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

February 2003

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel - Eng

COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	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		16669	27262	29297	32415	28035	21788	19786	20061	0	211170
126	FAAD C2 ED	5967	11520	15528	14230	16069	9962	7657	7760	0	96573
146	AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	10702	15742	13769	18185	11966	11826	12129	12301	0	114597

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 (ADA) Brigades at corps and echelons above corps (EAC), the Army Air and Missile Defense Command (AAMDC) headquarters, and joint force command and control elements, such as the Battlefield Coordination Detachment (BCD). 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. ADSI will also provide the AAMDCs and the STRYKER Brigade Combat Teams (SBCTs) with an effective fire control system to display a single integrated air picture (SIAP) as part of the common operating picture (COP). 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 will be fielded to air and missile defense units at all echelons of command, battery through theater. AMDWS supports the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system by providing an automated defense planning capability for deployed units. The Galaxy program (AMDWS derivative) has demonstrated the ability to support Homeland Defense Initiatives through the integration and coordination of civilian and military air traffic control data. The AMDPCS provides the Army Battle Command System (ABCS) architecture and the Army AMD Task Force (AMDTF) with Joint BM/C4I capability and the Army component of interoperable Joint Theater Air and Missile Defense (JTAMD) BM/C4I. The AMDPCS provides the netted and distributed architecture to enable units to execute Active Defense Operations, Passive Defense Operations, and Attack Operations among all levels of air defense units, to include operations with Army, joint and multinational forces. The AMDPCS supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides continuously tailored situational awareness and situational understanding of the battlespace [including data on threat aircraft, cruise missiles and unmanned aerial vehicles (UAVs)] 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 C2 software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Digital Radio (JDR), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting System (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 fusing sensor data to create a scalable and filterable single integrated air picture (SIAP) and common operating picture (COP) at Army

divisions and below. System software will provide target data and engagement commands/status to the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system. FAAD C2 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 STRYKER Brigade Combat Teams (SBCTs). The FAAD C2 netted and distributed system architecture has been briefed as the basis for a potential BM/C4I Future Combat System (FCS). The FAAD C2 system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	17088	26978	26672	30812
Current Budget (FY 2004/2005 PB)	16669	27262	29297	32415
Total Adjustments	-419	284	2625	1603
Congressional program reductions				
Congressional rescissions		-497		
Congressional increases		1700		
Reprogrammings	21	-156		
SBIR/STTR Transfer	-440	-763		
Adjustments to Budget Years			2625	1603

FY04 and FY05 increases ($2.625M and $1.603M) attributed to additional developmental and test requirements for both Block III and AMDWS software.

Schedule Profile Detail (R-4a Exhibit)	February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604741A - Air Defense Command, Control and Intel - Eng**	**0604741A**

Schedule Detail: Not applicable for this item.

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

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604741A - Air Defense Command, Control and Intel - Eng**	**126**

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
126 FAAD C2 ED	5967	11520	15528	14230	16069	9962	7657	7760	0	96573

A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control, and Intelligence (FAAD C2I) System provides continuously tailored situational awareness and situational understanding of the battlespace [including data on threat aircraft, cruise missiles and unmanned aerial vehicles (UAVs)] 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 C2 software will provide this mission capability by integrating FAAD C2 engagement operations software with the Joint Digital Radio (JDR), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location Reporting System (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 fusing sensor data to create a scalable and filterable single integrated air picture (SIAP) and common operating picture (COP) at Army divisions and below. System software will provide target data and engagement commands/status to the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system. FAAD C2 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 STRYKER Brigade Combat Teams (SBCTs). The FAAD C2 netted and distributed system architecture has been briefed as the basis for a potential BM/C4I Future Combat System (FCS). The FAAD C2 system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Continue Block III software engineering and development for FDD DCX2, III (Digitized) Corps, SBCTs and SDD.	4527	7636	9436	8531
Continue ABCS, FBCB2 and Common Hardware/Software (CHS) integration and testing for Active and Reserve Army requirements; continue digitization integration for FDD, III (Digitized) Corps, Second Digitized Division (SDD) and SBCTs in support of Army Transformation and SW security accreditation.	1440	3734	6092	5699
Army Battle Command Systems (ABCS) SE&I	0	150	0	0
Totals	5967	11520	15528	14230

B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA 2, AD5050 - FAAD C2	8823	24109	19474	12971	11210	15828	12687	14926	Continuing	Continuing
Spares (BS9702) - FAAD C2	411	543	736	748	878	895	0	0	Continuing	Continuing

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.

ARMY RDT&E COST ANALYSIS(R-3)

February 2003

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TIT LE
0604741A - Air Defense Command, Control and Intel - Eng

PROJECT
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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 . 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	62230	7998	1Q	10913	1Q	9908	1Q	Continue	Continue	0
d . TRW	SS/T&M	Dominquez Hills, CA	6891	310	1Q	316	1Q	321	1Q	Continue	Continue	0
e . Matrix	MIPR	Various	9163	1611	2Q	1643	2Q	1675	2Q	Continue	Continue	0
f . Sentinel GBS	MIPR	Huntsville, AL	3791	0		0		0		0	3791	0
g . JTIDS	MIPR	Ft. Monmouth, NJ	6000	0		0		0		Continue	Continue	0
h . In-house/Govt Spt	Various	Various	13505	566	2Q	731	2Q	745	2Q	Continue	Continue	0
i . ABCS SE&I	MIPR	Ft Monmouth, NJ	196	150	1Q	0		0		0	346	0
j . Software Engineering	Various	Various	11419	645	1-4Q	1735	1-4Q	1294	1-4Q	Continue	Continue	0
Subtotal:			321862	11280		15338		13943		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2003

