5.145*	-	-	*8.611*	-	-	-	-	-	*8.611*
Subtotal: Software Cost	**-**	**-**	***3.200***	**-**	**-**	**-**	**-**	**-**	***5.145***	**-**	**-**	***8.611***	**-**	**-**	**-**	**-**	**-**	***8.611***
Gross/Weapon System Cost	**6.281**	**55**	**345.468**	**3.507**	**26**	**91.181**	**3.472**	**36**	**124.986**	**2.127**	**49**	**104.241**	**-**	**-**	**-**	**2.127**	**49**	**104.241**

Remarks:

All Shipset procurements and installs are in alignment with Navy Ship Fielding Plan as of 21 MAY 2019.

Aegis BL 5.4.0 (BMD 4.1.2) delivers a single Aegis Weapon System, maximizing a merger of Aegis BMD 4.1 with U.S. Navy (USN) Aegis Baseline 5.3.11 computer programs along with capturing selected BL 7 and BL 9 capabilities within the current BMD 4 system architecture. Planned update for 21 FLT I/II DDG's and 2 Cruisers (CG).

Aegis BL 5.4.1 (BMD 4.2) AN/SPY-1 upgrade is a joint effort with the U.S. Navy that provides refurbishment of existing ship AN/SPY-1 radar arrays with the addition of Low Noise Amplifiers (LNAs). Planned update for 21 FLT I/II DDG's with increased capability and growth to maintain relevance through End of Service Life. Weapon System Updates include MIL-SPEC UYK-43, COTS BMD Signal Processor, and COTS adjunct processor updates.

The Aegis BL 9.C2 (BMD 5.1) Backfit upgrade installs consists of an Aegis Weapon System, Command/Control/Communication, Kill Assessment (KAS) and Vertical Launching System hardware and associated computer program necessary to upgrade an in-service Aegis BL 9.C1 (BMD 5.0CU) capable ship to BL 9.C2 (BMD 5.1). 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.

Exhibit P-5, Cost Analysis: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD90 / Aegis BMD Hardware and Software	**Item Number / Title [DODIC]:** Aegis BMD Shipsets
ID Code (A=Service Ready, B=Not Service Ready) : A		**MDAP/MAIS Code:**

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 BMD 3.6 to 4.x install includes a hardware and software upgrade suite that adds capability and capacity in support of all future baseline upgrade deliveries.

The Aegis BMD Production DMS Procurements allows for the continued production of BMD 5.x and BL 5.4 (BMD 4.1) combat system hardware impacted by production hardware obsolescence, and the installation of this hardware on in-service BMD 5.x and BL 5.4 (BMD 4.1) ships to reduce configuration variance and sustainment complexity.

The Aegis BL 9.C2 (BMD 5.1) TI-12H Upgrade Procurement consists of hardware and associated computer program necessary to upgrade existing in-service Aegis BL 9.C2 (BMD 5.1) TI-12 ships to a TI-16 compatible weapon system configuration.

The Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs deliver incremental Common Source Library (CSL) capability upgrades to the BMD 5.1 ships and sites providing increased performance against emergent threats.

(†) indicates the presence of a P-5a

Exhibit P-5a, Procurement History and Planning: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements	OCO	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
Aegis BL 5.4.0 (BMD 4.1.2) Installs		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Jun 2020	Sep 2020	3	0.650	N		Jun 2019
Aegis BL 5.4.0 (BMD 4.1.2) Installs(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington DC	Jun 2020	Sep 2020	5	0.160	Y		Jun 2019
Aegis BL 5.4.0 (BMD 4.1.2) Procurement(†)		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Apr 2019	Mar 2020	10	0.167	Y		Jan 2018
Aegis BL 5.4.0 (BMD 4.1.2) Procurement(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Apr 2020	Sep 2020	8	0.200	Y		Jan 2019
Aegis BL 5.4.1 (BMD 4.2) Hardware Procurement(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Dec 2019	Dec 2020	1	51.996	Y		Mar 2019
Aegis BL 9.C2 (BMD 5.1) BackFit Installs(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Jun 2017	Oct 2018	3	1.134	Y		Aug 2016
Aegis BL 9.C2 (BMD 5.1) BackFit Installs(†)		2018	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Nov 2017	Jun 2018	8	0.710	Y		Feb 2017
Aegis BL 9.C2 (BMD 5.1) BackFit Installs(†)		2019	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Jun 2019	Apr 2020	3	0.762	Y		Jun 2018
Aegis BL 9.C2 (BMD 5.1) BackFit Installs(†)		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 Installs(†)		2021	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Jun 2020	Dec 2020	2	1.615	Y		Dec 2019
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement		2016	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Nov 2015	Jan 2016	11	2.194	N		Sep 2015
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement(†)		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(†)		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(†)		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(†)		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Jan 2019	Jan 2020	2	0.636	Y		Jul 2018
Aegis BL 9.C2 (BMD 5.1) Inline Installs(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Jan 2020	Jan 2021	3	0.460	Y		Jul 2019
Aegis BL 9.C2 (BMD 5.1) Inline Procurements		2016	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	May 2016	Nov 2017	2	4.122	N		Jul 2015
Aegis BL 9.C2 (BMD 5.1) Inline Procurements(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	May 2017	Nov 2018	1	3.913	Y		Jul 2016

