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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	37.731	24.280	44.560	-	44.560	46.287	99.258	94.091	74.663	Continuing	Continuing
036: <i>PATRIOT PROD IMP PGM</i>	10.846	11.473	44.560	-	44.560	46.287	99.258	94.091	74.663	Continuing	Continuing
DF8: <i>DF8</i>	8.111	3.133	-	-	-	-	-	-	-	0.000	11.244
DF9: <i>DF9</i>	18.774	9.674	-	-	-	-	-	-	-	0.000	28.448

A. Mission Description and Budget Item Justification

PATRIOT is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. The Patriot Product Improvement Program upgrades the Patriot system to address operational lessons learned, enhancements to joint force interoperability, and other system performance improvements to provide overmatch capability with the emerging threat. Efforts will be made to expedite PATRIOT materiel solutions (e.g. Radar Digital Processor, Communications Upgrades, Radars on the Net) to facilitate integration into the IAMD architecture.

DF8 Funding was realigned to PE 0203808, DS1.

DF9 Funding was realigned to PE 0203808, DS2

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	39.068	24.280	56.457	-	56.457
Current President's Budget	37.731	24.280	44.560	-	44.560
Total Adjustments	-1.337	-	-11.897	-	-11.897
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.337	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	-11.897	-	-11.897

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0203801A: Missile/Air Defense Product Improvement Program				PROJECT 036: PATRIOT PROD IMP PGM			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
036: PATRIOT PROD IMP PGM	10.846	11.473	44.560	-	44.560	46.287	99.258	94.091	74.663	Continuing	Continuing
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
PATRIOT is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. These improvements focus on the evolving threat and will provide a more robust capability and the foundation upon which furture improvements can more readily be incorporated with minimal hardware changes. Efforts will be made to expedite PATRIOT materiel solutions (e.g. Radar Digital Processor, Communications Upgrades, Radars on the Net) to facilitate integration into the IAMD architecture.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2010	FY 2011	FY 2012
Title: Patriot Product Improvement Articles: Description: Software Improvement for Threat Evolution FY 2010 Accomplishments: Continuation of efforts to extend the footprint and capability of the system against the evolving threat through several programs. FY 2011 Plans: Efforts are under way to ensure fielding of the Radar Digital Processor in FY12 providing the field additional capability and growth potential to counter stressing targets. FY 2012 Plans: The Radar Digital Processor will begin US development efforts to support US FY15 Fielding, providing the field with additional capability and growth potential to counter stressing threats.									10.846	11.473	44.560
									0	0	
Accomplishments/Planned Programs Subtotals									10.846	11.473	44.560

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT 036: <i>PATRIOT PROD IMP PGM</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
D. Acquisition Strategy The design objective of the Patriot system was to provide a baseline system capable of modification to cope with continuing threat evolution. This program minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The Patriot Product Improvement program upgrades the Patriot system to address operational lessons learned, enhancements to joint force interoperability and communications, and other system performance improvements to provide overmatch capability against the emerging threat. Upgrades are implemented through individual hardware and software materiel changes and fielded incrementally. This program encompasses several changes which will require the use of a variety of acquisition methods to develop, test, procure and field.		
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.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army											DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>				PROJECT 036: <i>PATRIOT PROD IMP PGM</i>					

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	RSA:various	25.037	0.459		0.535		-		0.535	Continuing	Continuing	Continuing
Subtotal			25.037	0.459		0.535		-		0.535			

Remarks Non-Applicable (N/A); Redstone Arsenal (RSA)													
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Improvement for Threat Evolution	Various	Multiple:Multiple	50.781	9.282		6.757		-		6.757	Continuing	Continuing	Continuing
Recapitalization	Various	Multiple:Multiple	97.601	-		-		-		-	Continuing	Continuing	Continuing
Radar Digital Processor (RDP)	Various	Raytheon:Massachusetts	-	-		35.400		-		35.400	65.000	100.400	0.000
Subtotal			148.382	9.282		42.157		-		42.157			

Remarks Sole Source-Cost Plus Incentive Fee (SS-CPIF); Sole Source-Fixed Price (SS-FP)													
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
U.S. Contracts	Various	IRTC:various	0.340	0.344		0.377		-		0.377	Continuing	Continuing	Continuing
Subtotal			0.340	0.344		0.377		-		0.377			

Remarks Remarks: Competitive-Firm Fixed Price (C-FFP)													
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army										DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>				PROJECT 036: <i>PATRIOT PROD IMP PGM</i>					

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AMCOM	Various	RSA:various	19.626	0.459		0.445		-		0.445	Continuing	Continuing	Continuing
White Sands Missile Range (WSMR)	Various	WSMR:White Sands Missile Range, NM	14.967	0.229		0.300		-		0.300	Continuing	Continuing	Continuing
RDEC and Other Govt Agencies	Various	RSA:Various	102.491	0.700		0.746		-		0.746	Continuing	Continuing	Continuing
Subtotal			137.084	1.388		1.491		-		1.491			

Remarks Aviation and Missile Command (AMCOM), Research and Development and Engineering Center (RDEC)													
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	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	310.843	11.473		44.560		-		44.560			

Remarks											
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army			DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>		PROJECT 036: <i>PATRIOT PROD IMP PGM</i>	

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	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 6.5 Fielding																												
PDB 7 Fielding (Modernized Adjunct Processor)																												
Radar Digital Processor Development																												
PDB 8 (RDP)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

2040: *Research, Development, Test & Evaluation, Army*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0203801A: *Missile/Air Defense Product Improvement Program*

PROJECT

036: *PATRIOT PROD IMP PGM*

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PDB 6.5 Fielding	3	2010	3	2010
PDB 7 Fielding (Modernized Adjunct Processor)	2	2012	2	2012
Radar Digital Processor Development	4	2011	3	2014
PDB 8 (RDP)	3	2015	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>				PROJECT DF8: <i>DF8</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
DF8: <i>DF8</i>	8.111	3.133	-	-	-	-	-	-	-	0.000	11.244
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification
 This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: DF8 <div style="text-align: right;">Articles:</div> Description: Funding is provided for the following effort FY 2010 Accomplishments: This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. FY 2011 Plans: Program will be reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.	8.111 0	3.133 0	- -
Accomplishments/Planned Programs Subtotals	8.111	3.133	-

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

D. Acquisition Strategy
 N/A

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>				PROJECT DF9: <i>DF9</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
DF9: <i>DF9</i>	18.774	9.674	-	-	-	-	-	-	-	0.000	28.448
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification
This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: DF 9 <div style="text-align: right;">Articles:</div> Description: Funding is provided for the following effort FY 2010 Accomplishments: This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. FY 2011 Plans: Information for this program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.	18.774 0	9.674 0	-
Accomplishments/Planned Programs Subtotals	18.774	9.674	-

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

D. Acquisition Strategy
N/A

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.

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