

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

February 2004

## BUDGET ACTIVITY

7 - Operational system development

## PE NUMBER AND TITLE

0203802A - Other Missile Product Improvement Programs

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	12229	1061	4863	9858	8987	22916	21623	Continuing	Continuing
785 LONGBOW HELLFIRE PIP	12229	1061	0	0	0	0	0	0	42549
786 APKWS SIMULATOR UPGRADE	0	0	4863	9858	8987	22916	21623	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** Longbow HELLFIRE is a Future Force missile system that provides the Army with a fire-and-forget, anti-armor capability for the Apache Longbow (Stryker Force) and Comanche (Future Force) helicopters. The fire-and-forget Longbow HELLFIRE system greatly increases aircraft survivability and dramatically improves target acquisition and engagement capabilities in adverse weather when the battlefield is obscured (smoke, fog, dust), and when the threat is using countermeasures. Evolutionary improvements are required to maintain the current effectiveness of the Longbow HELLFIRE missile against expanding regional power threats. The Longbow HELLFIRE Product Improvement Program (PIP) will improve Home-on-Jam (HOJ)/Anti-Jam (AJ) capabilities for the missile. The Longbow HELLFIRE PIP program supports the current to Future Force transition path of the Transformation Campaign Plan (TCP).

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 the AH-64 Apache, and the RAH-66 Comanche helicopter simulators. These training simulator upgrades will aid the pilot in the initial and annual training required for firing the APKWS munition. The training simulator upgrades will significantly reduce the number of munitions required for initial and annual training. The APKWS Simulator Upgrade program supports the Current to Future Force transition path of the Transformation Campaign Plan (TCP).

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<b><u>B. Program Change Summary</u></b>	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	12445	9822	4915
Current Budget (FY 2005 PB)	12229	1061	4863
Total Adjustments	-216	-8761	-52
Congressional program reductions		-10	
Congressional rescissions			
Congressional increases			
Reprogrammings	-216	-8751	
SBIR/STTR Transfer			
Adjustments to Budget Years			-52

<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)</b>	<b>February 2004</b>
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BUDGET ACTIVITY <b>7 - Operational system development</b>	PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>	PROJECT <b>785</b>
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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
785      LONGBOW HELLFIRE PIP	12229	1061	0	0	0	0	0	0	42549

**A. Mission Description and Budget Item Justification:** Longbow HELLFIRE is a Future Force missile system that provides the Army with a fire-and-forget, anti-armor capability for the Apache Longbow (Stryker Force) and Comanche (Future Force) helicopters. The fire-and-forget Longbow HELLFIRE system greatly increases aircraft survivability and dramatically improves target acquisition and engagement capabilities in adverse weather when the battlefield is obscured (smoke, fog, dust), and when the threat is using countermeasures. Evolutionary improvements are required to maintain the current effectiveness of the Longbow HELLFIRE missile against expanding regional power threats. The Longbow HELLFIRE Product Improvement Program (PIP) will improve Home-on-Jam (HOJ)/Anti-Jam (AJ) capabilities for the missile. The Longbow HELLFIRE PIP program supports the Current to Future transition path of the Transformation Campaign Plan (TCP).

<u>Accomplishments/Planned Program</u>	FY 2003	FY 2004	FY 2005
Implement design changes; formal hardware qualification; hardware in the loop; complete critical/final design; complete guidance section and rocket ball design evaluation.	10229	1032	0
Conduct missile ground flight test, low speed captive flight test, and aircraft system flight test.	1193	0	0
Conduct tower, wind tunnel, and hardware in the loop testing.	0	0	0
Perform government engineering support.	807	0	0
Small Business Innovative Research/Small Business Technology Transfer Programs	0	29	0
<b>Totals</b>	<b>12229</b>	<b>1061</b>	<b>0</b>

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0203802A - Other Missile Product Improvement Programs

PROJECT  
785

## B. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
C70300 Longbow Hellfire/LBHF	181183	24875	15575	2519	0	0	0	0	2080548
C71500 HELLFIRE Modifications	0	0	9770	0	0	0	0	0	9770

C. Acquisition Strategy: Development of the Longbow HELLFIRE HOJ/AJ will be sole source to the prime contractor, Longbow Limited Liability Company (LLLC). The U.S. Army Aviation and Missile Command (AMCOM) laboratories will provide assistance/technical expertise during the development effort. A sole source contract was awarded to the LLLC for development and qualification of HOJ/AJ.

