

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition
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COST (In Thousands)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	225241	128521	128026	112149	97579	75050	62027	18801	14465	1966045
D641 BAT	86123	17125	17006	0	0	0	0	0	0	1028410
D687 BAT P3I	56298	65458	81321	68889	45065	11318	5622	0	0	399655
D688 ATACMS BLK II	82820	41414	27528	14757	0	0	0	0	0	296576
D686 ATACMS BLK IIA	0	4273	0	28452	52440	63294	54887	18801	14465	236612
D2NT BAT Operational Test	0	251	2171	51	74	438	1518	0	0	4792

A. Mission Description and Budget Item Justification: The BAT is the submunition in the Block II missile system that supports the Army's deep fire doctrine calling for the destruction and disruption of threat forces and long range weapons at ranges in excess of 100 kilometers before they can influence the maneuver battle. In the past, the only options have been to engage these targets with attack helicopters or fixed wing aircraft. While effective, these options place critical resources and their air crews at risk. The BAT system significantly reduces this risk through its autonomous acquisition and terminal guidance capabilities to attack well-defended armored forces behind enemy lines. The BAT system includes the BAT submunition, a pre-planned product improvement (P3I) BAT submunition, the Army Tactical Missile System Block II (ATACMS BLK II) missile, and the ATACMS BLK IIA missile. BAT is a dual-sensor (acoustic and infrared) submunition that autonomously seeks out and destroys moving armored vehicles without human interaction. BAT and BAT P3I submunitions are carried deep into enemy territory by the two Army TACMS variants, then dispensed over a large target array to selectively attack and destroy individual targets. The BAT P3I program will improve the sensor and warhead subassemblies to increase lethality and to enable the BAT submunition to attack cold, stationary, armored targets and other critical high priority targets. 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 ATACMS BLK IIA missile is an extended range version of the ATACMS BLK II missile and will carry 6 BAT P3I submunitions out to ranges in excess of 200 kilometers.

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B. Program Change Summary	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (<u>FY 1999</u> PB)	229389	134858	160363	120582
Appropriated Value	237302	128858		
Adjustments to Appropriated Value				
a. Congressional General Reductions	-7913	-337		
b. SBIR / STTR	-5750			
c. Omnibus or Other Above Threshold Reductions	-1898			
d. Below Threshold Reprogramming	+3500			
e. Rescissions				
Adjustments to Budget Years Since <u>FY 1999</u> PB			-32337	-8433
Current Budget Submit (<u>FY 2000/2001</u> PB Submission)	225241	128521	128026	112149

Change Summary Explanation: FY 00/01 decreases due to slippage of Block IIA Program.

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D641
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COST (In Thousands)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D641 BAT	86123	17125	17006	0	0	0	0	0	0	1028410

A. Mission Description and Budget Item Justification: Project D641-BAT: The BAT submunition is an unpowered, aerodynamically stable vehicle approximately 36 inches long, 5.5 inches in diameter, and weighs 44 pounds. The BAT is an acoustic and infrared terminally guided submunition that searches for, tracks, and destroys moving armored combat vehicles. BAT submunitions are carried deep into enemy territory by a variant of the Army Tactical Missile System (ATACMS Block II), then dispensed over concentration of critical high-payoff targets to selectively attack and destroy individual targets. By using acoustic technology, BAT has the advantage of an extremely large footprint, which allows it to compensate for target location errors. Being a certified round, the Block II with BAT submunitions has a low sustainment cost.

- FY 1998 Accomplishments:**
- 40501 Conduct EMD Program.
 - 33822 Award Test Hardware Contract (THC) to build submunitions for Initial Operational Test and Evaluation (IOT&E)/Formal Live Fire Test (FLFT) Hardware Testing.
 - 9533 Support Carrier Flight Testing and Other Integration Activities
 - 2267 Conduct Test Range and Target Operation, Maintenance and Improvement
- Total 86123

- FY 1999 Planned Program:**
- 11556 Build hardware to support IOT&E/FLFT
 - 2890 Complete EMD program
 - 1900 Support Carrier Flight Testing and Other Integration Activities
 - 325 Conduct Test Range and Target Operation, Maintenance and Improvement
 - 454 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program
- Total 17125

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FY 2000 Planned Program:

