

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

February 2002

BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - Eng							
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	15857	17088	26978	26672	30812	31202	67585	0	236042
126 FAAD C2 ED	7880	6096	10522	12113	10921	12665	40239	0	115065
146 AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	7977	10992	16456	14559	19891	18537	27346	0	120977

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides critical, automated threat aircraft, cruise missile and unmanned aerial vehicle (UAV) Battle Management/Command, Control, Communications, Computers and Intelligence (BM/C4I) information to support the planning and decision process at various levels of command. The mission is to collect, digitally process and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons [Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and combined arms]. Unique FAAD C2I software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Tactical Information and Data System (JTIDS), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting Systems (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by providing an integrated air picture at Army divisions and below. FAAD C2I is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the Interim Brigade Combat Teams (IBCTs).

The Air and Missile Defense Planning and Control System (AMDPCS) is the backbone of Army Air Defense through the BM/C4I capability it provides to Air Defense Artillery Brigades at corps and echelons above corps (EAC), the Army Air and Missile Defense Commands (AAMDC) headquarters, and joint force command and control elements, such as the Battlefield Coordination Detachment (BCDs). The AMDPCS provides ADA Brigades with a fire control system via the Air Defense System Integrator (ADSI) for monitoring and controlling air battle engagement operations by subordinate battalions. The AMDPCS provides a common air and missile defense staff planning and battlespace situational awareness tool via the Air and Missile Defense Workstation (AMDWS) to achieve the common tactical and operational air picture. The AMDWS, like ADSI, will be fielded to air and missile defense units at all echelons of command, battery through theater. The AMDPCS provides the ABCS architecture, Army AMD Transformation and the Army AMD Task Forces (AMDTF) with Joint BM/C4I capability and the Army component of interoperable Joint Theater Air and Missile Defense (JTAMD) BM/C4I. The AMDPCS enables Active, Passive and Attack Operations coordination and a correlated single integrated air picture (SIAP) to Army AMD and Joint Forces.

These systems support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

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<u>B. Program Change Summary</u>	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	16310	18233	17355
Appropriated Value	16462	17233	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-145	0
b. SBIR / STTR	-454	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	-151	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	9623
Current Budget Submit (FY 2003 PB)	15857	17088	26978

FY02 decrease is the net result of a \$2.2M decrease for excess growth and a \$1.2M increase for ADAD for Avenger (HAC).

FY03 increase (\$9.623M) attributed to additional developmental and test requirements for both Block III and AMDWS software.

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BUDGET ACTIVITY 5 - Engineering and manufacturing development	PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - En	PROJECT 126
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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
126 FAAD C2 ED	7880	6096	10522	12113	10921	12665	40239	0	115065

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides critical, automated threat aircraft, cruise missile and unmanned aerial vehicle (UA V) Battle Management/Command, Control, Communications, Computers and Intelligence (BM/C4I) information to support the planning and decision process at various levels of command. The mission is to collect, digitally process and disseminate real time target cueing and tracking information, common tactical air picture, and C2I information to all Short Range Air Defense (SHORAD) weapons [Avenger, Bradley Linebacker, Manportable Air Defense System (MANPADS), joint and combined arms]. Unique FAAD C2I software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Tactical Information and Data System (JTIDS), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting Systems (EPLRS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Sentinel and the Army Battle Command System (ABCS) architecture. Provides joint C2 interoperability and horizontal integration with PATRIOT, THAAD, MEADS, JLENS and SHORAD weapon systems by providing an integrated air picture at Army divisions and below. FAAD C2I is the first system to digitize for Army Transformation in the First Digitized Division (FDD), III (Digitized) Corps, the Joint Contingency Force (JCF) and the Interim Brigade Combat Teams (IBCTs). This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 5000 Continue Block III software engineering and development for Second Digital Division (SDD), IBCTs, III Corps, FFCB2 co-host, and minimum BVRE capabilities.
 - 2584 Continue ABCS FFCB2 and CHS integration and testing for Active and Reserve Army requirements; conduct digitization integration with FDD for DCX II, III (Digitized) Corps, IBCTs in conjunction with Army Transformation.
 - 100 Complete Critical Design Review for Block III, III (Digitized) Corps and SDD.
 - 196 ABCS SE&I
- Total 7880

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126**FY 2002 Planned Program**

- 4656 Continue Block III software engineering and development for FDD DCX2, III (Digitized) Corps, IBCTs and SDD.
- 1440 Continue ABCS, FBCB2 and CHS integration and testing for Active and Reserve Army requirements; continue digitization integration for FDD, III (Digitized) Corps, SDD and IBCTs in support of Army Transformation.

