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

November 2017



Missile Defense Agency

Defense-Wide Justification Book Volume 2b of 2

Procurement, Defense-Wide
(Includes MILCON)

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Missile Defense Agency • Budget Amendment FY 2018 • Procurement

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Introduction & Explanation of Contents

The Department of Defense FY 2018 Missile Defeat and Defense Enhancements (MDDE) Budget Amendment Submission RDT&E (Includes Procurement, and MILCON), Defense-wide Volume 2, Missile Defense Agency (MDA) justification materials consists of two books titled Volume 2a and 2b. Justification documents are provided in the books as listed below.

Volume 2a

- R-1 Comptroller Exhibit
- MDA FY 2018 Missile Defeat and Defense Enhancements (MDDE) Budget Amendment Overview

Volume 2b

- P-1 Comptroller Exhibit
- MDA MILCON Exhibits
- MDA Procurement Exhibits

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

03 Nov 2017

Appropriation -----	FY 2016 Base + OCO -----	FY 2017 Base Enactment -----	FY 2017 OCO Enactment -----	FY 2017 Total (Base + OCO) -----
Procurement, Defense-Wide	1,489,203	1,424,399	151,000	1,575,399
Total Defense-Wide	1,489,203	1,424,399	151,000	1,575,399

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

03 Nov 2017

Appropriation -----	FY 2018 Base Request -----	FY 2018 June Amendment Base -----	FY 2018 Amendment Emergency -----
Procurement, Defense-Wide	1,178,364		1,239,140
Total Defense-Wide	1,178,364		1,239,140

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

03 Nov 2017

Appropriation -----	FY 2018 OCO Request -----	FY 2018 Amendment OCO -----	FY 2018 Total OCO -----	FY 2018 Grand Total -----
Procurement, Defense-Wide				2,417,504
Total Defense-Wide				2,417,504

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

03 Nov 2017

Organization: Procurement, Defense-Wide -----	FY 2016 Base + OCO -----	FY 2017 Base Enactment -----	FY 2017 OCO Enactment -----	FY 2017 Total (Base + OCO) -----
Missile Defense Agency, MDA	1,489,203	1,424,399	151,000	1,575,399
Total	1,489,203	1,424,399	151,000	1,575,399

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Defense-Wide
FY 2018 President's Budget Amendment
Exhibit P-1 FY 2018 President's Budget Amendment
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(Dollars in Thousands)

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Organization: Procurement, Defense-Wide -----	FY 2018 Base Request -----	FY 2018 June Amendment Base -----	FY 2018 Amendment Emergency -----
Missile Defense Agency, MDA	1,178,364		1,239,140
Total	1,178,364		1,239,140

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03 Nov 2017

Organization: Procurement, Defense-Wide -----	FY 2018 OCO Request -----	FY 2018 Amendment OCO -----	FY 2018 Total OCO -----	FY 2018 Grand Total -----
Missile Defense Agency, MDA				2,417,504
Total				2,417,504

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FY 2018 President's Budget Amendment
Exhibit P-1 FY 2018 President's Budget Amendment
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(Dollars in Thousands)

03 Nov 2017

Appropriation: Procurement, Defense-Wide

Budget Activity -----	FY 2016 Base + OCO -----	FY 2017 Base Enactment -----	FY 2017 OCO Enactment -----	FY 2017 Total (Base + OCO) -----
01. Major Equipment	1,489,203	1,424,399	151,000	1,575,399
Total Procurement, Defense-Wide	1,489,203	1,424,399	151,000	1,575,399

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Budget Activity -----	FY 2018 Base Request -----	FY 2018 June Amendment Base -----	FY 2018 Amendment Emergency -----
01. Major Equipment	1,178,364		1,239,140
Total Procurement, Defense-Wide	1,178,364		1,239,140

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

03 Nov 2017

Appropriation: Procurement, Defense-Wide

Budget Activity -----	FY 2018 OCO Request -----	FY 2018 Amendment OCO -----	FY 2018 Total OCO -----	FY 2018 Grand Total -----
01. Major Equipment				2,417,504
Total Procurement, Defense-Wide				2,417,504