Exhibit P-5a, Procurement History and Planning: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements	OCO	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
Aegis BL 9.C2 (BMD 5.1) Inline Procurements(†)		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(†)		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2019	Aug 2020	2	3.738	Y		Jun 2018
Aegis BL 9.C2 (BMD 5.1) Inline Procurements(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2020	Aug 2021	3	3.871	Y		Jun 2019
Aegis BMD 3.6 to 4.X Hardware Procurements		2016	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2016	Aug 2017	6	13.519	N		Jul 2015
Aegis BMD 3.6 to 4.X Hardware Procurements(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2017	Aug 2018	1	12.100	Y		Jul 2016
Aegis BMD 3.6 to 4.X Hardware Procurements(†)		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(†)		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2019	Aug 2020	1	15.010	Y		Jun 2018
Aegis BMD 3.6 to 4.X Installs		2016	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Washington, D.C.	Jan 2016	May 2017	1	17.831	N		May 2015
Aegis BMD 3.6 to 4.X Installs(†)		2017	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Washington, D.C.	Jan 2017	Jun 2018	1	9.100	Y		May 2016
Aegis BMD 3.6 to 4.X Installs(†)		2018	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Washington, D.C.	Feb 2018	Feb 2019	5	7.100	Y		Aug 2016
Aegis BMD 3.6 to 4.X Installs(†)		2019	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Washington, D.C.	Nov 2017	Sep 2019	3	18.299	Y		Nov 2017
Aegis BMD 3.6 to 4.X Installs(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Washington, D.C.	Nov 2019	Jul 2021	1	7.500	Y		Nov 2018
Aegis BMD TI-12H Upgrade Installs(†)		2021	Lockheed Martin / Moorestown, N.J.	SS / FFP	Washington, D.C.	Oct 2020	Nov 2020	4	2.145	Y		Feb 2020
Aegis BMD TI-12H Upgrade Procurement		2019	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Dec 2019	Aug 2020	2	3.311	N		Jul 2019
Aegis BMD TI-12H Upgrade Procurement(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / FPIF	Washington, D.C.	Feb 2020	Oct 2020	5	3.419	Y		Jun 2019
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs(†)		2020	Lockheed Martin / Moorestown, N.J.	SS / CPIF	Dahlgren, VA	Apr 2020	Sep 2020	8	0.160	Y		Apr 2019
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs(†)		2021	Lockheed Martin / Moorestown, N.J.	SS / FFP	Washington, D.C.	Nov 2020	Aug 2021	12	0.718	Y		Feb 2020