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY <b>7 - Operational system development</b>					PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>					PROJECT <b>785</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prime Contract	LC/CPIF-AF	Longbow Limited Liability Company, Orlando, FL	21576	8970	1Q	1061	1Q	0		0	31607	0
b . Support Contracts	Various	Various	2120	622	1-4Q	0	1-4Q	0		0	2742	0
c . Development Engineering	Various	Various	1944	637	1-4Q	0	1-4Q	0		0	2581	0
Subtotal:			25640	10229		1061		0		0	36930	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)										February 2004		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
7 - Operational system development					0203802A - Other Missile Product Improvement Programs					785		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support	Various	Various	1074	1193	1-4Q	0		0		0	2267	0
Subtotal:			1074	1193		0		0		0	2267	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	Various	Various	2545	807	1-4Q	0		0		0	3352	0
Subtotal:			2545	807		0		0		0	3352	0
Project Total Cost:			29259	12229		1061		0		0	42549	0

Schedule Profile (R4 Exhibit)																				February 2004													
BUDGET ACTIVITY 7 - Operational system development												PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs																PROJECT 785					
Event Name		FY 02				FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09			
		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				
P3I																																	
HOJ/AJ RDTE																																	
HOJ/AJ ECP Fielding																																	
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Schedule Detail (R4a Exhibit)						February 2004			
BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs				PROJECT 785		
<u>Schedule Detail</u>			FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Test and Evaluation									
Missile firings LBHF HOJ/AJ			2Q						
Engineering Change Proposal LBHF HOJ/AJ			3Q						



# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

February 2004

BUDGET ACTIVITY  
7 - Operational system development

PE NUMBER AND TITLE  
**0203802A - Other Missile Product Improvement Programs**

PROJECT  
**786**

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
786      APKWS SIMULATOR UPGRADE	0	0	4863	9858	8987	22916	21623	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** 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 AH-64D 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. The APKWS Simulator Upgrade program supports the Current to Future Force transition path of the Transformation Campaign Plan (TCP). APKWS is an FCS unit of action complementary system.

<u>Accomplishments/Planned Program</u>	FY 2003	FY 2004	FY 2005
Define system requirements for training simulator hardware and software.	0	0	4263
Develop test plans.	0	0	212
Perform government engineering support.	0	0	388
Totals	0	0	4863

<b>ARMY RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)</b>	<b>February 2004</b>
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BUDGET ACTIVITY <b>7 - Operational system development</b>	PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>	PROJECT <b>786</b>
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<b><u>B. Other Program Funding Summary</u></b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost	
PE 604802/705 Advanced Precision Kill Weapon System (APKWS) SD&ED	21366	46870	12450	6241	5054	0	0	0	91981	

**C. Acquisition Strategy:**Development and qualification of APKWS training simulator hardware/software will be accomplished via full and open competition. The U.S. Army Aviation and Missile Command (AMCOM) will provide assistance and technical expertise during the development effort.

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY <b>7 - Operational system development</b>					PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>					PROJECT <b>786</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prime Contract	CPIF/AF	TBD	0	0		0		3713	1Q	92688	96401	0
b . Support Contracts	Various	Various	0	0		0		125	1-4Q	3063	3188	0
c . Developmental Engineering	Various	Various	0	0		0		425	1-4Q	8679	9104	0
Subtotal:			0	0		0		4263		104430	108693	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 7 - Operational system development					PE NUMBER AND TITLE 0203802A - Other Missile Product Improvement Programs					PROJECT 786		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test Support	Various	Various	0	0		0		212	1Q	6046	6258	0
Subtotal:			0	0		0		212		6046	6258	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	Various	Various	0	0		0		388	1Q	8404	8792	0
Subtotal:			0	0		0		388		8404	8792	0
Project Total Cost:			0	0		0		4863		118880	123743	0

Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY <b>7 - Operational system development</b>			PE NUMBER AND TITLE <b>0203802A - Other Missile Product Improvement Programs</b>			PROJECT <b>786</b>	
<u><b>Schedule Detail</b></u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Award APKWS Simulator Contract			1Q				
APKWS Simulator PDR			3Q				
APKWS Simulator CDR				2Q			
APKWS Simulator Testing				3Q			
APKWS Simulator Refit				4Q			