- 10533 Support IOT&E/FLFT Qualification Tests
 - 2875 Conduct Formal Live Fire Tests
 - 2998 Conduct Integration Activities
 - 500 Conduct Test Range and Target Operation, Maintenance and Improvement
 - 100 Trade studies and system improvement and optimization activities
- Total 17006

FY 2001 Planned Program: Project not funded in FY 2001

B. <u>Other Program Funding Summary</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To Complete	Total Cost
Missile Procurement, Army CA 6100 BAT		100099	149254	136391	149481	224517	192901	198502	1105261	2256406

C. Acquisition Strategy: The BAT system is a sole source EMD program.

D. <u>Schedule Profile</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2004</u>	<u>FY 2005</u>
Complete Functional Configuration Audit (FCA)	4QTR*								
Complete CDT and PPVT	2QTR*								
Award Test Hardware Contract (THC)	3QTR*								
Block II/BAT LRIP DAB		2QTR							
Award LRIP I Contract		2QTR							
THC Qualification Tests			3QTR						
First THC Deliveries			3QTR						
LFT &E Tests Begin			4QTR						
IOT&E Tests Begin			4QTR						

* Milestone completed.

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ARMY RDT&E COST ANALYSIS (R-3)											DATE February 1999	
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition						PROJECT D641	
I. Product Development												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. Northrop Grumman Corp	SS/CPAF/ CPFF/CPFF/ FPIF	761967	14396		12931					789294		
b. RDEC Support		35897	497							36394		
Subtotal Product Development:		797864	14893		12931					825688		
II. Support Costs												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. Sys Eng Tech Assist & Program Mgmt Spt	SS/CPFF	60848	495							61343		
b. Misc Other Gov Act	PO	46937								46937		
Subtotal Support Costs:		107785	495							108280		
III. Test and Evaluation												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. Range Support	PO	22551	737		3600					26888		
b. Other Test	PO	15758			275					16033		
Subtotal Test and Evaluation:		38309	737		3875					42921		
IV. Management Services												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. In-House Support	PO	50321	1000		200					51521		
Subtotal Management Services:		50321	1000		200					51521		

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition				PROJECT D687		
COST (In Thousands)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D687 BAT P3I	56298	65458	81321	68889	45065	11318	5622	0	0	399655
<p>A. Mission Description and Budget Item Justification: Project D687-BAT P3I: The BAT P3I submunition maintains the Basic BAT length, diameter, and weight configurations. 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). BAT P3I submunitions are carried deep into enemy territory by variants of the Army Tactical Missile System (ATACMS), then dispensed over numerous high-payoff target concentrations to selectively attack and destroy individual targets. BAT P3I is intended to increase submunition lethality and expand the target set to be attacked. Being a certified round, the Block II and IIA missile carrying the BAT P3I submunition has a low sustainment cost. This program will incorporate new seeker, warhead, and microprocessor technologies into the current Basic BAT configuration while maintaining the current BAT form, fit and maximum commonality of BAT components. This program includes studies/demos pertaining to technology advancements, alternate carriers, target recognition, and acoustic/infrared/millimeter wave characterization of expanded target sets.</p> <p>FY 1998 Accomplishments:</p> <ul style="list-style-type: none"> • 45249 Continue System Development and P3I Program Definition & Risk Reduction (PDRR) Program • 4100 Award Test Hardware Contract to build submunitions for IOT&E/FLFT • 1831 Continue Simulation and Testing Program • 1626 Conduct Captive Flight Tests (CFTs) • 2047 Test Seekers in the Hardware-in-the-Loop Facility • 1445 Conduct Warhead Testing <p>Total 56298</p> <p>FY 1999 Planned Program:</p> <ul style="list-style-type: none"> • 37858 Complete P3I PDRR and start Continued Development Program • 17500 Procure Test Hardware • 4300 Conduct CFTs • 3200 Continue Hardware-in-the-Loop Seeker Assessments • 2400 Conduct Simulations and Algorithm Development • 200 Trade studies, CAIV initiatives, risk reduction and system improvement and optimization activities <p>Total 65458</p>										
Project D687			Page 7 of 20 Pages				Exhibit R-2A (PE 0604768A)			