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

03 Nov 2017

Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity	FY 2016 Base + OCO Cost	FY 2017 Base Enactment Quantity	FY 2017 Base Enactment Cost	FY 2017 OCO Enactment Quantity	FY 2017 OCO Enactment Cost	FY 2017 Total (Base + OCO) Quantity	FY 2017 Total (Base + OCO) Cost	S e c
Budget Activity 01: Major Equipment											
Major Equipment, Missile Defense Agency											
28	THAAD	B	34	447,971	24	415,504	12	151,000	36	566,504	U
29	Ground Based Midcourse	A									U
30	Ground Based Midcourse Advance Procurement (CY) C (FY 2018 for FY 2019) (M)										U
31	Aegis BMD	B	49	586,711	35	513,801			35	513,801	U
32	Aegis BMD Advance Procurement (CY) C (FY 2018 for FY 2019) (M)										U
33	BMDS AN/TPY-2 Radars	A		78,634		5,503				5,503	U
34	Arrow Upper Tier	B		15,000							U
35	Arrow Upper Tier	A				120,000				120,000	U
36	Short Range Ballistic Missile Defense (SRBMD)	A		150,000		150,000				150,000	U
37	Aegis Ashore Phase III	B		30,587		57,493				57,493	U
38	Iron Dome	A	1	55,000		62,000				62,000	U
39	Aegis BMD Hardware and Software	A	26	125,300	6	50,098			6	50,098	U
40	Improved Homeland Defense (HLD) Interceptors	A				50,000				50,000	U
Total Major Equipment				1,489,203		1,424,399		151,000		1,575,399	
Total Procurement, Defense-Wide				1,489,203		1,424,399		151,000		1,575,399	

P-118AMD: FY 2018 President's Budget Amendment (Published Version), as of November 3, 2017 at 10:38:15

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

03 Nov 2017

Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2018 Base Request		FY 2018 June Amendment Base		FY 2018 Amendment Emergency		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Major Equipment									
Major Equipment, Missile Defense Agency									
28	THAAD	B	34	451,592			50	509,140	U
29	Ground Based Midcourse	A						180,000	U
30	Ground Based Midcourse Advance Procurement (CY) C (FY 2018 for FY 2019) (M)						20	88,000	U
							20	(88,000)	
31	Aegis BMD	B	34	425,018			16	451,000	U
32	Aegis BMD Advance Procurement (CY) C (FY 2018 for FY 2019) (M)			38,738 (38,738)					U
33	BMDS AN/TPY-2 Radars	A		947				11,000	U
34	Arrow Upper Tier	B							U
35	Arrow Upper Tier	A							U
36	Short Range Ballistic Missile Defense (SRBMD)	A							U
37	Aegis Ashore Phase III	B		59,739					U
38	Iron Dome	A	1	42,000					U
39	Aegis BMD Hardware and Software	A	21	160,330					U
40	Improved Homeland Defense (HLD) Interceptors	A							U
Total Major Equipment				1,178,364				1,239,140	
Total Procurement, Defense-Wide				1,178,364				1,239,140	

P-118AMD: FY 2018 President's Budget Amendment (Published Version), as of November 3, 2017 at 10:38:15

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Defense-Wide
 FY 2018 President's Budget Amendment
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 (Dollars in Thousands)

03 Nov 2017

Appropriation: 0300D Procurement, Defense-Wide

Line No	Item Nomenclature	Ident Code	FY 2018 OCO Request		FY 2018 Amendment OCO		FY 2018 Total OCO		FY 2018 Grand Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Major Equipment											
Major Equipment, Missile Defense Agency											
28	THAAD	B							84	960,732	U
29	Ground Based Midcourse	A								180,000	U
30	Ground Based Midcourse Advance Procurement (CY) C (FY 2018 for FY 2019) (M)								20	88,000	U
									20	(88,000)	
31	Aegis BMD	B							50	876,018	U
32	Aegis BMD Advance Procurement (CY) C (FY 2018 for FY 2019) (M)									38,738	U
										(38,738)	
33	BMDS AN/TPY-2 Radars	A								11,947	U
34	Arrow Upper Tier	B									U
35	Arrow Upper Tier	A									U
36	Short Range Ballistic Missile Defense (SRBMD)	A									U
37	Aegis Ashore Phase III	B								59,739	U
38	Iron Dome	A							1	42,000	U
39	Aegis BMD Hardware and Software	A							21	160,330	U
40	Improved Homeland Defense (HLD) Interceptors	A									U
Total Major Equipment										2,417,504	
Total Procurement, Defense-Wide										2,417,504	

