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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army	Date: May 2017
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0605456A / PAC-3/MSE Missile
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COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	2.201	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.201
PA3: PAC-3/MSE Missile	-	2.201	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.201

Note

Realigned requirements not unique to MSE to PE 0205456A EF9 in FY15.

A. Mission Description and Budget Item Justification

This system is an integral part of the overall Air and Missile Defense (AMD) architecture and enables the incremental fielding of the system capability for Army Air and Missile Defense Battalions.

The PAC-3 Missile Segment Enhancement (MSE) is the latest version of the PAC-3 Missile. It provides a more agile and lethal interceptor that increases the engagement envelope/defended area of the PATRIOT System. Both Live Fire Test and Evaluation (LFT&E) and Initial Operational Test & Evaluation (IOT&E) activities are required to be executed during Low Rate Initial Production (LRIP) in support of the planned Full Rate Production (FRP) decision. As software and hardware improvements are developed there is a continuing need for system level modeling, simulations, and tests. Modeling and Simulation allow for performance assessment against all threats that would not be possible in flight tests due to cost, target, and range constraints. Flight testing is periodically required for validation of the Modeling and Simulation as well as satisfying Army Test & Evaluation Command/Director, Operational Test & Evaluation (ATEC/DOTE) requirements.

There is no funding in FY18.

B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	2.272	0.000	0.000	-	0.000
Current President's Budget	2.201	0.000	0.000	-	0.000
Total Adjustments	-0.071	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.071	-			

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COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
PA3: PAC-3/MSE Missile	-	2.201	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.201
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Missile Segment Enhancement (MSE) is the latest version of the PAC-3 Missile. It provides a more agile and lethal interceptor that increases the engagement envelope/defended area of the PATRIOT System. Both LFT&E and IOT&E activities are required to be executed during Low Rate Initial Production (LRIP) in support of the planned Full Rate Production (FRP) decision. As software and hardware improvements are developed there is a continuing need for system level modeling, simulations, and tests. Modeling and Simulation allow for performance assessment against all threats that would not be possible in flight tests due to cost, target and range constraints. Flight testing is periodically required for validation of Modeling and Simulation as well as satisfying ATEC/DOTE requirements.

PATRIOT is an integral part of the overall Air and Missile Defense (AMD) Architecture and enables the incremental fielding of the system capability for Army Air and Missile Defense Battalions.

There is no funding in FY18.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Testing, Targets, and Modeling and Simulation	2.201	-	-	-	-
Description: Funding is provided for the following efforts					
FY 2016 Accomplishments: Continues execution of LFT&E and flight test activities in support of the Test and Evaluation Master Plan (TEMP).					
Accomplishments/Planned Programs Subtotals	2.201	-	-	-	-

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• SSN C53101: SSN C53101, MSE Missile	514.946	423.201	459.040	-	459.040	496.109	524.489	516.913	524.934	Continuing	Continuing
• SSN C50016: SSN C50016, Lower-Tier Air and Missile Defense (AMD)	130.275	126.470	125.126	-	125.126	114.061	144.243	119.282	121.825	Continuing	Continuing

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C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost	
• PE 0205456: PE 0205456, Proj EF9, System Integration and Test	61.653	70.547	78.922	-	78.922	80.308	95.214	112.607	123.000	Continuing	Continuing	
• PE 0604319A: PE 0604319A, Proj DU3, IFPC2, (FY12 PE 0603305A IFPC II - Intercept)	149.222	-	11.300	-	11.300	52.600	149.300	134.800	139.500	Continuing	Continuing	
• SSN C62002: SSN C62002, IFPC Inc 2-I Block 1 Missile	-	-	57.742	-	57.742	157.406	144.740	100.400	14.600	Continuing	Continuing	
• SSN C62001: SSN C62001, IFPC Inc 2-I Block 1 System	-	19.319	26.589	-	26.589	71.947	191.830	315.025	277.500	Continuing	Continuing	
• PE 0604820A: PE 0604820A, Proj E10, SENTINEL	11.821	17.152	25.968	-	25.968	31.761	51.897	72.562	81.351	Continuing	Continuing	
• PE 0605457A: PE 0605457A, Proj S40 Army Integrated Air and Missile Defense (AIAMD)	222.074	225.769	163.440	-	163.440	147.440	32.743	34.254	34.800	Continuing	Continuing	
• SSN BZ5075: SSN BZ5075, IAMD Battle Command System (IBCS)	20.917	204.513	282.502	-	282.502	371.021	437.607	445.020	516.670	Continuing	Continuing	
• PE 0604741A: PE 0604741A, Proj 126,146,149, Air Defense C2I Eng Dev	33.619	27.131	28.724	-	28.724	28.318	14.638	8.674	-	0.000	141.104	
• SSN AD50700: SSN AD50700; Air & Missile Defense Planning & Control Sys	28.176	25.443	17.005	9.100	26.105	17.960	6.366	6.951	-	0.000	111.001	
• PE 0202429A: PE 0202429A Proj EP8 JLENS COCOM EXERCISE	10.171	46.371	6.746	-	6.746	-	-	-	-	0.000	63.288	
• SSN C62004: SSN C62004, IFPC Inc 2-I Block 2 Missile	-	-	-	-	-	-	-	-	12.300	Continuing	Continuing	
• PE 0605457A: PE 0605457A, Proj DU4; Advanced Electronic Protection Enhancements	-	-	23.165	-	23.165	25.010	26.719	26.218	26.500	Continuing	Continuing	
• PE 0604114A: PE 0604114A, Proj EX2; Lower Tier Air Missile Defense (LTAMD) Capability	-	-	92.428	-	92.428	78.188	86.395	113.485	141.000	Continuing	Continuing	

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• PE 0605052A: <i>PE 0605052A, Proj EY7; IFPC Increment 2 - Block1</i>	-	-	128.580	-	128.580	93.100	52.300	24.700	-	Continuing	Continuing
Remarks											
This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.											
D. Acquisition Strategy											
The design objective of the PATRIOT system is to provide an element of an Integrated Air and Missile Defense System capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. PAC-3 system development efforts further improve system capabilities against emerging and reactive threats. The PAC-3 Missile Program focuses on developing, fabricating and testing the high velocity, hit to kill, surface to air missile and associated ground support equipment to provide essential increases in battle space, accuracy, lethality and firepower to counter and destroy evolving air defense threats. The missile performance is demonstrated through a series of flight tests and modeling and simulation activities. The PAC-3 / MSE program evolves the PAC-3 system providing extended ranges, insensitive munitions enhancements, and greater logistical flexibility. The PAC-3 MSE will be fielded to U.S. PATRIOT units.											
E. Performance Metrics											
N/A											