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D687
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- FY 2000 Planned Program:**
- 31221 Continue P3I BAT Seeker Development and Design
 - 21000 Conduct CFTs, Recoverable Flight Tests, and Engineering Development Tests
 - 13900 Fabricate/Assemble Engineering Test Hardware
 - 7000 Complete Warhead Design, Integration and Testing
 - 3500 Continue Hardware-in-the-Loop Operations
 - 2500 Simulation Analysis and Modeling
 - 2000 Missile Carrier Integration
 - 200 Trade studies, CAIV initiatives, risk reduction and system improvement and optimization activities
- Total 81321

- FY 2001 Planned Program:**
- 28739 Continue Seeker Integration and System Testing
 - 15200 Complete Design and Fabricate P3I BAT Seeker Hardware
 - 13700 Conduct Engineering Design/Design Verification Tests
 - 4000 Continue Hardware-in-the-Loop Operations
 - 4000 Missile Carrier Integration
 - 3000 Simulation Analysis
 - 250 Trade studies, CAIV initiatives, risk reduction and system improvement and optimization activities
- Total 68889

B. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.

C. Acquisition Strategy: The BAT P3I system is a sole source to the prime contractor, Northrop Grumman Corporation. Production cut-in of P3I BAT on to Block II will provide full capability against all target sets except MRLs/TELS. P3I BAT on Block IIA will accommodate all required target sets.

D. Schedule Profile	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>
Captive Flight Test (CFT)	2QTR*	4QTR	2QTR	3QTR					
Continuous CFT (Seeker Tests)		2/3QTR	1/3QTR						
Warhead Testing	3/4QTR*	1-4QTR	1/2QTR						
Continue Dual Mode Radar Seeker Design	1-4QTR*	1-4QTR	1-4QTR						
Hardware-in-the-Loop Testing	4QTR*	1-4QTR	1-4QTR	1-4QTR	1-4QTR	1-4QTR			

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D687
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D. Schedule Profile	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Tactical Prototype Seeker Integration			2/3QTR						
Recoverable BAT Tests		4QTR	3/4QTR						
Engineering Development Tests (EDTs)			4QTR	1QTR					
Warhead LFT&E/Soft Target				2/3QTR					
Software CDR				2QTR					
Design Verification Tests				3/4QTR					
Envir Stress Test (EST) Prod Qual Tests (PQT)				4QTR	1QTR				
DT/OT System Tests (Block II)					2QTR				
Blk II/P3I BAT Production Cut-In Decision					3QTR				
Blk IIA/P3I BATs OTs							2QTR		
Blk IIA/P3I BAT LRIP								1QTR	

*Milestone completed.

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition					PROJECT D687		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Northrop Grumman Corp	SS-CPIF		95542	56314		60014		45261		36760	293891	
b. RDEC Support*	PO		9919	2200		3100		3000		5300	23519	
Subtotal Product Development:			105461	58514		63114		48261		42060	317410	
Remark: *Includes Hardware-in-the Loop costs												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Sys Eng Tech Assist & Program Mgmt Spt	SS-CPFF		2655	1065		1200		1200		3500	9620	
b. Misc Other Gov Act	PO		5074	315		425		550		1050	7414	
Subtotal Support Costs:			7729	1380		1625		1750		4550	17034	
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Range Support	PO		35	400		4900		8000		6500	19835	
b. Other Test Activities	PO		3578	2795		7599		7500		5450	26922	
Subtotal Test and Evaluation:			3613	3195		12499		15500		11950	46757	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. In-House Support	PO		5179	2369		4083		3378		3445	18454	
Subtotal Management Services:			5179	2369		4083		3378		3445	18454	
Project D687												
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ARMY RDT&E COST ANALYSIS (R-3)

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BUDGET ACTIVITY
5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE
0604768A Brilliant Anti-Armor (BAT) Submunition

PROJECT
D687

	Total PYs Cost	FY 1999 Cost		FY 2000 Cost		FY 2001 Cost		Cost To Complete	Total Cost	Target Value of Contract
Project Total Cost:	121982	65458		81321		68889		62005	399655	

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D688
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COST (In Thousands)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D688 ATACMS BLK II	82820	41414	27528	14757	0	0	0	0	0	296576

A. Mission Description and Budget Item Justification: Project D688-Army Tactical Missile System Block II: The Army Tactical Missile System Block II (ATACMS BLK II) is a ground launched, solid propellant, inertially guided Global Positioning System (GPS)-aided missile system with 13 BATs or P3I BATs as its payload. The mission of the ATACMS BLK II is to delay, disrupt, neutralize, or destroy armored combat vehicles and other critical high-payoff targets. Once the BAT P3I submunition is incorporated into the ATACMS BLK II, the target set will expand to include cold stationary armored combat vehicles. ATACMS BLK II will carry and dispense BAT and BAT P3I submunitions deep in enemy territory where these submunitions will autonomously track and destroy numerous critical high-payoff targets. ATACMS BLK II will be capable of being launched from the M270 with Improved Position Determining System (IPDS) and the M270A1 launcher. Funds also include costs of trade studies/demonstrations pertaining to technology advancements, payload variants, propulsion, guidance and control, and fire control improvements.

