

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

February 2006

## BUDGET ACTIVITY

### 7 - Operational system development

## PE NUMBER AND TITLE

### 0203802A - Other Missile Product Improvement Programs

COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	18414	19706	23346	5747	6149	4871	Continuing	Continuing
786 APKWS Simulator Upgrade	0	0	12	5546	5747	6149	4871	Continuing	22325
788 ATACMS PIP	0	18414	19694	17800	0	0	0	0	55908

**A. Mission Description and Budget Item Justification:** The Advanced Precision Kill Weapon System (APKWS) Training Simulator upgrades will consist of the development, testing, and installation of the software/hardware necessary for pilot training. These software upgrades will be developed, tested, and installed on Army helicopter simulators. The training simulator upgrades will aid the pilot and maintainers in the initial and annual training required for firing and maintaining the APKWS munition system. The training simulator upgrades will significantly reduce the number of munitions required for initial and annual training.

The Army Tactical Missile System (ATACMS) Product Improvement Program (PIP) is an effort to integrate a new Tri-Mode warhead and fuzing system into the qualified TACMS 2000 Quick Reaction Unitary (QRU), M57 missile system. The PIP will be designed to be a 24/7 near all weather, low collateral damage, precision strike, artillery missile system. Coupled with the High Mobility Artillery Rocket System (HIMARS) and Multiple Launch Rocket System (MLRS) M270A1 launch platforms, the ATACMS PIP will provide the joint war fighter with unprecedented expeditionary capability as a highly mobile, rapidly deployable, precision guided munition. It will be effective against counter fire, air defense, light material, and urban infrastructure targets. This effort will encompass the acquisition of a new warhead, the development and implementation of a tri-mode fuze, and Insensitive Munition (IM) trade studies. The new warhead and multi-mode fuze will provide the capability to execute air-burst, point detonation, and delay missions. Future technologies and munitions will be assessed for incremental development and potential insertion into ATACMS PIP to provide operational flexibility and capability.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)				February 2006
BUDGET ACTIVITY <b>7 - Operational system development</b>		PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>		
	FY 2005	FY 2006	FY 2007	
<b><u>B. Program Change Summary</u></b>				
Previous President's Budget (FY 2006)	4659	23560	24622	
Current BES/President's Budget (FY 2007)	0	18414	19706	
Total Adjustments	-4659	-5146	-4916	
Congressional Program Reductions		-4960		
Congressional Rescissions	-4659	-186		
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer				
Adjustments to Budget Years			-4916	
FY 2007 - Project 786 funds realigned to higher Army priority requirements in accordance with APKWS program restructure.				

<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R2a Exhibit)</b>								<b>February 2006</b>																					
<b>BUDGET ACTIVITY</b> <b>7 - Operational system development</b>				<b>PE NUMBER AND TITLE</b> <b>0203802A - Other Missile Product Improvement Programs</b>				<b>PROJECT</b> <b>786</b>																					
<b>COST (In Thousands)</b>	<b>FY 2005 Estimate</b>	<b>FY 2006 Estimate</b>	<b>FY 2007 Estimate</b>	<b>FY 2008 Estimate</b>	<b>FY 2009 Estimate</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Estimate</b>	<b>Cost to Complete</b>	<b>Total Cost</b>																				
786      APKWS Simulator Upgrade	0	0	12	5546	5747	6149	4871	Continuing	22325																				
<p><b><u>A. Mission Description and Budget Item Justification:</u></b> The Advanced Precision Kill Weapon System (APKWS) Simulator Upgrade program develops upgrades for new and existing aircraft flight simulators and combat mission simulators. These simulator upgrades are required to enable combat aircrews to train with APKWS. The APKWS Simulator Upgrade funding will develop, test, qualify, and integrate the software/hardware required for flight simulators and combat mission simulators. The use of both flight simulators and combat mission simulators for training is an integral part of the APKWS program. Extensive use of simulators will reduce the number of APKWS rounds required for annual live fire training.</p>																													
<b><u>Accomplishments/Planned Program</u></b>						<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>																					
Develop system requirements for training simulator hardware and software.						0	0	12																					
Total						0	0	12																					
<p><b><u>B. Other Program Funding Summary</u></b></p> <table border="1"> <tr> <td></td> <td><b>FY 2005</b></td> <td><b>FY 2006</b></td> <td><b>FY 2007</b></td> <td><b>FY 2008</b></td> <td><b>FY 2009</b></td> <td><b>FY 2010</b></td> <td><b>FY 2011</b></td> <td><b>To Compl</b></td> <td><b>Total Cost</b></td> </tr> <tr> <td>PE 604802/705 Advanced Precision Kill Weapon System (APKWS) SD&amp;ED</td> <td>15289</td> <td>10625</td> <td>44742</td> <td>66670</td> <td>49824</td> <td>19014</td> <td>19666</td> <td>0</td> <td>225830</td> </tr> </table>											<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>To Compl</b>	<b>Total Cost</b>	PE 604802/705 Advanced Precision Kill Weapon System (APKWS) SD&ED	15289	10625	44742	66670	49824	19014	19666	0	225830
	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>To Compl</b>	<b>Total Cost</b>																				
PE 604802/705 Advanced Precision Kill Weapon System (APKWS) SD&ED	15289	10625	44742	66670	49824	19014	19666	0	225830																				
<p><b><u>C. Acquisition Strategy</u></b> Development and qualification of APKWS training simulator hardware/software will be accomplished via various types of contracts. The U.S. Army Aviation and Missile Life Cycle Management Command will provide assistance and technical expertise during the development effort.</p>																													