P-118AMD: FY 2018 President's Budget Amendment (Published Version), as of November 3, 2017 at 10:38:15

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30	01	17	MD08	GMD, Advance Procurement.....	Volume 2b - 5
31	01	17	MD09	AEGIS BMD.....	Volume 2b - 7
33	01	17	MD11	BMDS AN/TPY-2 Radars.....	Volume 2b - 9

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BMDs AN/TPY-2 Radars	MD11	33	01	17.....	Volume 2b - 9
GMD	MD08	29	01	17.....	Volume 2b - 3
GMD, Advance Procurement	MD08	30	01	17.....	Volume 2b - 5
THAAD	MD07	28	01	17.....	Volume 2b - 1

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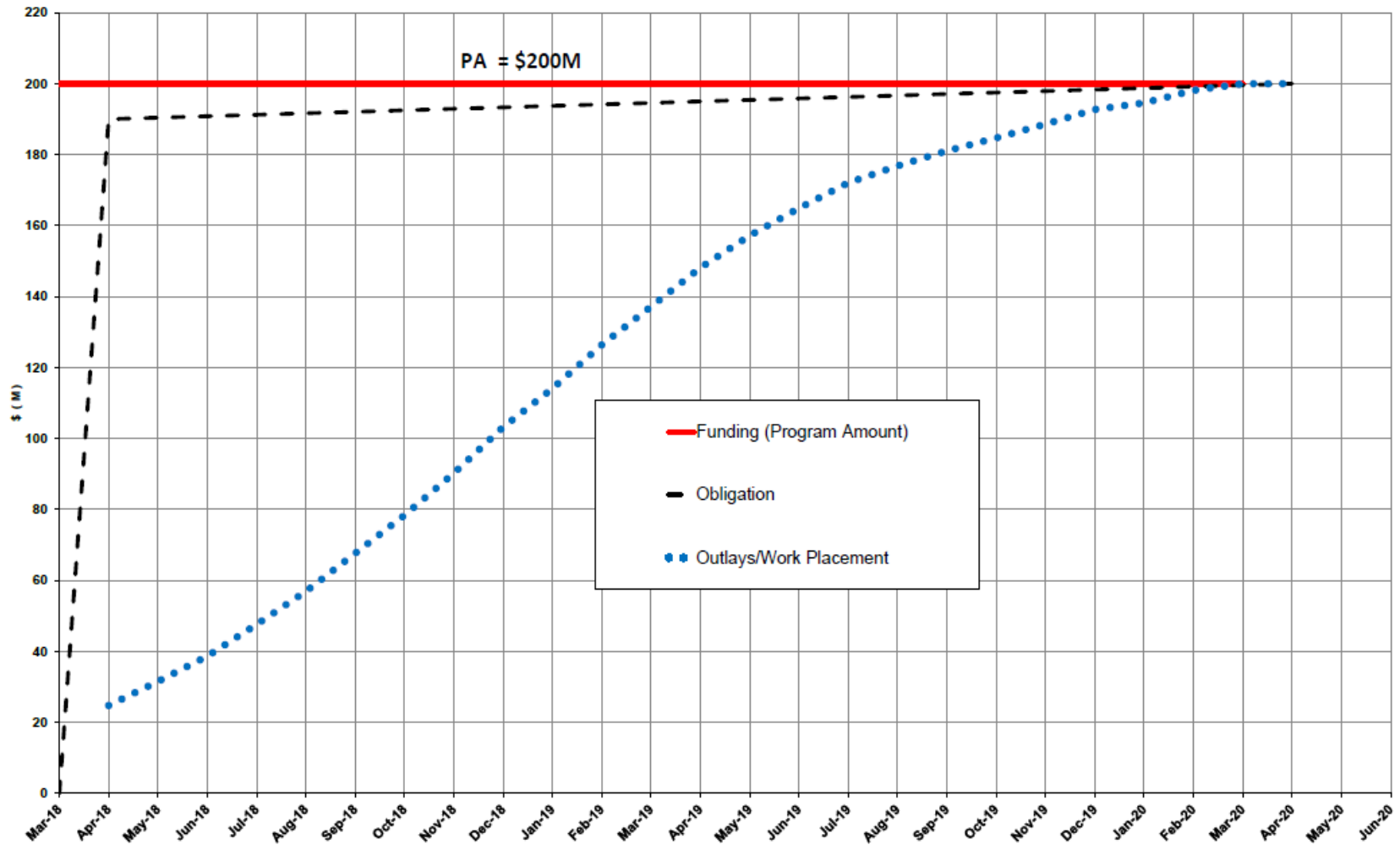
1. COMPONENT MDA		FY 2018 MILITARY CONSTRUCTION PROJECT DATA		2. DATE November 2017	
3. INSTALLATION AND LOCATION Fort Greely, Alaska			4. PROJECT TITLE Missile Field #4		
5. PROGRAM ELEMENT 0603882C	6. CATEGORY CODE 14951	7. PROJECT NUMBER MDA 674	8. PROJECT COST (\$000) 200,000		
9. COST ESTIMATES					
ITEM	U/M (M/E)	QUANTITY	UNIT COST	COST (\$000)	
PRIMARY FACILITIES					
Silo Infrastructure (14951)	EA	20	2,634,700	120,723 (52,694)	
Mechanical-Electrical Building(89120)	SF	11,300	1,553	(17,548)	
Special Construction Features	LS	-	-	(32,953)	
Underground Utility Corridors (89340)	LF	3,500	4,333	(15,166)	
Security Features	LS	-	-	(2,362)	
SUPPORTING FACILITIES					
Electrical/Comms Services	LS	-	-	58,286 (32,964)	
Civil/Mechanical Services	LS	-	-	(13,575)	
Site Preparations	LS	-	-	(5,403)	
Site Improvements	LS	-	-	(6,344)	
SUBTOTAL					
CONTINGENCY (5.0%)				179,009	
TOTAL CONTRACT COST				8,951	
SIOH (6.5%)				187,960	
TOTAL REQUEST				12,217	
TOTAL REQUEST ROUNDED				200,177	
INSTALLED EQPT-OTHER APPROPRIATIONS				200,000	
<p>10. DESCRIPTION OF PROPOSED CONSTRUCTION: Construct an additional 20-silo missile field in support of the Ballistic Missile Defense System (BMDS) at Fort Greely, AK. Missile Field #4 includes Silo infrastructure and a Mechanical-Electrical Building (MEB) with High Altitude Electromagnetic Pulse (HEMP), Electromagnetic Interference (EMI), and blast protection.</p> <p>Silo infrastructure will include constructing each silo shaft, installing the silo liner, preparing the opening for the Silo Interface Vault (SIV), SIV concrete pad, and site utilities to the SIV.</p> <p>The MEB construction utilizes reinforced concrete walls and ceiling covered with metal panels, and a standing seam metal roof. Lightning protection and equipment grounding systems will be included. The MEB foundation includes features to meet site-specific ground motion requirements, seismic requirements, and blast protection requirements.</p> <p>The special construction features will include redundant HEMP protected mechanical and electrical equipment supporting the launch control components. MEB HEMP and EMI protection include steel plates and custom-built specialty power filters. The HEMP and EMI protection is required to be tested and certified. The MEB blast protection consists of 20-inch thick reinforced concrete walls and ceiling, blast rated doors and valves, and foundation substructure anchoring.</p> <p>Underground utility corridors will be provided to connect the new MEB with existing missile field infrastructure and to the new silo infrastructure.</p> <p>Security features will include fencing and electronic security system infrastructure.</p> <p>Electrical and Communications services will include HEMP protected electrical distribution, cybersecurity, and information management systems.</p>					

