

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

February 2002

**BUDGET ACTIVITY**  
**7 - Operational system development**

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

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	35420	36650	38161	22683	6942	45462	41082	0	322760
322 ADV FA TAC DATA SYS/EFF CNTRL SYS (AFATDS/ECS)	35420	36650	33691	22285	6942	45462	41082	0	317892
33C IMPROVED POSITION AZIMUTH DETERMINING SYS (IPADS)	0	0	4470	398	0	0	0	0	4868

**A. Mission Description and Budget Item Justification:** The Advanced Field Artillery Tactical Data System (AFATDS) will broaden and modernize the US Army fire support command, control and communications (C3) system. As a part of the Army Battle Command System (ABCS) architecture, AFATDS will provide automated fire support, fire planning and the coordination and employment of all service/combined fire support assets to complement the commander's scheme of maneuver. AFATDS will accomplish this by providing fully automated support for planning, coordination and control of all fire support assets (mortars, close air support, naval gunfire, attack helicopters, offensive electronic warfare, field artillery cannons, rockets and guided missiles) in the execution of close support, counterfire, interdiction, suppression of enemy air defense and deep operations. 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 Tactical Fire Direction System (TACFIRE) and the Initial Fire Support Automated System (IFSAS). The AFATDS supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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<u><b>B. Program Change Summary</b></u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	36471	36969	33922
Appropriated Value	36816	36969	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-319	0
b. SBIR / STTR	-1058	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-338	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	4239
Current Budget Submit (FY 2003 PB )	35420	36650	38161

FY03 Increase is attributed to addition of Project 33C Improved Position Azimuth Determining System (IPADS).

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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
322	ADV FA TAC DATA SYS/EFF CNTRL SYS (AFATDS/ECS)	35420	36650	33691	22285	6942	45462	41082	0	317892

**A. Mission Description and Budget Item Justification:** Project D322 - AFATDS Development: The project is composed of Army Battlefield Command System (ABCS) 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. Both hardware and software will be capable of being tailored to perform the fire support command, control, and coordination requirements at any level of command. This will permit variable command and control relationships and full fire support functionality at all echelons of field artillery and maneuver, from echelons above corps to battery or platoon in support of all levels of conflict. The Marine Corps will also utilize AFATDS. AFATDS will interoperate with Navy and Air Force Command and Control weapon systems as well as the Allied fire support systems ADLER (Germany), ATLAS (France), BATES (UK), and SIR (Italy).

**FY 2001 Accomplishments:**

- 2108 Support Test and Materiel Release of AFATDS '99 Software
- 33312 Continue AFATDS '99 and begin AFATDS '99+ and AFATDS Version 7 software development in support of Fire Support and ABCS functionality development to include FDD/FDC.

Total 35420

**FY 2002 Planned Program**

- 2780 Prepare for Test and Materiel Release of AFATDS Version 7 Software
- 33870 Continue AFATDS '99+ and AFATDS Version 7 software development in support of Fire Support and ABCS functionality development to include FDC.

Total 36650

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**322**

**FY 2003 Planned Program**

- 2910 Support Test and Materiel Release of AFATDS Version 7 Software
- 578 ABCS System Engineering and Integration Efforts.
- 30203 Complete AFATDS Version 7 software development and start AFATDS Version 8 software development in support of Fire Support and ABCS functionality development.

Total 33691

<b><u>B. Other Program Funding Summary</u></b>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
OPA (B28600)	68590	49096	74723	53234	47066	50435	25566	67692	480258
Spares (BS9708)	2190	2798	2421	2605	2338	2698	0	0	17420
MOD IN SERVICE EQUIP (B28620)	0	0	2976	2968	0	0	0	0	5944

**C. Acquisition Strategy:** AFATDS software will be developed in incremental releases. AFATDS '96, which received Materiel Release on 13 December 1996, automated 51% of the required tasks including fire support planning, target nomination, order of fire, and meteorological/survey operations. Subsequent releases add additional functions, providing automated capabilities for the required tasks including fire support sensor planning and additional munitions. Completion of AFATDS Version 10 will result in automation of all required functionality, as currently defined, including full fire support planning, target acquisition support, and field artillery mission support. Additionally, the AFATDS software will utilize the Joint Common Operating Environment (JCOE) and the Joint Technical Architecture.

