

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

February 2002

BUDGET ACTIVITY

PE NUMBER AND TITLE

5 - Engineering and manufacturing development

0604768A - Brilliant Anti-Armor Submunition (BAT)

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	97931	122868	190293	110615	34723	9904	35552	0	1010102
2NT BAT OPERATIONAL TEST	49	71	435	1503	0	0	0	0	4711
687 BAT P3I	67563	122797	189858	109112	34723	9904	35552	0	694029
688 ATACMS BLK II	30319	0	0	0	0	0	0	0	311362

A. Mission Description and Budget Item Justification: The Army Tactical Missile System (ATACMS) Block II with the BAT submunition is a Legacy to Objective Force Weapon System that provides for precision fires for the destruction and disruption of threat forces and weapons from ranges of 35-145 kilometers to prevent them from influencing the maneuver battle. The ATACMS Block II missile system is the only Army system: (1) capable of near term insertion of automatic target recognition to deliver "discriminatory fires" while minimizing collateral damage; (2) through FY 10, capable of overcoming large targeting errors to kill the increasingly prevalent "shoot and scoot" SCUDs and heavy multiple rocket launchers; (3) capable of fire support beyond 70 kilometers against both moving and stationary armored and relocatable high value targets. In the past, the only options to engage these targets were attack helicopters or fixed wing aircraft placing critical resources, particularly air crews, at risk and are limited by inclement weather. The capability of the BAT submunition can obtain similar results through its acquisition and terminal guidance capabilities, and its ability to attack well-defended armored forces, well behind enemy lines in near all-weather conditions. The ATACMS Block II missile system includes the basic BAT submunition, a BAT pre-planned product improvement (P3I) submunition, and the Army Tactical Missile System Block II (ATACMS BLK II) missile. The basic BAT submunition is a dual-sensor (acoustic and infrared) precision guided submunition that autonomously seeks out and destroys moving armored vehicles. Thirteen BAT and BAT P3I submunitions are carried deep into enemy territory by the ATACMS Block II and dispensed over a large target area, selectively attacking and destroying individual targets. The BAT P3I program will provide a new sensor suite (millimeter wave and imaging infrared), which greatly improves inclement weather capability and effectiveness against countermeasures. The BAT P3I submunition will attack time critical, high priority targets, including cold, stationary, armored targets, Surface-to-Surface Missile (SSM) Transporter Erector Launchers (TELs), and Heavy Multiple Rocket Launchers (MRLs). BAT P3I will conduct Operational Tests (OTs) in FY 04 through FY 05 with the purchase of missile and submunition hardware in FY 02 and FY 03. The ATACMS BLK II missile is a version of the currently fielded and combat-proven Army TACMS Block I missile and is designed to carry 13 BAT or BAT P3I submunitions. The primary mission of the ATACMS Block II (loaded with BAT or P3I submunitions) is to provide the Army's Objective Force and Joint Forces with a deep strike capability to delay, disrupt, neutralize, or destroy armored combat vehicles/organization. The ATACMS Block II missile is fired from the M270A1 launcher and the High Mobility Artillery Rocket System (HIMARS). The HIMARS is a Legacy to Objective Force Weapons System.

The ATACMS Block II missile system with BAT and BAT P3I is the Army's only brilliant munition program and supports the Legacy to Objective Force transition path of the Transformation Campaign Plan (TCP).

*In addition to the above funding, this PE received \$55M in FY03 and \$10M in FY04 to support Cost of War for the Army Tactical Missile System -

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Penetrator(TACMS-P).

<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	97203	123899	52431
Appropriated Value	98102	123899	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-1031	0
b. SBIR / STTR	-2890	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	3618	0	0
e. Rescissions	-899	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	137862
Current Budget Submit (FY 2003 PB)	97931	122868	190293

FY03 increase funds additional risk reduction and test requirements for BAT P31.

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BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604768A - Brilliant Anti-Armor Submunition (BAT)	PROJECT 687
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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
687 BAT P3I	67563	122797	189858	109112	34723	9904	35552	0	694029

A. Mission Description and Budget Item Justification: The BAT P3I is the submunition in the ATACMS Block II missile system, a Legacy to Objective Force Weapon System that provides the Army's Objective Force and Joint Forces with a precision strike capability to delay, disrupt, neutralize, or destroy armored combat vehicles and TELs/MRLs. The BAT P3I is a multi-sensored, terminally -guided submunition that searches, tracks, and destroys specific targets including mobile armored combat vehicles, cold stationary armored combat vehicles, Surface-to-Surface Missile (SSM) Transporter Erector Launchers (TELs), and Heavy Multiple Rocket Launchers (MRLs). The BAT P3I provides increased capability in inclement weather conditions and against countermeasured targets. The BAT P3I expands the target set and overcomes large target location error. The BAT P3I program will incorporate new seeker and microprocessor technologies while maintaining the current form, fit, and maximum commonality of components. This program includes studies/demonstrations pertaining to technology advancements, target recognition, and acoustic/infrared/millimeter wave characterizations of expanded target sets. BAT P3I will conduct Operational Tests (OTs) in FY 04 through FY 05 to support a Full-Rate Production Decision in 3rd Quarter FY 05. The ATACMS Block II with BAT P3I has a very low operation and sustainment cost. The ATACMS Block II missile is fired from the M270A1 launcher and the High Mobility Artillery Rocket system (HIMARS).

