

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
<b>7 - Operational system development</b>		<b>0203801A - Missile/Air Defense Product Improvement Program</b>							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	16529	30026	37871	40577	25790	10926	10931		172650
036 PATRIOT PROD IMP PGM	16529	10829	11163	12140	12644				63305
DF8 DF8		4292	11804	8579	3217				27892
DF9 DF9		14905	14904	19858	9929	10926	10931		81453

**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. Program Development efforts address Mode V/S Identification Friend or Foe (IFF), launcher and design improvements.

DF8 The PATRIOT advanced missile system plays a critical part in the integrated battlefield. DF8 funding was provided by OSD to support expanding ongoing current Joint efforts to advance integrated battlefield capabilities.

DF9 DF9 funding was provided to the Army by OSD as part of an ongoing Joint OSD-managed effort.

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<b><u>B. Program Change Summary</u></b>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	10651	30219	38115
Current BES/President's Budget (FY 2009)	16529	30026	37871
Total Adjustments	5878	-193	-244
Congressional Program Reductions		-193	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	5878		
SBIR/STTR Transfer			
Adjustments to Budget Years			-244

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

**February 2008**

<b>BUDGET ACTIVITY</b> <b>7 - Operational system development</b>		<b>PE NUMBER AND TITLE</b> <b>0203801A - Missile/Air Defense Product Improvement Program</b>						<b>PROJECT</b> <b>036</b>	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
036 PATRIOT PROD IMP PGM	16529	10829	11163	12140	12644				63305

**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. Program Development efforts address Mode V/S Identification Friend or Foe (IFF), launcher and design improvements.

<b><u>Accomplishments/Planned Program:</u></b>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Software Improvement for Threat Evolution	16229	10829	11163
Small Business Innovative Research/Small Business Technology Transfer Programs	300		
<b>Total</b>	<b>16529</b>	<b>10829</b>	<b>11163</b>

**B. Other Program Funding Summary** Not applicable for this item.

**C. Acquisition Strategy** The design objective of the Patriot system was to provide a baseline system capable of modification to cope with the evolving threat. This alternative 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 other system performance improvements to provide overmatch capability with the emerging threat. Upgrades are implemented through individual hardware and software materiel changes and fielded incrementally.

# ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203801A - Missile/Air Defense Product Improvement Program							036		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software Improvement for Threat Evolution	SS-CPIF	Multiple	16858	14509	2Q	8829	2Q	8984	2Q		49180	
Recapitalization	SS-CPIF	Multiple	89289								89289	
SIAP	SS-FP	Raytheon, MA	14852								14852	
Advanced Composite Radome	SS-CPIF	Multiple	3100								3100	
Subtotal:			124099	14509		8829		8984			156421	
Remarks: Sole Source-Cost Plus Incentive Fee (SS-CPIF); Sole Source-Fixed Price (SS-FP)												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Missile Command	MIPR	RSA, AL	18221	330	2-3Q	375	2-3Q	400	2-3Q	Cont.	Cont.	
White Sands Missile Range	MIPR	WSMR, NM	14042	230	2-3Q	250	2-3Q	270	2-3Q	Cont.	Cont.	
RDEC and Other Govt Agent	MIPR	RSA, AL	99992	600	2-3Q	625	2-3Q	684	2-3Q	Cont.	Cont.	
Subtotal:			132255	1160		1250		1354		Cont.	Cont.	
Remarks: Military Interdepartmental Purchase Request (MIPR); Redstone Arsenal (RSA); White Sands Missile Range (WSMR)												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

# ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
<b>7 - Operational system development</b>			<b>0203801A - Missile/Air Defense Product Improvement Program</b>							<b>036</b>	
In-House Support	N/A	RSA, AL	17211	480	1-4Q	450	1-4Q	475	1-4Q	Cont.	Cont.
Matrix Support	N/A	RSA, AL	5137	380	1-2Q	300	1-2Q	350	1-2Q	Cont.	Cont.
Subtotal:			22348	860		750		825		Cont.	Cont.

Remarks: Non-Applicable (N/A); Redstone Arsenal (RSA)

<b>Project Total Cost:</b>			<b>278702</b>	<b>16529</b>		<b>10829</b>		<b>11163</b>		<b>Cont.</b>	<b>Cont.</b>
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# Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13																											
	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																								
	<b>RECAPITALIZATION</b>	Recapitalization																																																		
Mode V IFF																																																				
Launcher Electronics																																																				
Surveillance/Detection																																																				
Software Build	Software Build																																																			
(1) PBD 6 Event Start: 5416 vposition: 3135																																																				
(2) PBD 6.5 Event Start: 7800 vposition: 3630																																																				
(3) PBD 7 Event Start: 10400 vposition: 4125																																																				

**Schedule Detail (R4a Exhibit)**

**February 2008**

BUDGET ACTIVITY <b>7 - Operational system development</b>		PE NUMBER AND TITLE <b>0203801A - Missile/Air Defense Product Improvement Program</b>					PROJECT <b>036</b>	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
RECAPITALIZATION	1Q - 4Q							
Mode V IFF	1Q							
Launcher Electronics	1Q							
Surveillance/Detection								
Software Build	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
PBD 6 Event Start: 5416 vposition: 3135	1Q							
PBD 6.5 Event Start: 7800 vposition: 3630			1Q					
PBD 7 Event Start: 10400 vposition: 4125					1Q			