1. COMPONENT MDA	FY 2018 MILITARY CONSTRUCTION PROJECT DATA	2. DATE November 2017
3. INSTALLATION AND LOCATION Fort Greely, Alaska		
4. PROJECT TITLE Missile Field #4		5. PROJECT NUMBER MDA 674
12. SUPPLEMENTAL DATA:		
A. Estimated Execution Data		
(1) Acquisition Strategy:		Design-Bid-Build
(2) Design Data		
(a) Design or Request for Proposal (RFP) Started:		Oct 2017
(b) Percent Complete As Of January 2018		35%
(c) Design or RFP Complete:		Feb 2018
(d) Total Design Cost (\$000):		14,000
(e) Energy Study and/or Life Cycle Analysis performed		No
(f) Standard or definitive design used?		Yes
(3) Construction Data:		
(a) Contract Award		Mar 2018
(b) Construction Start		Apr 2018
(c) Construction Completion		Sep 2021
B. Equipment associated with this project which will be provided from other appropriations:		
Equipment Nomenclature	Procuring Appropriation	FY Appropriated or Requested
		Cost \$(000)
GBI Launch Support Equipment	RDT&E	FY17 9,000
Site Activation, Support, and Equipment	RDT&E	FY18 15,000
GBI Launch Support Equipment	RDT&E	FY18 36,000
Site Activation, Support, and Equipment	RDT&E	FY19 14,000
GBI Launch Support Equipment	RDT&E	FY19 58,500
Security Equipment/ESS	RDT&E	FY19 5,500
Site Activation, Support, and Equipment	RDT&E	FY20 13,000
GBI Launch Support Equipment	RDT&E	FY20 164,000
Site Activation, Support, and Equipment	RDT&E	FY21 14,000
GBI Launch Support Equipment	RDT&E	FY21 81,000
		Total RDT&E: 410,000
Procure, Install, and Test SIV/Silos	Procurement	FY17 47,000
Procure, Install, and Test SIV/Silos	Procurement	FY18 212,000
Procure, Install, and Test SIV/Silos	Procurement	FY19 212,000
		Total Procurement: 471,000
		Total: 881,000
Site activation activities include a temporary man camp to support lodging and dining plus necessary security controls, as well as integration of facilities and weapon systems such as enhanced systems commissioning.		



