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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0605456A: PAC-3/MSE MISSILE							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	86.139	69.029	68.843	-	68.843	129.627	63.506	65.179	65.734	Continuing	Continuing
PA3: PAC-3/MSE MISSILE	-	86.139	69.029	68.843	-	68.843	129.627	63.506	65.179	65.734	Continuing	Continuing
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
From FY 2006 through FY 2010, this system was funded under the PATRIOT/MEADS Combined Aggregate Program (CAP) program element: 0604869A												
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 Integrated Air and Missile Defense Fire Control System/capability for the composite Army Air and Missile Defense Battalions.												
The PATRIOT Advanced Capability 3 (PAC-3) is the evolution of the phased material change improvement to the PATRIOT Program. It is continuously being improved via hardware and software changes to provide enhanced performance across the spectrum for system and threat intercept performance. 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 envelop/defended area of the PATRIOT System. 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 ATEC/DOTE requirements of the PAC-3 segment improvements.												
B. Program Change Summary (\$ in Millions)				FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total				
Previous President's Budget				88.909	69.029	69.175	-	69.175				
Current President's Budget				86.139	69.029	68.843	-	68.843				
Total Adjustments				-2.770	0.000	-0.332	-	-0.332				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-							
• Congressional Rescissions				-	-							
• Congressional Adds				-	-							
• Congressional Directed Transfers				-	-							
• Reprogrammings				-	-							
• SBIR/STTR Transfer				-	-							
• Adjustments to Budget Years				-2.770	-	-0.332	-	-0.332				

UNCLASSIFIED

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
PA3: PAC-3/MSE MISSILE	-	86.139	69.029	68.843	-	68.843	129.627	63.506	65.179	65.734	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
From FY 2006 through FY 2010, this system was funded under the PATRIOT/MEADS Combined Aggregate Program (CAP) program element: 0604869A.												
The PATRIOT Advanced Capability 3 (PAC-3) is the evolution of the phased material change improvement to the PATRIOT Program. It is continuously being improved via hardware and software changes to provide enhanced performance across the spectrum for system and threat intercept performance. 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 envelop/defended area of the PATRIOT System. 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 ATEC/DOTE requirements of the PAC-3 segment improvements.												
A. Mission Description and Budget Item Justification												
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, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: MSE PAC-3									6.000	3.998	2.090	
									Articles: 0	0		
Description: Funding is provided for the following effort												
FY 2012 Accomplishments: Continues MSE upgrade and qualification activities.												
FY 2013 Plans: MSE specific qualification activities to include Solid Rocket Motor (SRM), Ignition Safety Device (ISD), canister, Functional Configuration Audit (FCA).												
FY 2014 Plans:												

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2012		FY 2013		FY 2014	
Prime contractor support for MSE.												
Title: Program integration efforts							40.009		24.531		27.617	
Articles:							0		0			
Description: Funding is provided for the following effort												
FY 2012 Accomplishments: Integration of PAC-3 modernization hardware items in support of MSE follow-on flight tests (task 7.4 and 7.5) and MSE ground system integration/software.												
FY 2013 Plans: Integration of PAC-3 modernization hardware items in support of MSE follow-on flight tests (task 7.4 and 7.5) and MSE ground system integration.												
FY 2014 Plans: Integration of missile and ground system hardware and software.												
Title: Testing, targets, and modeling and simulation							40.130		40.500		39.136	
Articles:							0		0			
Description: Funding is provided for the following effort												
FY 2012 Accomplishments: Modeling and simulation, and MSE follow-on test.												
FY 2013 Plans: Continues range support for Live Fire Test and Evaluation (LFTE), modeling and simulation, and MSE follow-on test.												
FY 2014 Plans: Procurement of targets, test missiles, flight simulator, modelling efforts and test activities to support Test and Evaluation Master Plan (TEMP).												
Accomplishments/Planned Programs Subtotals							86.139		69.029		68.843	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• PE 0604869A: PE 0604869A, Proj M06, PATRIOT/MEADS	377.610	400.861								Continuing	Continuing	