(†) indicates the presence of a P-21

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Aegis BL 5.4.0 (BMD 4.1.2) Installs																															
	1	2020	MDA	5	0	5																									5
Aegis BL 5.4.0 (BMD 4.1.2) Procurement																															
	2	2019	MDA	10	0	10																									10
	3	2020	MDA	8	0	8																									8
Aegis BL 5.4.1 (BMD 4.2) Hardware Procurement																															
	4	2020	MDA	1	0	1																									1
Aegis BL 9.C2 (BMD 5.1) BackFit Installs																															
	5	2017	MDA	3	0	3																					A -	-	-	-	3
	5	2018	MDA	8	0	8																									8
	5	2019	MDA	3	0	3																									3
	5	2020	MDA	2	0	2																									2
	5	2021	MDA	2	0	2																									2
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement																															
	6	2017	MDA	6	0	6																	A -	-	-	-	-	-	-	-	6
Aegis BL 9.C2 (BMD 5.1) Inline Installs																															
	7	2017	MDA	1	0	1																	A -	-	-	-	-	-	-	-	1
	7	2018	MDA	3	0	3																									3
	7	2019	MDA	2	0	2																									2
	7	2020	MDA	3	0	3																									3
Aegis BL 9.C2 (BMD 5.1) Inline Procurements																															
	8	2017	MDA	1	0	1																				A -	-	-	-	-	1
	8	2018	MDA	3	0	3																									3
	8	2019	MDA	2	0	2																									2
	8	2020	MDA	3	0	3																									3
Aegis BMD 3.6 to 4.X Hardware Procurements																															
	9	2017	MDA	1	0	1																	A -	-	-	-	-	-	-	-	1
	9	2018	MDA	3	0	3																									3
	9	2019	MDA	1	0	1																									1
Aegis BMD 3.6 to 4.X Installs																															
	10	2017	MDA	1	0	1																A -	-	-	-	-	-	-	-	-	1
	10	2018	MDA	5	0	5																									5
	10	2019	MDA	3	0	3																									3
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements (Units in Each)							Fiscal Year 2016												Fiscal Year 2017												BALANCE
							Calendar Year 2016												Calendar Year 2017													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	10	2020	MDA	1	0	1																									1
Aegis BMD TI-12H Upgrade Installs																															
	11	2021	MDA	4	0	4																									4
Aegis BMD TI-12H Upgrade Procurement																															
	12	2020	MDA	5	0	5																									5
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs																															
	13	2020	MDA	8	0	8																									8
	13	2021	MDA	12	0	12																									12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Aegis BL 5.4.0 (BMD 4.1.2) Installs																															
	1	2020	MDA	5	0	5																									5
Aegis BL 5.4.0 (BMD 4.1.2) Procurement																															
	2	2019	MDA	10	0	10																			A -	-	-	-	-	-	10
	3	2020	MDA	8	0	8																									8
Aegis BL 5.4.1 (BMD 4.2) Hardware Procurement																															
	4	2020	MDA	1	0	1																									1
Aegis BL 9.C2 (BMD 5.1) BackFit Installs																															
	5	2017	MDA	3	0	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1			0
	5	2018	MDA	8	0	8		A -	-	-	-	-	-	-	1	-	-	4	-	-	-	1	-	-	1	-	1				0
	5	2019	MDA	3	0	3																					A -	-	-	-	3
	5	2020	MDA	2	0	2																									2
	5	2021	MDA	2	0	2																									2
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement																															
	6	2017	MDA	6	0	6	-	-	-	-	-	-	-	-	-	-	6														0
Aegis BL 9.C2 (BMD 5.1) Inline Installs																															
	7	2017	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	1														0
	7	2018	MDA	3	0	3				A -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1				0
	7	2019	MDA	2	0	2																A -	-	-	-	-	-	-	-	-	2
	7	2020	MDA	3	0	3																									3
Aegis BL 9.C2 (BMD 5.1) Inline Procurements																															
	8	2017	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1											0
	8	2018	MDA	3	0	3					A -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2
	8	2019	MDA	2	0	2																	A -	-	-	-	-	-	-	-	2
	8	2020	MDA	3	0	3																									3
Aegis BMD 3.6 to 4.X Hardware Procurements																															
	9	2017	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	1														0
	9	2018	MDA	3	0	3					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2
	9	2019	MDA	1	0	1																	A -	-	-	-	-	-	-	-	1
Aegis BMD 3.6 to 4.X Installs																															
	10	2017	MDA	1	0	1	-	-	-	-	-	-	-	-	1																0
	10	2018	MDA	5	0	5					A -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	1	-	1
	10	2019	MDA	3	0	3		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements (Units in Each)							Fiscal Year 2018												Fiscal Year 2019												BALANCE
							Calendar Year 2018												Calendar Year 2019													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	10	2020	MDA	1	0	1																									1
Aegis BMD TI-12H Upgrade Installs																															
	11	2021	MDA	4	0	4																									4
Aegis BMD TI-12H Upgrade Procurement																															
	12	2020	MDA	5	0	5																									5
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs																															
	13	2020	MDA	8	0	8																									8
	13	2021	MDA	12	0	12																									12
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021												BALANCE
							Calendar Year 2020												Calendar Year 2021													
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Aegis BL 5.4.0 (BMD 4.1.2) Installs																															
	1	2020	MDA	5	0	5									A -	-	-	1	-	-	-	-	-	-	-	-	4				0
Aegis BL 5.4.0 (BMD 4.1.2) Procurement																															
	2	2019	MDA	10	0	10	-	-	-	-	-	10																			0
	3	2020	MDA	8	0	8							A -	-	-	-	-	8														0
Aegis BL 5.4.1 (BMD 4.2) Hardware Procurement																															
	4	2020	MDA	1	0	1			A -	-	-	-	-	-	-	-	-	-	-	-	1											0
Aegis BL 9.C2 (BMD 5.1) BackFit Installs																															
	5	2017	MDA	3	3	0																									0
	5	2018	MDA	8	8	0																									0
	5	2019	MDA	3	0	3	-	-	-	-	-	-	3																		0
	5	2020	MDA	2	0	2					A -	-	-	-	1	-	-	-	-	1												0
	5	2021	MDA	2	0	2									A -	-	-	-	-	-	2											0
Aegis BL 9.C2 (BMD 5.1) BackFit Procurement																															
	6	2017	MDA	6	6	0																									0
Aegis BL 9.C2 (BMD 5.1) Inline Installs																															
	7	2017	MDA	1	1	0																									0
	7	2018	MDA	3	3	0																									0
	7	2019	MDA	2	0	2	-	-	-	2																					0
	7	2020	MDA	3	0	3				A -	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	0
Aegis BL 9.C2 (BMD 5.1) Inline Procurements																															
	8	2017	MDA	1	1	0																									0
	8	2018	MDA	3	1	2	-	-	-	1	-	-	1																		0
	8	2019	MDA	2	0	2	-	-	-	-	-	-	-	-	-	-	2														0
	8	2020	MDA	3	0	3					A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3		0
Aegis BMD 3.6 to 4.X Hardware Procurements																															
	9	2017	MDA	1	1	0																									0
	9	2018	MDA	3	1	2	-	2																							0
	9	2019	MDA	1	0	1	-	-	-	-	-	-	-	-	-	-	1														0
Aegis BMD 3.6 to 4.X Installs																															
	10	2017	MDA	1	1	0																									0
	10	2018	MDA	5	4	1	-	1																							0
	10	2019	MDA	3	3	0																									0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	P-1 Line Item Number / Title: MD90 / Aegis BMD Hardware and Software	Item Number / Title [DODIC]: Aegis BMD Shipsets