US Army Corps
of Engineers.

Missile Defense Agency (MDA) Missile Field #4, Alaska (MDA Project #674)
Work In Progress (WIP) Curve , date 13 October 2017



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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency										Date: November 2017		
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency							P-1 Line Item Number / Title: MD07 / THAAD					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: 0603881C, 0604876C				Other Related Program Elements: 0604876C, 0603881C				
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	193	36	36	84	-	84	32	30	28	21	43	503
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3,150.140	447.971	566.504	960.732	-	960.732	440.883	405.015	420.829	429.463	731.422	7,552.959
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3,150.140	447.971	566.504	960.732	-	960.732	440.883	405.015	420.829	429.463	731.422	7,552.959
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3,150.140	447.971	566.504	960.732	-	960.732	440.883	405.015	420.829	429.463	731.422	7,552.959
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	11.127	10.100	12.052	10.783	-	10.783	12.029	12.029	12.771	12.771	14.731	11.873
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	16.322	12.444	15.736	11.437	-	11.437	13.778	13.501	15.030	20.451	17.010	15.016
<p>Description: FY 2017 AMENDED BUDGET REQUEST JUSTIFICATION: \$+151.0M was required to address emergency warfighting readiness requirements to ensure readiness of the BMDS. \$+151.0M Project MD07 - THAAD to procure an additional 12 THAAD interceptors to address warfighter readiness.</p> <p>FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +\$509.14 million and +50 interceptors is required to address emergency warfighting requirements.</p> <p>Project MD07 THAAD: +\$509.14M, This is a base budget requirement. +\$505.0M is required to procure 50 additional THAAD interceptors. +\$4.14M is required to procure the THAAD portion of the USPACOM Joint Emergent Operational Need Statement (JEON) to deliver an integrated Upper Tier (THAAD and Aegis BMD) and Lower Tier (PAC3 Missile Segment Enhancement – MSE) ballistic missile defense system that expands engagement options and increases coverage area.</p> <p>Terminal High Altitude Area Defense (THAAD) is an element of the Terminal Defense Segment (TDS) of the Ballistic Missile Defense System (BMDS). THAAD enhances the TDS by deepening, complementing, and extending the BMDS battlespace and capability to engage ballistic targets in the late mid-course and terminal phases of their trajectory. THAAD Army Navy / Transportable Radar Surveillance - Model 2 (AN/TPY-2) is a surveillance sensor providing data to cue other elements of the BMDS. The THAAD system, in conjunction with the fielded Phased Array Tracking Radar to Intercept on Target (PATRIOT) system, provides the TDS for the Missile Defense Agency (MDA) objective of enhancing the BMDS capability. Five major components (Interceptors, Launchers, AN/TPY-2 Radar, THAAD Fire Control and Communication (TFCC) Tactical Station Groups (TSG), and Peculiar Support Equipment) comprise the THAAD system.</p>												
<p>Justification: The FY 2018 budget increase reflects addition of 50 interceptors requested in this budget amendment. The base budget request included 34 THAAD Interceptors, the THAAD Stockpile Reliability Program, obsolescence mitigation efforts and non-recurring New Equipment Training (NET) for Battery 7, which was delivered in FY 2017.</p> <p>In FY 2018 MDA will continue a "synergy" lot buy approach to THAAD Interceptor purchases. This approach entails awarding a contract that includes an option for the following fiscal year funding. By utilizing this approach, MDA will achieve savings in material costs in multiple fiscal years. This will result in a higher Interceptor quantity buy at a lower average unit price than if buys were not combined.</p> <p>The PB 2018 interceptor procurement plan supports the Army's deployment plan for seven (7) THAAD batteries.</p>												

