

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

February 2004

## BUDGET ACTIVITY

### 7 - Operational system development

## PE NUMBER AND TITLE

### 0203726A - Adv Field Artillery Tactical Data System

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		44959	28599	17994	17393	13021	11174	10550	Continuing	Continuing
322	ADV FA TAC DATA SYS/EFF CNTRL SYS (AFATDS/ECS)	40688	26704	17994	17393	13021	11174	10550	Continuing	Continuing
33C	IMPROVED POSITION AZIMUTH DETERMINING SYS (IPADS)	4271	1895	0	0	0	0	0	0	6166

**A. Mission Description and Budget Item Justification:** Fire support is the effects of lethal and nonlethal weapons (fires) that directly support land, maritime, amphibious, and special operation forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. Fire support coordination is the planning and execution of fires so that a suitable weapon or group of weapons adequately covers targets. The Advanced Field Artillery Tactical Data System (AFATDS) is the tool that performs automated fire support coordination for the Army, Navy, Air Force and Marine Corps.

The AFATDS provides Army, Navy and Marine Corps automated fire support command, control and communications. AFATDS pairs targets to weapons to provide maximum use of fire support assets. AFATDS automates the planning, coordinating and controlling of all fire support assets (field artillery, mortars, close air support, naval gunfire, attack helicopters, and offensive electronic warfare). AFATDS will perform the fire support Command, Control, and Coordination requirements at all echelons of field artillery and maneuver, from Echelons Above Corps to Battery or Platoon in support of all levels of conflict. The system is composed of Common Hardware/Software (CHS) employed in varying configurations at different operational facilities (or nodes) and unique system software interconnected by tactical communications in the form of a software-driven, automated network. AFATDS will automatically implement detailed commander's guidance in the automation of operational planning, movement control, targeting, target value analysis and fire support planning. This project is a replacement system for the Initial Fire Support Automated System, Battery Computer System and Fire Direction System. AFATDS will interoperate with the other Army Battle Command Systems, current and future Navy and Air Force Command and Control weapon systems, and the German, French, British, and Italian fire support systems. This system supports the Current-to-Future Force transition path of the Transformation Campaign Plan (TCP).

Improved Position Azimuth Determining System (IPADS) supports modernization of the Army's Field Artillery and Air Defense Artillery survey capabilities. This system supports Current-to-Future Force transition path of the Transformation Campaign Plan (TCP).

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PE NUMBER AND TITLE

**0203726A - Adv Field Artillery Tactical Data System**

<b><u>B. Program Change Summary</u></b>	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	44978	28917	22551
Current Budget (FY 2005 PB)	44959	28599	17994
Total Adjustments	-19	-318	-4557
Congressional program reductions		-271	
Congressional rescissions			
Congressional increases			
Reprogrammings	-19	-47	
SBIR/STTR Transfer			
Adjustments to Budget Years			-4557

FY05 funds realigned (\$4557K) to higher priority requirements.

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PE NUMBER AND TITLE  
**0203726A - Adv Field Artillery Tactical Data System**

PROJECT  
**322**

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
322	ADV FA TAC DATA SYS/EFF CNTRL SYS (AFATDS/ECS)	40688	26704	17994	17393	13021	11174	10550	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** Fire support is the effects of lethal and nonlethal weapons (fires) that directly support land, maritime, amphibious, and special operation forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. Fire support coordination is the planning and execution of fires so that a suitable weapon or group of weapons adequately covers targets. The Advanced Field Artillery Tactical Data System (AFATDS) is the tool that performs automated fire support coordination for the Army, Navy, Air Force, and Marine Corps.

The AFATDS provides Army, Navy and Marine Corps automated fire support command, control and communications. AFATDS perform the attack analysis necessary to determine the optimal weapon target pairing to provide maximum use of the fire support assets. AFATDS will automatically implement detailed commander's guidance in the automation of operational planning, movement control, targeting, target value analysis and fire support planning. This project is a replacement system for the Initial Fire Support Automated System, Battery Computer System and Fire Direction System. AFATDS will interoperate with the other Army Battle Command Systems, current and future Navy and Air Force Command and Control weapon systems, and the German, French, British, and Italian fire support systems. AFATDS automates the planning, coordinating and controlling of all fire support assets in the Joint battlespace (field artillery, mortars, close air support, naval gunfire, attack helicopters, and offensive electronic warfare). AFATDS will perform the Fire Support Command, Control, and Coordination requirements at all echelons of field artillery and maneuver, from Echelons Above Corps to Battery or Platoon in support of all levels of conflict. The system is composed of Common Hardware/Software employed in varying configurations at different operational facilities (or nodes) and unique system software interconnected by tactical communications in the form of a software-driven, automated network. This system supports the Current-to-Future Force transition path of the Transformation Campaign Plan (TCP).