Total 6096

FY 2003 Planned Program

- 6638 Continue Block III software engineering and development for III (Digitized) Corps, IBCTs and SDD
- 3734 Continue ABCS, FBCB2 and CHS integration and testing for Active and Reserve Army units; continue digitization integration for III (Digitized) Corps and IBCTs in support of Army Transformation and SW security accreditation.
- 150 ABCS SE&I

Total 10522

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<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>
RDTE 64820.DE10 - Sentinel GBS	12911	5119	0	0	0	0	0	0	23090
OPA 2, WK5053 - Sentinel GBS	23944	1872	31	0	0	0	0	0	74145
OPA 2, WK5057 - Sentinel MODS	0	31442	26519	18362	14202	14361	14492	Continuing	Continuing
OPA 2, AD5050 - FAAD C2	32088	8832	24779	34986	32883	34611	37344	Continuing	Continuing
OPA 2, AD5090 - Mods FAAD C2	0	0	0	0	0	0	0	0	7770
OPA 2, AD5070 - Air and Missile Defense	4779	10220	9750	13220	6172	7057	28857	Continuing	Continuing
Spares (BS9702) - FAAD C2	487	460	558	752	765	899	917	Continuing	Continuing
Spares (BS9732) - Sentinel GBS	1595	2036	0	0	0	0	0	0	7472

C. Acquisition Strategy: The acquisition strategy relies heavily on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies. The concept of evolutionary software development is being followed and will be accomplished in Blocks I, II, III and IV. Blocks I and II have been completed. FAAD C2 Block III is currently being developed for both the Army's Active and Reserve components.

<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>
Preliminary/Critical Design Review	3Q		1Q		3Q		
System Certification Test	3Q		3Q			4Q	
First Unit Equipped - Objective System						3Q	
Contract Award, BLK IV							3Q

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 . TRW, BLK I	C/CPIF	Dominquez Hills, CA	176461	0		0		0		0	176461	0
b . TRW, BLK II	SS/CPIF	Dominquez Hills, CA	32206	0		0		0		0	32206	0
c . TRW, BLK III	SS/CPIF	Dominquez Hills, CA	52751	4815	1Q	4656	1Q	6638	1Q	Continue	Continue	0
d . TRW	SS/T&M	Dominquez Hills, CA	6317	320	1Q	254	1Q	857	1Q	Continue	Continue	0
e . Matrix (RDEC)	MIPR	Huntsville, AL	6288	1315	2Q	360	2Q	1096	2Q	Continue	Continue	0
f . Sentinel GBS	MIPR	Huntsville, AL	3791	0		0		0		0	3791	0
g . CECOM	MIPR	Ft. Monmouth, NJ	1200	0		0		0		Continue	Continue	0
h . JTIDS	MIPR	Ft. Monmouth, NJ	6000	0		0		0		Continue	Continue	0
i . In-house/Govt Spt	Various	Various	12207	994	2Q	441	2Q	1295	2Q	Continue	14937	0
j . ABCS SE&I	MIPR	Ft Monmouth, NJ	0	196	1Q	0		150	1Q	0	346	0
Subtotal:			297221	7640		5711		10036		Continue	Continue	0

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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 . SETA	Various	Huntsville, AL	11029	0		195	1-4Q	199	1-4Q	Continue	Continue	0
Subtotal:			11029	0		195		199		Continue	Continue	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 . ADATD	MIPR	Ft Bliss, OK	10016	25	1Q	50	2Q	91	2Q	Continue	Continue	0
b . RTTC	MIPR	WSMR, NM	2000	215	2Q	140	2Q	196	2Q	Continue	Continue	0
Subtotal:			12016	240		190		287		Continue	Continue	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
			0	0		0		0		0	0	0
Subtotal:												

Remarks: Not Applicable

Project Total Cost:			320266	7880		6096		10522		Continue	Continue	0
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BUDGET ACTIVITY 5 - Engineering and manufacturing development		PE NUMBER AND TITLE 0604741A - Air Defense Command, Control and Intelligence - En						PROJECT 146		
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	
146 AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	7977	10992	16456	14559	19891	18537	27346	0	120977	

A. Mission Description and Budget Item Justification: The Air and Missile Defense Planning and Control System (AMDPCS) is the backbone of Army Air Defense through the Battle Management Command, Control, Communications, Computers and Intelligence (BM/C4I) capability it provides to Air Defense Artillery Brigades at corps and echelons above corps (EAC), the Army Air and Missile Defense Commands (AAMDC) headquarters, and joint force command and control elements, such as the Battlefield Coordination Detachment (BCDs). The AMDPCS provides ADA Brigades with a fire control system via the Air Defense System Integrator (ADSI) for monitoring and controlling air battle engagement operations by subordinate battalions. The AMDPCS provides a common air and missile defense staff planning and battlespace situational awareness tool via the Air and Missile Defense Workstation (AMDWS) to achieve the common tactical and operational air picture. The AMDWS, like ADSI, will be fielded to air and missile defense units at all echelons of command, battery through theater. The AMDPCS provides the ABCS architecture, Army AMD Transformation and the Army AMD Task Forces (AMDTF) with Joint BM/C4I capability and the Army component of interoperable Joint Theater Air and Missile Defense (JTAMD) BM/C4I. The AMDPCS enables Active, Passive and Attack Operations coordination and a correlated single integrated air picture (SIAP) to Army AMD and Joint Forces.

