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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0205456A I Lower Tier Air and Missile Defense (AMD) System								
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
Total Program Element	-	-	78.720	64.159	-	64.159	60.214	58.722	75.315	96.392	Continuing	Continuing	
EF9: System Integration and Test	-	-	78.720	64.159	-	64.159	60.214	58.722	75.315	96.392	Continuing	Continuing	

A. Mission Description and Budget Item Justification

The PATRIOT system includes a family of hardware, software, interceptors (GEM, PAC-2, PAC-3/MSE) and Ground Support Equipment. 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 and Evaluation Command/Director, Operational Test and Evaluation (ATEC/DOTE) requirements of segment improvements.

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.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	78.758	64.628	-	64.628
Current President's Budget	-	78.720	64.159	-	64.159
Total Adjustments	-	-0.038	-0.469	-	-0.469
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.469	-	-0.469
• Other Adjustments 1	-	-0.038	-	-	-

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0205456A / Lower Tier Air and Missile Defense (AMD) System				Project (Number/Name) EF9 / System Integration and Test			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EF9: System Integration and Test	-	-	78.720	64.159	-	64.159	60.214	58.722	75.315	96.392	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This is not a new start - continues efforts funded in PAC-3/MSE Missile 0605456A.

A. Mission Description and Budget Item Justification

The PATRIOT system includes a family of hardware, software, interceptors (GEM, PAC-2,PAC-3/MSE) and Ground Support Equipment. As software and hardware improvements are developed, there is a continuing need for system level modeling, simulations, and tests. Modeling and Simulation allows 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 of segment improvements.

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.

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

	FY 2014	FY 2015	FY 2016
Title: Program Development, Integration, and Support	-	13.158	25.428
Description: Funding is provided for the following effort:			
FY 2015 Plans: Program development, integration of missile and ground system hardware and software in support of PDB-8 activities.			
FY 2016 Plans: Continues program development, integration of missile and ground system hardware and software in support of PDB-8 activities.			
Title: Testing, Targets, Modeling and Simulation	-	65.562	38.731
Description: Funding is provided for the following effort:			
FY 2015 Plans: Continues testing program to include utilization of targets/threat simulators, flight simulator, modeling efforts and test activities to support the Test and Evaluation Master Plan(TEMP) and system testing/analysis for PDB-8 IOT&E.			
FY 2016 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Continues testing program to include utilization of targets/threat simulators, flight simulator, modeling efforts and test activities to support the Test and Evaluation Master Plan (TEMP) and system testing/analysis for PDB-8 IOT&E.												
Accomplishments/Planned Programs Subtotals										-	78.720	64.159
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• PE 0605456A, Project PA3: PE 0605456A, Project PA3 PAC-3/MSE Missile	86.223	34.991	2.272	-	2.272	-	-	-	-	-	123.486	
• SSN C53101: SSN C53101 MSE Missile	690.401	532.605	414.946	-	414.946	430.622	462.676	493.613	569.488	Continuing	Continuing	
• SSN C50016: SSN C50016, Lower-Tier Air and Missile Defense (AMD)	-	110.300	115.075	-	115.075	130.366	113.676	123.582	151.421	Continuing	Continuing	
• PE 0102419A, Project E55: PE 0102419A, Project E55 Joint Aero Stat Program - EMD Effort	57.976	-	-	-	-	-	-	-	-	-	57.976	
• PE 0604319A, Project DU3, IFPC2: PE 0604319A, Project DU3, IFPC2 (FY12 PE 0603305A IFPC II - Intercept)	76.559	96.131	155.361	-	155.361	90.323	58.562	43.384	109.495	Continuing	Continuing	
• SSN C62002: SSN C62002, IFPC Inc 2-I Block 1 Missile	-	-	-	-	-	19.920	48.076	139.362	175.738	Continuing	Continuing	
• SSN C62001: SSN C62001, IFPC Inc 2-I Block 1 System	-	-	-	-	-	-	73.552	123.106	186.840	Continuing	Continuing	
• PE0604820A, Project E10: PE0604820A, Project E10 SENTINEL	1.796	5.221	12.309	-	12.309	11.465	10.971	12.191	30.277	Continuing	Continuing	
• PE 0605457A, Project S40: PE 0605457A, Project S40, Army Integrated Air and Missile Defense (AIAMD)	358.192	152.516	214.099	-	214.099	227.103	169.575	153.451	33.424	Continuing	Continuing	