<b>Accomplishments/Planned Program</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>
Prepare and Support AFATDS Version 6.4 Test and Materiel Release	2999	5568	1242
Army Battle Command System (ABCS) System Engineering and Integration Efforts.	642	0	0
Continue AFATDS Version 6.3, AFATDS Version 6.4 and subsequent software effort.	37047	20390	16752
Small Business Innovative Research/Small Business Technology Transfer Program	0	746	0
<b>Totals</b>	<b>40688</b>	<b>26704</b>	<b>17994</b>

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System

PROJECT  
322

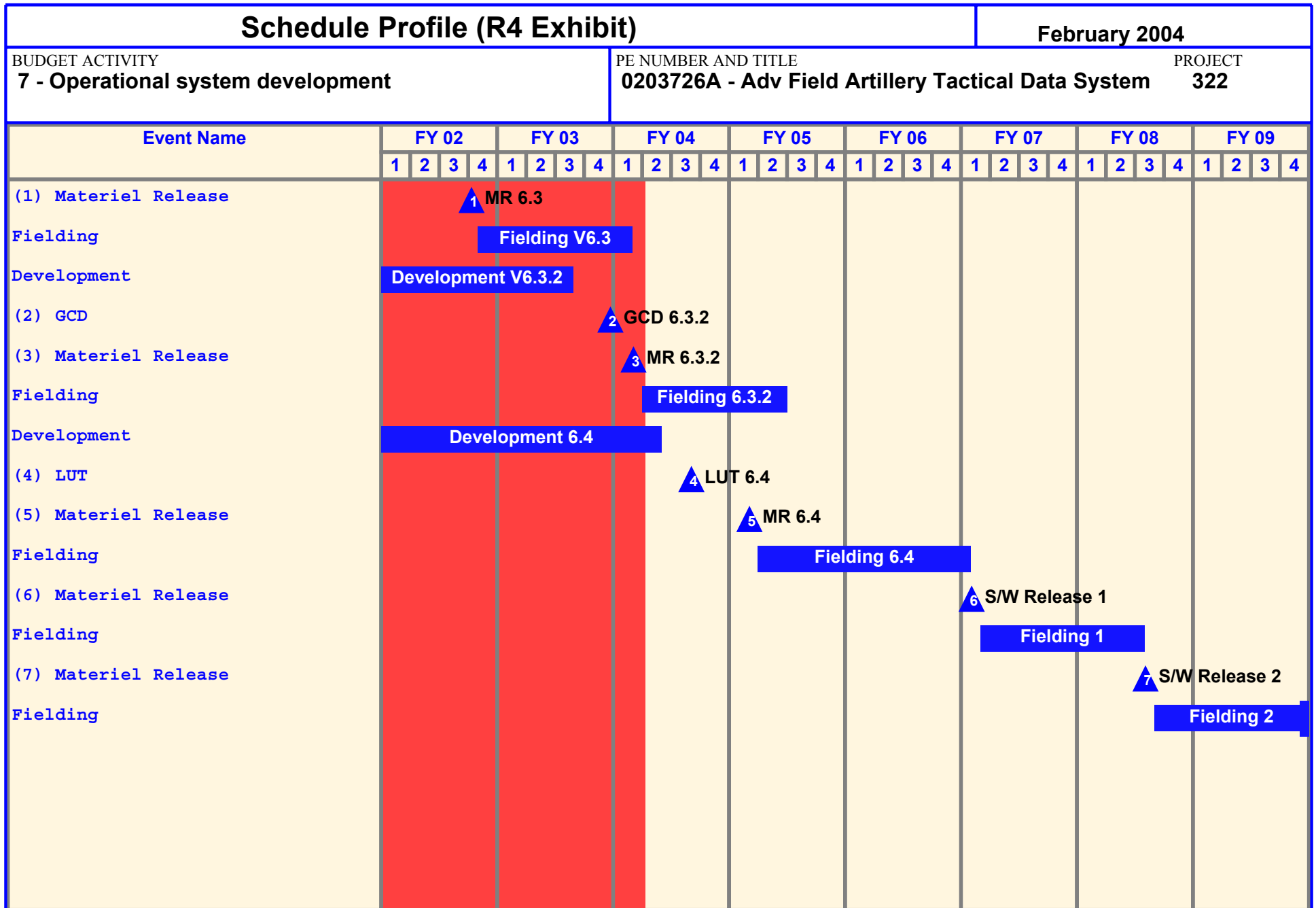
## B. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA (B28600)	75134	23349	26922	33697	16834	12658	11860	Continuing	Continuing
Spares (BS9708)	2437	2536	96	100	100	0	0	Continuing	Continuing
Mod Of In Service Equip (B28620)	2895	2044	3990	5104	5460	6045	8454	Continuing	Continuing