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel - Eng

PROJECT
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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
Subtotal:			0	0		0		0		0	0	0

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 . ADATD	MIPR	Ft Bliss, TX	10091	25	2Q	50		91		Continue	Continue	0
b . RTTC	MIPR	WSMR, NM	2355	215	2Q	140		196		Continue	Continue	0
Subtotal:			12446	240		190		287		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

February 2003

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604741A - Air Defense Command, Control and Intel - Eng

PROJECT
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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
Remarks: Not Applicable												
Project Total Cost:			334308	11520		15528		14230		Continue	Continue	0

Schedule Profile Detail (R-4a Exhibit)

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604741A - Air Defense Command, Control and Intel - Eng**	**126**

Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Preliminary/Critical Design Review		1Q		3Q				
System Certification Test		3Q			4Q			
First Unit Equipped - Objective System					3Q			
Contract Award, BLK IV						3Q		
Preliminary/Critical Design Review, BLK IV							3Q	4Q

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

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604741A - Air Defense Command, Control and Intel - Eng**	**146**

COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
146	AIR & MSL DEFENSE PLANNING CONTROL SYS (AMC PCS)	10702	15742	13769	18185	11966	11826	12129	12301	0	114597

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 Command (AAMDC) headquarters, and joint force command and control elements, such as the Battlefield Coordination Detachment (BCD). 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. ADSI will also provide the AAMDCs and the Stryker Brigade Combat Teams (SBCTs) with an effective fire control system to display a single integrated air picture (SIAP) as part of the common operating picture (COP). 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 will be fielded to air and missile defense units at all echelons of command, battery through theater. AMDWS supports the Surface Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM) air defense system by providing an automated defense planning capability for deployed units. The Galaxy program (AMDWS derivative) has demonstrated the ability to support Homeland Defense Initiatives through the integration and coordination of civilian and military air traffic control data. The AMDPCS provides the Army Battle Command System (ABCS) architecture and the Army AMD Task Force (AMDTF) with Joint BM/C4I capability and the Army component of interoperable Joint Theater Air and Missile Defense (JTAMD) BM/C4I. The AMDPCS provides the netted and distributed architecture to enable units to execute Active Defense Operations, Passive Defense Operations, and Attack Operations among all levels of air defense units, to include operations with Army, joint and multinational forces. The AMDPCS supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Continue AMDWS software engineering and development for FDD, III (Digitized) Corps, SDD, AMD family of systems, JTAMD family of systems (FOS), JTAMD FOS integration and development of AMDPCS Brigade Sheltered Subsystems for III Corps.	5177	9290	8309	10970
Continue ADSI software engineering and development for III (Digitized) Corps, SDD, AMD FOS, JTAMD FOS integration	2395	2080	1820	2405
Continue software systems certification testing; continue Army and Joint integration and interoperability assessments	772	805	980	1295
Continue AMDPCS sheltered subsystems configuration engineering, development, test and evaluation; SIAP concept and re-engineering.	2151	3302	2660	3515

Accomplishments/Planned Program (continued)	FY 2002	FY 2003	FY 2004	FY 2005
ABCS SE&I	207	265	0	0
Totals	10702	15742	13769	18185

B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA, AD 5070 - AMDPCS	10216	9487	8996	2918	3704	7383	10873	8275	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.

ARMY RDT&E COST ANALYSIS(R-3)

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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 . TRW	SS/CPIF	Huntsville, AL	12588	8057	1Q	7329	1Q	10485	1Q	Continue	38459	0
b . APC, ADSI	SS/CPIF	Austin, TX	2870	956	2Q	800	1Q	500	1Q	Continue	Continue	0
c . In-house Government Support	Various	Various	3053	2037	2Q	2011	2Q	2654	2Q	Continue	Continue	0
d . MATRIX	MIPR	Various	3476	2316	2Q	1986	2Q	2621	1Q	Continue	Continue	0
e . ABCS SE&I	MIPR	Ft Monmouth, NJ	354	265	1Q	0		0		0	619	0
f . Software Engineering	Various	Various	0	1877	2-3Q	1444	2-3Q	1662	2-3Q	Continue	Continue	0
Subtotal:			22341	15508		13570		17922		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

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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
Subtotal:			0	0		0		0		0	0	0

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 . Certification	MIPR	JITC, Ft Huachuca, AZ	293	75	1Q	64	1Q	85	1Q	Continue	Continue	0
b . Interoperability Assessment	MIPR	Various	324	159	1Q	135	1Q	178	1Q	Continue	Continue	0
Subtotal:			617	234		199		263		Continue	Continue	0

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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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
Remarks: Not Applicable												
Project Total Cost:			22958	15742		13769		18185		Continue	Continue	0

Schedule Profile Detail (R-4a Exhibit)

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604741A - Air Defense Command, Control and Intel - Eng**	**146**

Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Systems Certification Testing - AMDWS/ADSI/AMDPCS	4Q	4Q	4Q			4Q		4Q
AMDWS Software Release	3Q	3Q		4Q		4Q		4Q
AMDWS Software Certification	3-4Q	3-4Q			2-4Q			2-4Q
ADSI Software Release	3Q		3Q		3Q		3Q	
ADSI Software Certification		1-3Q		1-3Q	3Q	1-3Q		1-3Q
AMDPCS System-First Unit Equipped (ADA Brigade)		4Q						
AMDPCS System -First Unit Equipped (AAMDC)			4Q					