Cost Elements (Units in Each)							Fiscal Year 2020												Fiscal Year 2021											BALANCE
							Calendar Year 2020												Calendar Year 2021											
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	10	2020	MDA	1	0	1		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		0
Aegis BMD TI-12H Upgrade Installs																														
	11	2021	MDA	4	0	4													A -	2	-	-	-	-	-	2				0
Aegis BMD TI-12H Upgrade Procurement																														
	12	2020	MDA	5	0	5					A -	-	-	-	-	-	-	-	5											0
Aegis BL 9.B/C2 (BMD 5.1) Software Upgrade Installs																														
	13	2020	MDA	8	0	8							A -	-	-	-	-	8												0
	13	2021	MDA	12	0	12														A -	-	-	-	-	-	-	-	-	12		0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

Exhibit P-21, Production Schedule: PB 2021 Missile Defense Agency		Date: February 2020
Appropriation / Budget Activity / Budget Sub Activity: 0300D / 01 / 17	**P-1 Line Item Number / Title:** MD90 / Aegis BMD Hardware and Software	**Item Number / Title [DODIC]:** Aegis BMD Shipsets

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
					Initial				Reorder			
		MSR For 2021	1-8-5 For 2021	MAX For 2021	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Lockheed Martin - Moorestown, N.J.	1	1	6	0	0	0	0	0	0	0	0
2	Lockheed Martin - Moorestown, N.J.	1	1	10	0	0	0	0	0	0	0	0
3	Lockheed Martin - Moorestown, N.J.	1	1	8	0	0	0	0	0	0	0	0
4	Lockheed Martin - Moorestown, N.J.	1	1	6	0	0	0	0	0	0	0	0
5	Lockheed Martin - Moorestown, N.J.	1	1	8	0	0	0	0	0	0	0	0
6	Lockheed Martin - Moorestown, N.J.	1	1	11	0	0	0	0	0	0	0	0
7	Lockheed Martin - Moorestown, N.J.	1	1	4	0	0	0	0	0	0	0	0
8	Lockheed Martin - Moorestown, N.J.	1	1	4	0	0	0	0	0	0	0	0
9	Lockheed Martin - Moorestown, N.J.	1	1	1	0	0	0	0	0	0	0	0
10	Lockheed Martin - Moorestown, N.J.	1	1	5	0	0	0	0	0	0	0	0
11	Lockheed Martin - Moorestown, N.J.	1	1	4	0	0	0	0	0	0	0	0
12	Lockheed Martin - Moorestown, N.J.	1	1	5	0	0	0	0	0	0	0	0
13	Lockheed Martin - Moorestown, N.J.	1	1	14	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).