FY 2001 Accomplishments:

- 4075 Continue AMDWS software engineering and development for FDD, III (Digitized) Corps, ABCS, AMD family of systems (PATRIOT, THAAD, MEADS, JLENS, Joint Services)
 - 2408 Continue AMDWS and ADSI Software Certification Testing; Continue Army and Joint Integration and Interoperability Assessments
 - 1347 Conduct AMDPCS sheltered subsystems configuration engineering and development
 - 147 ABCS SE&I
- Total 7977

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FY 2002 Planned Program

- 5313 Continue AMDWS software engineering and development for FDD, III (Digitized) Corps, SDD, AMD family of systems, JTAMD family of systems (FOS), JTAMD FOS integration
- 2470 Conduct ADSI software engineering and development for III (Digitized) Corps, AMD (FOS), JTAMD FOS integration
- 772 Continue software systems certification testing; continue Army and Joint integration and interoperability assessments
- 2230 Continue AMDPCS sheltered subsystems configuration engineering and development, SIAP concept analysis; SIAP concept and analysis
- 207 ABCS SE&I

Total 10992

FY 2003 Planned Program

- 10004 Continue AMDWS software engineering and development for III (Digitized) Corps, SDD, AMD FOS, JTAMD FOS integration and development of AMDPCS Brigade Sheltered Subsystems for III Corps.
- 2080 Continue ADSI software engineering and development for III (Digitized) Corps, SDD, AMD FOS, JTAMD FOS integration
- 805 Continue software systems certification testing; continue Army and Joint integration and interoperability assessments
- 3302 Continue AMDPCS sheltered subsystems configuration engineering, development, test and evaluation; SIAP engineering and analysis
- 265 ABCS SE&I

Total 16456

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B. Other Program Funding Summary

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA, AD 5070 - AMDPCS	4779	10220	9750	13220	6172	7057	28857	Continuing	Continuing

C. Acquisition Strategy: The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies. The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades. AMDPCS is being developed for both the Army's Active and Reserve components.

D. Schedule Profile

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Systems Certification Testing - AMDWS/ADSI/AMDPCS	3Q	4Q	4Q	4Q			4Q
AMDWS Software Release	3Q	3Q	3Q		4Q		4Q
AMDWS Software Certification	2-4Q	3-4Q	3-4Q			2-4Q	
ADSI Software Release		3Q		3Q		3Q	
ADSI Software Certification	1-3Q		1-3Q		1-3Q	3Q	1-3Q
AMDPCS System-First Unit Equipped (ADA Brigade)			4Q				
AMDPCS System -First Unit Equipped (AAMDC)				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 . AMDWS/AMDPCS	SS/CPIF	Huntsville, AL	3289	4076	1Q	5313	1Q	10004	1Q	Continue	Continue	0
b . APC, ADSI	SS/CPIF		0	500	2Q	2470	1Q	2080	1Q	Continue	Continue	0
c . Misc Support	Various	Various	487	1375	2Q	1291	2Q	1284	2Q	Continue	Continue	0
d . MATRIX (RDEC)	MIPR	Ft Monmouth, NJ	606	1449	2Q	1037	2Q	2135	1Q	Continue	Continue	0
e . CECOM	MIPR	Ft Monmouth, NJ	0	196	1Q	384	1Q	392	1Q	Continue	Continue	0
f . ABCS SE&I	MIPR	Ft Monmouth, NJ	0	147	1Q	207	1Q	265	1Q	0	619	0
Subtotal:			4382	7743		10702		16160		Continue	Continue	0

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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
Subtotal:			0	0		0		0		0	0	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 . Certification	MIPR	JITC, Ft Huachuca, AZ	93	75	2Q	125	1Q	128	1Q	Continue	Continue	0
b . Interoperability Assessment	MIPR	Various	0	159	2Q	165	1Q	168	1Q	Continue	Continue	0
Subtotal:			93	234		290		296		Continue	Continue	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
			0	0		0		0		0	0	0
Subtotal:												

Remarks: Not Applicable

Project Total Cost:			4475	7977		10992		16456		Continue	Continue	0
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