UNCLASSIFIED

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Combined Aggregate Program (CAP)											
• SSN C53101: SSN C53101, MSE Missile	74.953	12.850	540.401		540.401	540.520	559.623	566.757	655.184	Continuing	Continuing
• PE 0102419A: PE 0102419A, Proj E55, JLENS	317.382	190.422	98.450		98.450	46.600	47.450	37.830	2.600	Continuing	Continuing
• PE 0605455A: PE 0605455A, Proj 35 SLAMRAAM	1.186									Continuing	Continuing
• PE 0604319A: PE 0604319A, Proj DU3, IFPC II - Intercept	8.834	76.039	79.232		79.232	107.587	146.463	151.769	159.700	Continuing	Continuing
• PE 0605457A: PE 0605457A, Proj S40 Army Integrated Air and Missile Defense (AIAMD)	262.032	262.211	364.649		364.649	382.869	221.306	141.908	79.338	Continuing	Continuing
• SSN BZ5075: SSN BZ5075, Army IAMD Battle Command System (IBCS)			21.200		21.200	100.700	315.370	482.640	446.130	Continuing	Continuing
• PE 0604820A: PE 0604820A, Proj E10, SENTINEL	3.093	3.486	1.549		1.549	5.264	5.911	6.307	6.053	Continuing	Continuing
• PE 654741A: PE 654741A, Proj 126,146,149, Air Defense C2I Eng Dev	57.050	73.333	18.294		18.294	20.898	20.557	18.009	11.015	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 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 PATRIOT units.											

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E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	Various	Various:Huntsville, AL	1.003	1.003	Dec 2011	1.003	Dec 2012	1.100	Dec 2013	-		1.100	Continuing	Continuing	Continuing
Subtotal			1.003	1.003		1.003		1.100		0.000		1.100			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Missile Segment Enhancement (MSE) - Lockheed Martin Missiles and Fire Control (LMMFC)	C/CPIF	LMMFC:Dallas, TX	62.140	6.000	Dec 2011	3.998	Dec 2012	2.100	Dec 2013	-		2.100	Continuing	Continuing	Continuing
Program Integration	Various	Various:Huntsville, AL	17.607	20.870	Dec 2011	6.443	Dec 2012	5.775	Dec 2013	-		5.775	Continuing	Continuing	Continuing
PAC-3 Product Office	Various	PO:Huntsville, Alabama	4.997	2.327	Dec 2011	2.304	Dec 2012	2.400	Dec 2013	-		2.400	Continuing	Continuing	Continuing
MSE/PAC-3 Raytheon	Various	Raytheon:Waltham, Massachusetts	3.000	18.500	Dec 2011	24.602	Dec 2012	10.900	Dec 2013	-		10.900	Continuing	Continuing	Continuing
SETA Contracts	Various	Various:Huntsville, AL	2.380	3.609	Dec 2011	3.478	Dec 2012	3.800	Dec 2013	-		3.800	Continuing	Continuing	Continuing
U.S. Other Government Agencies (OGAs)	Various	Various:Huntsville, AL	3.748	6.200	Dec 2011	6.201	Dec 2012	7.900	Dec 2013	-		7.900	Continuing	Continuing	Continuing
Subtotal			93.872	57.506		47.026		32.875		0.000		32.875			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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/Threat Simulators	Various	Various:Huntsville, AL	16.500	9.666	Dec 2011	1.500	Dec 2012	4.585	Dec 2013	-		4.585	Continuing	Continuing	Continuing
Modeling and simulation	Various	Various:Huntsville, AL	1.900	1.074	Dec 2011	1.000	Dec 2012	3.930	Dec 2013	-		3.930	Continuing	Continuing	Continuing

UNCLASSIFIED

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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor T&E funding	Various	Various:Huntsville, AL / Dallas, TX	3.100	2.178	Dec 2011	5.150	Dec 2012	1.048	Dec 2013	-		1.048	Continuing	Continuing	Continuing
Other T&E Funding	Various	Various:Holloman AFB, NM	5.100	5.012	Dec 2011	13.350	Dec 2012	3.605	Dec 2013	-		3.605	Continuing	Continuing	Continuing
MFMS	TBD	Various:Huntsville, AL	0.000	9.700	Dec 2011	-		11.800	Dec 2013	-		11.800	Continuing	Continuing	Continuing
PDB 8 DT/OT	TBD	Various:Huntsville, AL	0.000	-		-		9.900	Dec 2013	-		9.900	0.000	9.900	0.000
Subtotal			26.600	27.630		21.000		34.868		0.000		34.868			

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	121.475	86.139		69.029		68.843		0.000		68.843			

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army																DATE: April 2013			
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
PDB 7 Fielding - Modernized Adjunct Processor (MAP)																												
MSE Production Decision																												
MSE Production Contract Award																												
PDB 8 Fielding - Radar Digital Processor (RDP) Required																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army			DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PDB 7 Fielding - Modernized Adjunct Processor (MAP)	3	2013	3	2013
MSE Production Decision	1	2014	1	2014
MSE Production Contract Award	2	2014	2	2014
PDB 8 Fielding - Radar Digital Processor (RDP) Required	3	2016	3	2016