FY 1998 Accomplishments:

- 14000 Begin Pilot Production Line and Begin IOT&E Activities
 - 56268 Continue Development Including Submunition Integration
 - 8071 Complete Production Proveout Test (PPT) Flights /Begin Preproduction Qualification Test (PQT) Flights
 - 350 Conduct "Interim" Launcher Integration Tests
 - 4131 Continue Command and Control Software Design, Development and Test
- Total 82820

FY 1999 Planned Program:

- 26202 Continue Development and Subsystem Qualification
 - 7099 Continue pilot production line and IOT&E preparation activities
 - 4289 Complete PQT and conduct Dev Test/Op Test Flight Tests
 - 1073 Conduct M270A1 Launcher Integration Tests
 - 1451 Conduct C4I System Integration Tests
 - 1300 Continue Command and Control Software Design, Development and Test
- Total 41414

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D688
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- FY 2000 Planned Program:**
- 18204 Prepare for and conduct IOT&E
 - 4724 Complete missile and submunition integration activities and flight test of final configuration
 - 2100 Continue Command and Control Software Design, Development and Test
 - 2000 Complete Launcher Integration Tests
 - 500 Trade studies and system improvement and optimization activities
- Total 27528
- FY 2001 Planned Program:**
- 14107 Continue and complete IOT&E
 - 400 Continue Command and Control Software Design, Development and Test
 - 250 Trade studies and system improvement and optimization activities
- Total 14757

B. Funding Other Program Summary	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To Complete	Total Cost
Missile Procurement, Army CA 6105 ATACMS BLK II		48924	76787	91844	114817	149491	130146	118191	680529	1410729

B. Acquisition Strategy: The Army Tactical Missile System Block II is a sole source, performance specification program.

D. Schedule Profile	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>
Sled Test									
PDR									
CDR									
EDT Flight Test	1QTR*								
PPT Flight Tests	2/3QTR*								
PQT Flight Tests	4QTR*	1QTR							
DT/OT Flight Test Complete		2QTR							
Block II/BAT LRIP DAB		2QTR							
IOT&E Testing			3/4QTR	1QTR					

*Milestone Completed

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition					PROJECT D688		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. LMVS	SS/CPIF		164099	22335		3535		0			189969	
b. RDEC Support	PO		7012	746		1513		1450			10721	
Subtotal Product Development:			171111	23081		5048		1450			200690	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Sys Eng Tech Assist & Program Mgmt Spt	SS/CPFF		4177	1312		1330		1100			7919	
b. Misc OGA Activities	PO		9772	1755		1690		1324			14541	
Subtotal Support Costs:			13949	3067		3020		2424			22460	
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Range Support	PO		8381	4363		6776		2883			22403	
b. Other Test Activity	PO		5984	6555		9968		5073			27580	
Subtotal Test and Evaluation:			14365	10918		16744		7956			49983	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. In-House Support	PO		13452	4348		2716		2927			23443	
Subtotal Management Services:			13452	4348		2716		2927			23443	

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D688
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	Total PYs Cost	FY 1999 Cost		FY 2000 Cost		FY 2001 Cost		Cost To Complete	Total Cost	Target Value of Contract
Project Total Cost:	212877	41414		27528		14757			296576	

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D686
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COST (In Thousands)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D686 ATACMS BLK IIA	0	4273	0	28452	52440	63294	54887	18801	14465	236612

A. Mission Description and Budget Item Justification: The Army TACMS Block IIA (ATACMS Block IIA) will be a ground launched, solid propellant, inertially guided Global Positioning System (GPS) aided missile system with 6 BAT P3I submunitions as its payload. The mission of the ATACMS Block IIA will be to delay, disrupt, or destroy the Block II target sets plus cold stationary armored combat vehicles as well as moving and stationary surface-to-surface missile (SSM) transporter erector launchers (TELS) at extended ranges. The ATACMS Block IIA will be launched from the M270A1 launcher in response to the same Command and Control (C2) systems applicable to the Block I, Block IA, and Block II missiles. The range of the Block IIA missile will be significantly larger than the Block II.