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)								February 2006	
BUDGET ACTIVITY <b>7 - Operational system development</b>				PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>				PROJECT <b>788</b>	
COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
788 ATACMS PIP	0	18414	19694	17800	0	0	0	0	55908
<b>A. Mission Description and Budget Item Justification:</b> The Army Tactical Missile System (ATACMS) Product Improvement Program (PIP) is an effort to integrate a new Tri-Mode warhead and fuzing system into the qualified TACMS 2000 Quick Reaction Unitary (QRU), M57 missile system. The PIP will be designed to be a 24/7 near all weather, low collateral damage, precision strike, artillery missile system. Coupled with the High Mobility Artillery Rocket System (HIMARS) and Multiple Launch Rocket System (MLRS) M270A1 launch platforms, the ATACMS PIP will provide the joint war fighter with unprecedented expeditionary capability as a highly mobile, rapidly deployable, precision guided munition. It will be effective against counter fire, air defense, light material, and urban infrastructure targets. This effort will encompass the acquisition of a new warhead, the development and implementation of a tri-mode fuze, and Insensitive Munition (IM) trade studies. The new warhead and multi-mode fuze will provide the capability to execute air-burst, point detonation, and delay missions. Future technologies and munitions will be assessed for incremental development and potential insertion into ATACMS PIP to provide operational flexibility and capability.									
<b><u>Accomplishments/Planned Program</u></b>						<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	
Conduct Development Engineering which includes: Warhead design, evaluation and qualification, tri-mode fuze development and qualification, and Insensitive Munitions (IM) trade studies.						0	15496	14683	
Conduct system Test and Evaluation program which includes: Developmental (Arena) and Operational (Flight) tests.						0	873	2917	
Develop Advance Field Artillery Tactical Data System (AFATDS) interface.						0	511	491	
Perform continuous technical and risk assessments, conduct studies and prepare milestone documentation.						0	1534	1603	
Total						0	18414	19694	
<b><u>B. Other Program Funding Summary</u></b>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
ATACMS Block IA - Procurement Army C98501	160800	57689	60502	61268	0	0	0	0	340259
ATACMS MODS - Procurement Army C98800	0	0	0	2278	38380	40953	42685	424247	548543
<b>C. Acquisition Strategy</b> Currently the Army Tactical Missile Systems (ATACMS) Quick Reaction Unitary (QRU) is the only ATACMS variant in production. The PIP will be a product improvement to the QRU. The PIP will integrate a new warhead, develop/implement a tri-mode fuze and perform IM trade studies. The PIP will focus on developing these capabilities to meet the requirements of the ATACMS Unitary Operational Requirements Document (ORD). Additionally, the PIP program will include a development and									

<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R2a Exhibit)</b>	<b>February 2006</b>
---	----------------------