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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency		Date: November 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency		P-1 Line Item Number / Title: MD07 / THAAD
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0603881C, 0604876C	Other Related Program Elements: 0604876C, 0603881C
Line Item MDAP/MAIS Code: 362		
<p>The first two (2) THAAD Batteries were Research Development Test and Evaluation (RDT&E) funded in Program Element (PE) 0603881C, thus not included in the costs above.</p> <p>"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".</p>		

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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency	Date: November 2017
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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 / GMD
--	--

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

Line Item MDAP/MAIS Code: 362

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	10	-	10	-	-	-	-	Continuing	Continuing
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	180.000	-	180.000	-	-	-	-	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	180.000	-	180.000	-	-	-	-	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	88.000	-	88.000	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	268.000	-	268.000	-	-	-	-	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	18.000	-	18.000	-	-	-	-	Continuing	Continuing

Description:

Description:

Note:

FY 2017 MISSILE DEFEAT ENHANCEMENTS REPROGRAMMING (FY17-26 PA): +\$47.0 million was required to address emergency warfighting requirements in support of Advance Procurement of components for 10 of 20 new silos in a new missile field in Fort Greely, AK (Missile Field 4). This is a congressional special interest item. This is a base budget requirement.

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +\$180.0M Base is required to address emergency warfighting requirements to procure the initial +10 silos in support of a total +20 new silos and associated support equipment for a new missile field (Missile Field #4) at Fort Greely, AK, Project MD08 BMD Midcourse Defense. This is a base budget requirement. This increase will adjust the total FY 2018 Gross Weapons System Cost to \$227 million, which includes \$47 million Advance Procurement received in FY 2017 MISSILE DEFEAT ENHANCEMENT REPROGRAMMING (FY17-26 PA).

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +\$88.0 million is required to address emergency warfighting readiness requirements.

Project MD08 GMD Advanced Procurement: +\$88.0 million. This is a base budget requirement.

+\$32.0 million is required to purchase materials and equipment required to construct the +10 Silo Interface Vaults (SIVs) and silos for the new missile field (Missile Field #4) to accommodate 20 additional GBIs at Fort Greely, AK.

+\$56.0 million is required to purchase long lead components for 4 GBIs in FY19 in support of fielding 20 additional GBIs at Fort Greely, AK for the warfighter to defeat developing threats.

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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency								Date: November 2017		
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency						P-1 Line Item Number / Title: MD08 / GMD				
ID Code (A=Service Ready, B=Not Service Ready):				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: 362										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / GMD				- / -	- / -	- / -	10 / 180.000	- / -	10 / 180.000
P-40	Total Gross/Weapon System Cost				- / -	- / -	- / -	10 / 180.000	- / -	10 / 180.000
*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:
See above

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Exhibit P-40, Advance Procurement Budget Line Item Justification: PB Amended 2018 Missile Defense Agency										Date: November 2017	
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency						P-1 Line Item Number / Title: MD08 / GMD					
Program Elements for Code B Items: N/A						Other Related Program Elements: N/A					
Line Item MDAP/MAIS Code: 362											

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Gross/Weapon System Cost (\$ in Millions)	-	-	-	88.000	-	88.000	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	88.000	-	88.000	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	88.000	-	88.000	-	-	-	-	-	-

Description:

FY 2017 MISSILE DEFEAT ENHANCEMENTS REPROGRAMMING (FY17-26 PA): +\$47.0 million was required to address emergency warfighting requirements in support of Advance Procurement of components for 10 of 20 new silos in a new missile field in Fort Greely, AK (Missile Field 4). This is a congressional special interest item. This is a base budget requirement.

FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +\$88.0 million is required to address emergency warfighting readiness requirements.

Project MD08 GMD Advanced Procurement: +\$88.0 million. This is a base budget requirement.

+\$32.0 million is required to purchase materials and equipment required to construct the +10 Silo Interface Vaults (SIVs) and silos for the new missile field (Missile Field #4) to accommodate 20 additional GBIs at Fort Greely, AK.

+\$56.0 million is required to purchase long lead components for 4 GBIs in FY19 in support of fielding 20 additional GBIs at Fort Greely, AK for the warfighter to defeat developing threats.

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Exhibit P-40, Advance Procurement Budget Line Item Justification: PB Amended 2018 Missile Defense Agency	Date: November 2017
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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 / GMD
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Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 362

Exhibits Schedule				Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	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	1 / GMD			- / -	- / -	- / -	10 / 88.000	- / -	10 / 88.000
P-40	Total Gross/Weapon System Cost			- / -	- / -	- / -	10 / 88.000	- / -	10 / 88.000

*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:

+\$32 million required for Advanced Procurement of components for Silo Interface Vaults and silos for the new missile field (20 silos) in Fort Greely, AK (Missile Field 4) for the lot #2 (10 additional silos). Funds long lead materials and critical sole-source supplies required for fabrication of silos and launch site support components to fabricate Silo Interface Vaults and silos for the new missile field (Missile Field 4). This includes materials, temperature control units, gas actuators and generators, fire detection/hazardous gas panel, electrical components and controls, modeling/detailing.

+\$56.0 million for Advanced Procurement of Ground Based Interceptor (GBI) components for Lot #1 (4 additional GBIs) in support of fielding 20 additional GBIs at Fort Greely, AK. Funds long lead materials for fabrication of boosters and redesigned kill vehicles.

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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency										Date: November 2017		
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency							P-1 Line Item Number / Title: MD09 / AEGIS BMD					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: 0603892C, 0604881C				Other Related Program Elements: 0604881C, 0603892C				
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	222	46	35	50	-	50	43	35	38	26	Continuing	Continuing
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,637.220	586.712	513.801	876.018	-	876.018	642.762	609.572	675.646	634.023	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	38.738	28.337	28.243	-	-	95.318
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,637.220	586.712	513.801	876.018	-	876.018	604.024	581.235	647.403	634.023	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	38.738	-	38.738	28.337	28.243	-	-	-	95.318
Total Obligation Authority (<i>\$ in Millions</i>)	2,637.220	586.712	513.801	914.756	-	914.756	632.361	609.478	647.403	634.023	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	11.348	11.402	10.896	15.651	-	15.651	12.706	14.568	15.066	21.095	Continuing	Continuing
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	11.879	12.755	14.680	17.520	-	17.520	14.948	17.416	17.780	24.386	Continuing	Continuing

Description:

Note:
FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENTS (MDDE) BUDGET AMENDMENT: +\$451.0 million and +16 SM-3 IIA missiles are required to address emergency warfighting readiness requirements.
Project MD09 Aegis BMD SM-3 Development Articles: +\$451.0 million is required for +16 additional SM-3 IIA missiles to increase capability and capacity to the warfighter. The SM-3 Block IIA is 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 Pacific Commands. This will provide a more robust protection of Europe. The SM-3 IIA also provides defense against IRBMs and other threats. This is a base budget requirement. Plan to execute an Undefined Contract Action (UCA) 60 days after authorization and/or passage of a budget to procure a quantity of 16 SM-3 BLK IIA missiles.

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

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

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

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

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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency		Date: November 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency		P-1 Line Item Number / Title: MD09 / AEGIS BMD
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0603892C, 0604881C	Other Related Program Elements: 0604881C, 0603892C
Line Item MDAP/MAIS Code: 362		
<p>For FY 2018 The FY 2018 request procures 34 SM-3 IB AURs. The request also includes 35 canisters in addition to FY2018 production support efforts (Production Engineering, SM-3 IB Obsolescence, Special Tools and Test Equipment, System Engineering and Integration).</p>		
<p>Justification: See above</p>		