C. Acquisition Strategy: AFATDS have been fielded since 1996, with the original AFATDS Version 96 Materiel Release. It has been updated with subsequent releases reflecting the Spiral development strategy of the program. AFATDS Version 6.3.2 will be released January 2004, and AFATDS Version 6.4.0 is planned for December 2004. Future releases will include continuing joint and operational requirements resulting from Operation Iraq Freedom, Operation Enduring Freedom and future operational experience.

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY <b>7 - Operational system development</b>					PE NUMBER AND TITLE <b>0203726A - Adv Field Artillery Tactical Data System</b>					PROJECT <b>322</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 . Software Development	CPAF	Raytheon Systems Corp, Ft. Wayne, IN	142847	33975	2Q	18897	2Q	13827	2Q	Continue	Continue	0
b . ABCS System Engineering & Integration Efforts	PWD	PEO C3T, Ft Monmouth, NJ	4748	642	2Q	0		0		Continue	Continue	0
c . Peculiar Support Equipment (PSE)	C/FFP	General Dynamics, Taunton, MA	3293	600	2Q	374	2Q	380	2Q	Continue	Continue	0
Subtotal:			150888	35217		19271		14207		Continue	Continue	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
a . Software Development Support	MIPR	CECOM, Ft. Monmouth, NJ & Telos, Shrewsbury, NJ	3666	813	2Q	708	2Q	616	2Q	Continue	Continue	0
b . Engineering Support	MIPR	CECOM, Ft Monmouth, NJ	2086	933	2Q	622	2Q	791	2Q	Continue	Continue	0
Subtotal:			5752	1746		1330		1407		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 7 - Operational system development					PE NUMBER AND TITLE 0203726A - Adv Field Artillery Tactical Data System					PROJECT 322		
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 Management		PM IE, Ft. Monmouth, NJ	450	135	2Q	138	2Q	140	2Q	Continue	Continue	0
b . Test Support	MIPR	Titan, Ft Sill, OK and Various	2999	1495	2Q	1100	2Q	695	2Q	Continue	Continue	0
c . Limited User Test	MIPR	Army Test & Evaluation Command	0	0		3000	2-3Q	0		Continue	Continue	0
Subtotal:			3449	1630		4238		835		Continue	Continue	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 . PM Support	T&M	CSC, Eatontown, NJ	2689	730	2Q	685	2Q	509	2Q	Continue	Continue	0
b . Program Management		PM IE, Ft Monmouth, NJ	4718	1365	2Q	1180	2Q	1036	2Q	Continue	Continue	0
Subtotal:			7407	2095		1865		1545		Continue	Continue	0
Project Total Cost:			167496	40688		26704		17994		Continue	Continue	0



Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY <b>7 - Operational system development</b>			PE NUMBER AND TITLE <b>0203726A - Adv Field Artillery Tactical Data System</b>				PROJECT <b>322</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>
Government Confidence Demonstration		1Q					
Materiel Release 6.3.2		1Q					
AFATDS Version 6.4 Limited User Test (LUT)		4Q					
AFATDS Version 6.4 Materiel Release			1Q				
Maintenance Software Release 1					1Q		
Maintenance Software Release 2						3Q	