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• SSN BZ5075: SSN BZ5075, IAMD Battle Command System (IBCS)	-	-	20.917	-	20.917	204.513	296.361	375.763	443.637	Continuing	Continuing
• PE0604741A, Project 126, 146, 149: PE0604741A, Project 126, 146, 149; Air Defense C21 Eng Dev	38.412	15.898	24.569	-	24.569	27.131	20.524	20.018	18.082	Continuing	Continuing
• SSN AD50700: SSN AD50700 Air & Missile Defense Planning & Control Sys	13.090	27.374	28.176	-	28.176	32.443	32.690	33.032	13.366	Continuing	Continuing
• PE 0202429A: PE 0202429A Proj EP8, JLENS COCOM EXERCISE	22.659	43.248	40.565	-	40.565	46.371	6.746	-	-	-	159.589
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 Ballistic 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											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 7						R-1 Program Element (Number/Name) PE 0205456A / Lower Tier Air and Missile Defense (AMD) System				Project (Number/Name) EF9 / System Integration and Test					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	RO	Various : Huntsville, Alabama	0.000	-		1.150	Dec 2014	1.158	Dec 2015	-		1.158	Continuing	Continuing	-
PAC-3 Product Office	RO	Project Office : Huntsville, AL	0.000	-		0.165	Dec 2014	1.100	Dec 2015	-		1.100	-	1.265	-
Subtotal			0.000	-		1.315		2.258		-		2.258	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Integration MSE LMMFC	Various	Lockheed Martin Missiles and Fire Control (LMMFC) : Dallas, Texas	0.000	-		-		12.300	Dec 2015	-		12.300	Continuing	Continuing	-
MSE/PAC-3 Raytheon	Various	Raytheon : Waltham, Massachusetts	0.000	-		4.450	Jan 2015	3.800	Jan 2016	-		3.800	Continuing	Continuing	-
SETA Contracts	Various	Multiple : Multiple	0.000	-		3.083	Feb 2015	1.850	Feb 2016	-		1.850	Continuing	Continuing	-
U.S. Other Government Agencies (OGAs)	MIPR	Various : Huntsville, Alabama	0.000	-		4.310	Dec 2014	5.220	Dec 2015	-		5.220	Continuing	Continuing	-
Subtotal			0.000	-		11.843		23.170		-		23.170	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Targets/Threats Simulators	MIPR	Various : Huntsville, Alabama	0.000	-		25.345	Dec 2014	22.188	Dec 2015	-		22.188	Continuing	Continuing	-
Modeling and Simulation	MIPR	Various : Huntsville, Alabama	0.000	-		3.724	Dec 2014	3.000	Dec 2015	-		3.000	Continuing	Continuing	-
Contractor T&E	Various	Multiple : Multiple	0.000	-		8.425	Dec 2014	7.458	Dec 2015	-		7.458	Continuing	Continuing	-
Other T&E funding	MIPR	Various : WSMR, NM	0.000	-		3.550	Dec 2014	2.585	Dec 2015	-		2.585	Continuing	Continuing	-

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Appropriation/Budget Activity 2040 / 7						R-1 Program Element (Number/Name) PE 0205456A / Lower Tier Air and Missile Defense (AMD) System				Project (Number/Name) EF9 / System Integration and Test					

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mobile Flight Mission Simulator (MFMS)	SS/FPIF	Raytheon : Massachusetts	0.000	-		8.300	Dec 2014	1.600	Dec 2015	-		1.600	Continuing	Continuing	-
PDB 8	MIPR	Various : WSMR, NM	0.000	-		1.331	Dec 2014	1.900	Dec 2015	-		1.900	Continuing	Continuing	-
PBD 8 DT/OT	MIPR	WSMR, NM : Various	0.000	-		14.887	Dec 2014	-		-		-	-	14.887	-
Subtotal			0.000	-		65.562		38.731		-		38.731	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		78.720		64.159		-		64.159	-	-	-

Remarks

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PE 0205456A: *Lower Tier Air and Missile Defense (AMD)...*
Army

Appropriation/Budget Activity	R-1 Program Element (Number/Name)
2040 / 7	PE 0205456A / Lower Tier Air and Missile Defense (AMD) System

Project (Number/Name)
EF9 / *System Integration and Test*

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
PATRIOT System Testing and Evaluation																																
PDB 8 Fielding					PDB-8 Fielding																											
(1) PDB-8 IOC					<div>1</div>																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0205456A / <i>Lower Tier Air and Missile Defense (AMD) System</i>	Project (Number/Name) EF9 / <i>System Integration and Test</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PATRIOT System Testing and Evaluation	1	2015	4	2020
PDB 8 Fielding	4	2017	4	2020
PDB-8 IOC	4	2017	4	2017