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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency										Date: November 2017		
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency							P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0603884C, 0603881C				Other Related Program Elements: 0603884C, 0603881C				
Line Item MDAP/MAIS Code: 362												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	5	-	-	-	-	-	-	-	-	-	-	5
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,093.453	78.634	5.503	11.947	-	11.947	13.572	10.168	8.020	15.336	-	1,236.633
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,093.453	78.634	5.503	11.947	-	11.947	13.572	10.168	8.020	15.336	-	1,236.633
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,093.453	78.634	5.503	11.947	-	11.947	13.572	10.168	8.020	15.336	-	1,236.633
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	10.901	-	-	-	-	-	-	-	-	-	-	10.901
Flyaway Unit Cost (<i>\$ in Millions</i>)	172.502	-	-	-	-	-	-	-	-	-	Continuing	Continuing
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	218.691	-	-	-	-	-	-	-	-	-	-	247.327
<p>Description: FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENT (MDDE) BUDGET AMENDMENT: +\$11.0 million is required to address emergency warfighting requirements in support of lifespan of the COBRA DANE radar.</p> <p>The Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) radar is an integral component of the Ballistic Missile Defense System (BMDS) layered network of sensors. It is easily transported and can be configured to operate either as a Terminal High Altitude Area Defense (THAAD) Fire Unit Radar (terminal mode) or Forward-Based Radar. The forward-based AN/TPY-2 provides detection and tracking during the boost phase. This significantly reduces the uncertainty in target discrimination and reaction time, increasing the probability of a successful BMDS engagement. In forward-based mode, the AN/TPY-2 also provides acquisition and track data via the Ballistic Missile Defense System Command, Control, Battle Management and Communications (C2BMC) and Link 16 to the Aegis missile defense system for cueing. The AN/TPY-2 used in terminal mode is an integral component of the THAAD Battery. The THAAD battery radar is capable of tracking multiple threats and multiple interceptors during engagements in the terminal phase. It provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for fire control.</p> <p>Procurement funding acquired five of the seven AN/TPY-2 Radars required to complete the THAAD Battery acquisitions, with the initial two AN/TPY-2 radars funded from RDT&E. "Procurement Quantity" and "Flyaway Unit Cost" represent AN/TPY-2 radar systems ((i.e. one Antenna Equipment Unit (AEU), one Cooling Equipment Unit, one Electronic Equipment Unit (EEU), and two Prime Power Units (PPU)) only, but the "Net Procurement" cost plus the Initial Spares amount includes the costs of all hardware.</p> <p>The AN/TPY-2 EEU Modification Kits and Radar Field Upgrade (RAFU) Kits provide updated processing capabilities to EEU's in both Terminal and Forward-based modes. The AEU transformers include design improvements to extend the life of this mission critical component.</p> <p>FY 2018 MISSILE DEFEAT AND DEFENSE ENHANCEMENT (MDDE) BUDGET AMENDMENT: +\$11.0 million Project MD11 BMD Radars, is required to extend the lifespan of the COBRA DANE radar, a long-range sensor that provides critical coverage of the current threat to the Homeland. Nearly all of the major COBRA DANE systems have aged well beyond their intended design lifespan and the majority of the radar components are largely obsolete. Upgrades includes critical life extension redesign and software re-hosting to ensure continued operations of COBRA DANE. This is a base budget requirement.</p>												
<p>Justification: FY 2018 base procurement dollars in the amount of \$0.947 million procures one AEU transformer to replace the legacy transformer currently in each forward-based AN/TPY-2 site. The newly designed AEU transformer will include design improvements to extend the life of this mission critical component.</p>												

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Exhibit P-40, Budget Line Item Justification: PB Amended 2018 Missile Defense Agency		Date: November 2017
Appropriation / Budget Activity / Budget Sub Activity: 0300D: Procurement, Defense-Wide / BA 01: Major Equipment / BSA 17: Major Equipment, Missile Defense Agency		P-1 Line Item Number / Title: MD11 / BMDS AN/TPY-2 Radars
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0603884C, 0603881C	Other Related Program Elements: 0603884C, 0603881C
Line Item MDAP/MAIS Code: 362		
<p>\$11.0 million is required to extend the lifespan of the COBRA DANE radar, a long-range sensor that provides critical coverage of the current threat to the Homeland. Nearly all of the major COBRA DANE systems have aged well beyond their intended design lifespan and the majority of the radar components are largely obsolete. Upgrades includes critical life extension redesign and software re-hosting to ensure continued operations of COBRA DANE.</p>		