FY 1998 Accomplishments: Project not funded in FY 1998

FY 1999 Planned Program:

- 4100 Scheduled for internal reprogramming to BAT, Project D641
- 173 Trade studies and system improvement and optimization activities
- Total 4273

FY 2000 Planned Program: Project not funded in FY 2000

FY 2001 Planned Program:

- 3420 Complete Milestone II decision and initiate EMD program
- 13232 Begin Preliminary Design Activities
- 9000 Conduct Submunition Integration Activities
- 2800 Conduct Test Range and Target Operation, Maintenance and Improvement
- Total 28452

B. <u>Other Program Funding Summary</u>	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost
Missile Procurement, Army CA 6110 Block IIA							16494	54889	545546	616929

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D686
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C. Acquisition Strategy: The Army Tactical Missile System Block IIA system will be acquired using a cost-plus contract with Lockheed Martin Vought Systems. A fixed-price-incentive type contract will be used for initial production followed by a firm-fixed price type contract for full rate production.

D. Schedule Profile	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Milestone II Decision				1QTR					
EMD Contract Award				2QTR					
PDR				4QTR					
CDR					4QTR				
EDTs and PPTs						2QTR			
PQT Flight Tests							1/2QTR		
DT/OT Flight Tests							3QTR		
IOT&E Flight Tests							4QTR	1QTR	
Block IIA LRIP Decision								1QTR	

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition					PROJECT D686		
I. Product Development												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. LMVS	SS/CPFF		4273				21417		141379	167069		
b. RDEC Support	PO						1034		2829	3863		
Subtotal Product Development:			4273				22451		144208	170932		
II. Support Costs												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. Sys Eng Tech Assist & Program Mgmt Spt	SS/CPFF						300		2704	3004		
b. Misc Other Gov Act							870		7860	8730		
Subtotal Support Costs:							1170		10564	11734		
III. Test and Evaluation												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. Range Support	PO						500		10135	10635		
b. Other Test Activities	PO						3060		32294	35354		
Subtotal Test and Evaluation:							3560		42429	45989		
IV. Management Services												
Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a. In-House Support	PO						1271		6686	7957		
Subtotal Management Services:							1271		6686	7957		
Project Total Cost:			4273				28452		203887	236612		
Remark: Majority of FY 99 funds will be internally reprogrammed to BAT, Project D641.												
Project D686												

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 1999
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D2NT
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COST <i>(In Thousands)</i>	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D2NT BAT Operational Test	0	251	2171	51	74	438	1518	0	0	4792

A. Mission Description and Budget Item Justification: Project D2NT finances the direct costs of planning and conducting operational testing and evaluation of the BAT submunition by the Operational Test and Evaluation Command (OPTEC). Operational testing is conducted under conditions, as similar as possible, to those encountered in actual combat with typical soldiers trained to employ the system. OPTEC provides the Army leadership with an independent test and evaluation of both the effectiveness and suitability of the system.

FY 1998 Accomplishments: Project not funded in FY 1998

FY 1999 Planned Program:

- 245 IOTE planning and preparation
 - 6 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
- Total 251

FY 2000 Planned Program:

- 2171 IOTE planning and preparation. Support IOTE tests.
- Total 2171

FY 2001 Planned Program:

- 51 IOTE planning and preparation
- Total 51

B. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.

C. Acquisition Strategy: Not applicable.

D. <u>Schedule Profile</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>
Planning and Preparation of IOT&E Activities		1QTR*	1QTR	1QTR	1QTR	1QTR	1QTR		

*Milestone completed

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ARMY RDT&E COST ANALYSIS (R-3)	DATE February 1999
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor (BAT) Submunition	PROJECT D2NT
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I. Product Development: Not applicable

II. Support Costs: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Other Test Activities	PO		289	251		2171		51		2030	4792	
Subtotal Test and Evaluation:			289	251		2171		51		2030	4792	

IV. Management Services: Not applicable.

Project Total Cost:			289	251		2171		51		2030	4792	
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