The ATACMS Block II missile with BAT P3I fired from the HIMARS is the Army's only brilliant munition program and supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 34355 Continued Seeker Integration and Armor Design Analysis
- 14199 Fabricated and Assembled BAT P3I Test Hardware (47 Submunitions with Seekers, and 19 Seeker Stand Alone Test Articles)
- 10049 Conducted Continuous Captive Flight test, Air Cannon test on High Density Flight Data Recorder (HDFDR), and Purchased Targets for Testing

- 7999 Continued Simulation Analysis to include Hardware-in-the-Loop and Software Integration Lab
- 961 Conducted Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 67563

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- 47953 Continue Seeker Integration and Test Analysis for Armor Target Array
- 10831 Complete Fabrication and Assemble BAT P3I Test Hardware for Armor Testing (44 submunitions with Seekers, and 14 Stand alone Test Articles)
- 28071 Develop Items for Pre Production Tests (PPTs), and Development Tests (DTs) (79 Submunitions with Seekers, 4 Seeker Stand Alone Test Articles, and 4 Block II Missile Hardware Kits)
- 25584 Conduct Recoverable BAT Flight Test II, Engineering Design Test I, Munition Verification Test, Purchase CM Kits, and Target Maintenance/Replacement
- 6858 Simulation Analysis to include Hardware-in-the-Loop and Software Integration Lab
- 2999 Inflight Survivability Analysis/Testing/System Improvement
- 501 Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 122797

FY 2003 Planned Program

- 11161 Initiate MRL/TEL Engineering/Design Analysis
- 38060 Complete Seeker Integration and Test Analysis for Armor Target Array
- 20150 Fabricate and Assemble items for PPTs, and DTs (79 Submunitions with Seekers, 4 Seeker Stand Alone Test Articles, and 4 Block II Missile Hardware Kits)
- 52190 Develop Items for OT (7 Missiles and 101 Submunitions)
- 52560 Conduct Cold Region Flight Test, Recoverable BAT III, DVT, PPT1, Common Hardware RBATs and PPTs, and DT1
- 9237 Simulation Analysis to include Hardware-in-the-Loop and Software Integration Lab
- 6002 Inflight Survivability Analysis/Testing/System Improvement
- 498 Trade Studies, CAIV Initiatives, Risk Reduction and System Improvement and Optimization Activities

Total 189858

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<u>B. Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
ARMY TACMS BLK II, SSN: CA6101	215359	60576	49687	221308	252889	296046	303709	2534366	4315555
ATACMS BLK II Intial Spares, SSN: CA0270	1359	1362	0	0	0	0	0	0	2721

C. Acquisition Strategy: The BAT P3I system employs a sole source contract with the prime contractor, Northrop Grumman Corporation. Production cut-in of BAT P3I onto the ATACMS Block II will provide capability against moving and stationary armored targets.

<u>D. Schedule Profile</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Captive Flight Test (CFT)/Seeker Tests	1-4Q	1-4Q	1-4Q				
Hardware-in-the-Loop Testing	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-3Q	
Recoverable BAT Tests		1-4Q	1-4Q	1Q			
Engineering Development Tests (EDTs)		4Q		1Q			
Design Verification Tests			1Q				
Pre-Production Tests (PPTs)			1-3Q	2Q			
Munitions Verification Test		2Q					
Warhead LFT&E Soft/Target				2Q			
Software FQT		2-3Q					
Envir Stress Test (EST) Prod Qual Tests (PQT)		3Q					
DT System Tests (Block II)			4Q	3Q			
Blk II/P3I BAT Production Cut-In Decision				1Q			
Blk II/P3I BAT Operational Test (OT)-Armor				4Q	1Q		
MRL/TEL OT				4Q	1Q		
Blk II/P3I BAT Continued Production Decision					3Q		
Producibility/Cost Reduction Initiatives					1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Continuing Development Support	SS-CPIF	Northrop Grumman Corp	189761	46425		88608		121011		115975	561780	0
b . AMCOM Support	PO	RDEC Support*	17644	4804		4417		6235		11834	44934	0
c . Warhead Testing	SS-CPIF	TRW	2849	0		0		0		0	2849	0
d . Missile Integration Test	SS-CPIF	Lockheed	582	1710		6807		18246		20668	48013	0
e . Launcher Support	SS-CPIF	MLRS Launcher Pool	0	0		0		250		1375	1625	0
Subtotal:			210836	52939		99832		145742		149852	659201	0

Remarks: *Includes Hardware-in-the-Loop costs

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Sys Eng Tech Assist & Program Mgmt Spt	SS-CPFF		5020	1967		2100		3100		5370	17557	0
b . Misc Other Gov Act	PO		3284	239		887		1125		250	5785	0
Subtotal:			8304	2206		2987		4225		5620	23342	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Range Support	PO		1376	3550		2536		5720		16100	29282	0
b . Other Test Activities	PO		13988	6508		11524		24774		11661	68455	0
Subtotal:			15364	10058		14060		30494		27761	97737	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . In-House Support	PO		9698	2360		5918		9397		6058	33431	0
Subtotal:			9698	2360		5918		9397		6058	33431	0

Project Total Cost:			244202	67563		122797		189858		189291	813711	0
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