February 2006

## BUDGET ACTIVITY

### 7 - Operational system development

PE NUMBER AND TITLE
<b>0203802A - Other Missile Product Improvement Programs</b>

PROJECT  
788

## 7 - Operational system development

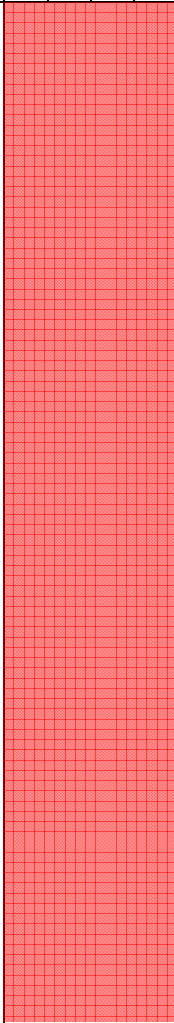








## 0203802A - Other Missile Product Improvement Programs

788

operational test program that will assess system survivability, suitability, accuracy, and effectiveness. The Acquisition strategy is to leverage technology already gained from the QRU program, and execute a stream-lined product improvement program employing an incremental development approach.

ARMY RDT&E COST ANALYSIS (R3)										February 2006		
BUDGET ACTIVITY				PE NUMBER AND TITLE							PROJECT	
<b>7 - Operational system development</b>				<b>0203802A - Other Missile Product Improvement Programs</b>							<b>788</b>	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prime Contract	TBD	TBD	0	0		14654	2Q	13607	2Q	11402	39663	0
Developmental Engineering	Various	RDEC, AL	0	0		842	1-2Q	1076	1-2Q	1228	3146	0
Subtotal:			0	0		15496		14683		12630	42809	0
Remarks: TBD - To Be Determined, RDEC - Research Development Engineering Center, Huntsville, AL.												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	S3, GSA, CAS	0	0		511	1-2Q	491	1-2Q	0	1002	0
Subtotal:			0	0		511		491		0	1002	0
Remarks: S3 - Systems Studies Simulation, Inc., Huntsville, AL; C/CPFF - Competitive/Cost Plus Fixed Fee; GSA - Government Service Agency; CAS - Clark and Stender, Inc.												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	WSMR, RTTC, APG, Eglin, China Lake	0	0		873	1-2Q	2917	1-2Q	4136	7926	0
Subtotal:			0	0		873		2917		4136	7926	0
Remarks: WSMR - White Sands Missile Range, New Mexico; RSA - Redstone Arsenal, Alabama; RTTC - Redstone Technical Test Center; APG - Aberdeen Proving Grounds, Maryland; Eglin Air Force Base, Florida; China Lake, California												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	N/A	PFRMS Project Office, Redstone Arsenal, AL	0	0		1534	1-4Q	1603	1-4Q	1034	4171	0
Subtotal:			0	0		1534		1603		1034	4171	0

ARMY RDT&E COST ANALYSIS (R3)							February 2006					
BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs					PROJECT 788				
Remarks: PFRMS - Precision Fires Rocket and Missile Systems; N/A - Not Applicable												
Project Total Cost:			0	0		18414		19694		17800	55908	0

Schedule Profile (R4 Exhibit)																		February 2006														
BUDGET ACTIVITY					PE NUMBER AND TITLE																		PROJECT									
7 - Operational system development					0203802A - Other Missile Product Improvement Programs																		788									
Event Name					FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
					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
(1) Contrtact Award									▲ CA																							
Warhead Trade Studies / Evaluation																																
Fuze Evaluation Studies / Evaluation																																
Arena / Lethaliv Test																																
Warhead Qualification																																
Fuze Oualification																																
Safety & Transportation Tests																																
Flight Tests																																
Launcher / FCS Integration Tests																																

Schedule Detail (R4a Exhibit)						February 2006	
BUDGET ACTIVITY <b>7 - Operational system development</b>			PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>			PROJECT <b>788</b>	
<u><b>Schedule Detail</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>FY 2008</b></u>	<u><b>FY 2009</b></u>	<u><b>FY 2010</b></u>	<u><b>FY 2011</b></u>
Contract Award		2Q					
Warhead Trade Studies / Evaluation		2-4Q	1-4Q				
Fuze Evaluation Studies / Evaluation		2-4Q	1-2Q				
Arena / Lethality Test		4Q	1-4Q				
Warhead Qualification			2-4Q	1-3Q			
Fuze Qualification			2-4Q	1-2Q			
Safety & Transportation Tests			4Q	1-4Q			
Flight Tests			3-4Q	1-4Q			
Launcher / FCS Integration Tests			4Q	1-4Q			