<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>0203726A - Adv Field Artillery Tactical Data System</b>	PROJECT <b>33C</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
33C IMPROVED POSITION AZIMUTH DETERMINING SYS (IPADS)	4271	1895	0	0	0	0	0	0	6166

**A. Mission Description and Budget Item Justification:** This project element supports modernization of the Army's Field Artillery survey capabilities. The current Position & Azimuth Determining System (PADS) was fielded in the early 1980s with 1970s technology. Poor Reliability (84 hours Mean Time Between Failure) and obsolete technology have resulted in a system that is no longer economically supportable. PADS inventory has begun to diminish through attrition. The Improved Position Azimuth Determining System (IPADS) is a Nondevelopmental Item (NDI) that will leverage present day technology, substantially improve reliability, and provide a digital communications capability to meet the needs of the Army of the Future. IPADS will provide a state of the art system with a Reliability that will exceed 2000 hours Mean Time Between System Abort which will save millions in operations and support costs, while preserving continued operational capability. This is a Joint Program with the USMC.

This system supports the Current to Future transition path of the Transformation Campaign Plan.

<b>Accomplishments/Planned Program</b>	FY 2003	FY 2004	FY 2005
IPADS SDD Contract for a Nondevelopmental Item	964	0	0
Program Management	269	250	0
Conduct developmental and operational testing	2277	1092	0
Engineering/Logistics Support	761	498	0
Small Business Innovative Research/Small Business Technology Transfer Programs	0	55	0
<b>Totals</b>	<b>4271</b>	<b>1895</b>	<b>0</b>

<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>0203726A - Adv Field Artillery Tactical Data System</b>	PROJECT <b>33C</b>
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<b>B. Other Program Funding Summary</b>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA-2 Improved Position & Azimuth Determining System (IPADS) - SSN M75700	1961	11045	0	0	0	0	0	0	13006

**C. Acquisition Strategy:**The IPADS program is an NDI being procured to a Performance Specification. The acquisition strategy will be a Firm Fixed Price Requirements Contract. IPADS SDD Test Articles will be used for operational testing. The AAO for IPADS is 357.

# ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY

**7 - Operational system development**

PE NUMBER AND TITLE

**0203726A - Adv Field Artillery Tactical Data System**

PROJECT

**33C**

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 . SDD Contract for Nondevelopmental Item	FFP	L3 Communications, Budd Lake, NJ	0	964	4Q	0		0		0	964	0
b . Matrix Engineering Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	761	1-4Q	498	1-3Q	0		0	1259	0
Subtotal:			0	1725		498		0		0	2223	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
a . Program Management	MIPR	JPMO LW155, Picatinny Arsenal, NJ	0	269	1Q	250	1-2Q	0		0	519	0
Subtotal:			0	269		250		0		0	519	0

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 7 - Operational system development					PE NUMBER AND TITLE 0203726A - Adv Field Artillery Tactical Data System					PROJECT 33C		
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 . Developmental and Operational Testing	MIPR	Yuma Proving Grounds, AZ	0	2277	3-4Q	1147	1-2Q	0		0	3424	0
Subtotal:			0	2277		1147		0		0	3424	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
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			0	4271		1895		0		0	6166	0

Schedule Profile (R4 Exhibit)																February 2004																				
BUDGET ACTIVITY 7 - Operational system development								PE NUMBER AND TITLE 0203726A - Adv Field Artillery Tactical Data System												PROJECT 33C																
Event Name	FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10							
	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	2	3	4				
(1) Procure Test Articles				1																																
DT&E																																				
OT																																				
Independent Evaluation Report																																				
(2) MS C																																				
(3) FUE																																				

Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY <b>7 - Operational system development</b>			PE NUMBER AND TITLE <b>0203726A - Adv Field Artillery Tactical Data System</b>			PROJECT <b>33C</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>
Procure Test Articles	4Q						
Product Verification/Developmental Test	4Q	1-2Q					
Operational Test		2Q					
Independent Evaluation Report		2-3Q					
Type Classification		3Q					
First Unit Equipped		4Q					