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<u>D. Schedule Profile</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>	<u>FY 2007</u>
AFATDS '98 Materiel Release							
AFATDS '99 Limited User Test (LUT)	2Q						
AFATDS '99 Materiel Release		2Q					
AFATDS Version 7 LUT			1Q				
AFATDS Version 7 Materiel Release			3Q				
AFATDS Version 8 LUT				3Q			
AFATDS Version 8 Materiel Release					1Q		
AFATDS Version 9 LUT						1Q	
AFATDS Version 9 Materiel Release						3Q	
AFATDS Version 10 LUT							3Q

## ARMY RDT&E COST ANALYSIS(R-3)

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**PROJECT**  
**322**

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 . Software Development	SS/CPAF	Raytheon Systems Corp, Ft. Wayne, IN	83149	30554	2Q	32380	2Q	29068	2Q	100737	275888	0
b . ABCS System Engineering & Integration Efforts	MIPR	DISA/ATCCS/PEO C3S, NJ	2582	1524	2Q	0		578	2Q	0	4684	0
c . Peculiar Support Equipment (PSE)	C/FFP	Litton, San Diego, CA and General Dynamics, Taunton, MA	2287	390	2Q	510	2Q	475	2Q	2850	6512	0
<b>Subtotal:</b>			88018	32468		32890		30121		103587	287084	0

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 . Software Development Support	MIPR	CECOM, NJ	800	120	2Q	236	2Q	375	2Q	1409	2940	0
b . Software Development Support	MIPR	FSSSED, Ft. Sill, OK and TELOS, Shrewsbury, NJ	1649	318	2Q	482	2Q	375	2Q	1409	4233	0
c . Engineering Support	MIPR	CECOM, NJ	1099	337	2Q	305	2Q	282	2Q	704	2727	0

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II. Support Cost (continued)	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
Subtotal:			3548	775		1023		1032		3522	9900	0

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 . Test Management	MIPR	CECOM, NJ	205	110	2Q	115	2Q	120	2Q	1911	2461	0
b . Test Support	MIPR	Various	763	663	2Q	1030	2Q	1000	2Q	1911	5367	0
Subtotal:			968	773		1145		1120		3822	7828	0

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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 . PM Support	C/CPFF	CSC, NJ	1379	345	2Q	325	2Q	400	2Q	1917	4366	0
b . PROGRAM MANAGEMENT	MIPR	Various	2447	1059	2Q	1267	2Q	1018	2Q	2923	8714	0
Subtotal:			3826	1404		1592		1418		4840	13080	0
Project Total Cost:			96360	35420		36650		33691		115771	317892	0

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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
33C IMPROVED POSITION AZIMUTH DETERMINING SYS (IPADS)	0	0	4470	398	0	0	0	0	4868

**A. Mission Description and Budget Item Justification:** This program element supports modernization of the Army's Field Artillery and Air Defense 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 has resulted in a system that is no longer economically supportable. The IPADS is a new start program that will leverage technology advances, 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.

**FY 2003 Planned Program**

- 1700 Procure test articles (Qty 8)
- 2000 Conduct Product Verification and Operational testing
- 770 Conduct Independent Evaluation, Begin Evaluation Report, and Perform Management Actions.

Total 4470

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**33C**

<u>B. Other Program Funding Summary</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>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
OPA-2 Improved Position & Azimuth Determining System (IPADS)	0	480	2015	9279	12581	12557	7827	0	44739

**C. Acquisition Strategy:** The IPADS program is an NDI being procured to a Performance Specification. The acquisition strategy will be a multi-year IDIQ Firm Fixed Price effort.

<u>D. Schedule Profile</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>	<u>FY 2007</u>
Procure Test Articles			1Q				
Product Verification/Developmental Test			4Q				
Operational Test			4Q				
Independent Evaluation Report				1Q			
Type Classification				2Q			
First Unit Equipped				4Q			

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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 . Test Article Procurement (Qty 8)	IDIQ/FFP	TACOM - RI, Rock Island, IL	0	0		0		1700	1Q	0	1700	1700
Subtotal:			0	0		0		1700		0	1700	1700

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 . Contract Management	MIPR	TACOM - RI, Rock Island, IL	0	0		0		40	1Q	0	40	0
b . System Eng & QA	MIPR	TACOM - ARDEC, Rock Island, IL	0	0		0		249	1Q	0	249	0
c . Logistics Management	MIPR	TACOM - RI, Rock Island, IL	0	0		0		100	1Q	0	100	0
Subtotal:			0	0		0		389		0	389	0

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**33C**

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 . Environmental Test	MIPR	Aberdeen Proving Ground, MD	0	0		0		400	3-4Q	0	400	0
b . Accuracy Test	MIPR	Fire Spt Test Dir., Ft. Sill, OK	0	0		0		250	3-4Q	0	250	0
c . Reliability Test	MIPR	Fire Spt Test Dir., Ft. Sill, OK	0	0		0		600	3-4Q	0	600	0
d . Air Drop Test	MIPR	Abn Test Dir., Ft. Bragg, NC	0	0		0		200	3-4Q	0	200	0
e . Aviation Operation Test	MIPR	Aviation Test Dir., Ft. Rucker, AL	0	0		0		550	3-4Q	0	550	0
f . Independent Evaluation	MIPR	Army Test & Eval Ctr., Alexandria, VA	0	0		0		175	3-4Q	398	573	0
Subtotal:			0	0		0		2175		398	2573	0

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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 . Program Management	MIPR	TACOM - RI, Rock Island, IL	0	0		0		206	1Q	0	206	0
Subtotal:			0	0		0		206		0	206	0
Project Total Cost:			0	0		0		4470		398	4868	1700