ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**

	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	206500	276191	224368	201295	309107	149246	249160	Continuing	Continuing
028	AERIAL COMMON SENSOR (ACS) (TIARA)	46835	103811	143865	150025	242728	23038	26157	0	764097
179	CH-47D PRODUCT IMPRV	1	0	0	0	0	0	0	0	3451
430	IMPR CARGO HELICOPTER	3271	14102	12935	6902	0	126208	223003	Continuing	Continuing
504	BLACK HAWK RECAPITALIZATION/MODERNIZATION	111998	156597	67568	24729	5742	0	0	0	464890
508	APACHE 2ND GENERATION FLIR	44395	0	0	0	0	0	0	0	135719
D12	LONGBOW APACHE OPERATIONAL SYSTEMS DEVELOP	0	1681	0	19639	60637	0	0	0	81957

A. Mission Description and Budget Item Justification: This PE provides for development of modifications and improvements for the Guardrail Common Sensor/Aerial Common Sensor, the Improved Cargo Helicopter (ICH), the UH-60A/L Black Hawk Recapitalization/Modernization, the Apache 2nd Generation Forward Looking Infrared(FLIR), and Longbow Apache Operational Systems Development.

B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	204562	187959	167274
Current Budget (FY 2005 PB)	206500	276191	224368
Total Adjustments	1938	88232	57094
Congressional program reductions		-2612	
Congressional rescissions	-2423		
Congressional increases	16000	89800	
Reprogrammings	-7017	-451	
SBIR/STTR Transfer	-4622		
Adjustments to Budget Years			57140

FY 2004: Increases provided for UH-60 prototype developement (+$75.0 million transfer from procurement), MAST program (+$5.1 million), and HUMS demonstration ($7.0 million).
FY 2005: Increases provided for the Aerial Common Sensor geolocation precision COMINT subsystem ($4.0 million),
engine and rotor hub upgrades for the CH-47 ($11.0 million), and to support the restructure of the UH-60 Black Hawk modernization program ($28.9 million).

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

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**028**

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
028	AERIAL COMMON SENSOR (ACS) (TIARA)	46835	103811	143865	150025	242728	23038	26157	0	764097

A. Mission Description and Budget Item Justification: The Aerial Common Sensor (ACS) is the airborne intelligence collection system required to provide critical support to U.S.-based early entry, forward deployed forces, and to support the Army's seamless intelligence architecture. ACS is the future force system that will satisfy the Army's critical need for a responsive worldwide, self-deployable, airborne reconnaissance, intelligence, surveillance and target acquisition (RISTA) capability that can immediately begin operations when arriving in theatre. The ACS will merge the current Airborne Reconnaissance Low (ARL) and Guardrail Common Sensor (GRCS) capabilities into a single airborne system capable of providing a rapid response information dominance capability dedicated to the Land Component Commander's need for precision real-time geolocation of the enemy on the future force battlefield. ACS will be composed of a family of modular sensors mounted on an airborne platform that is capable of operating independently or remotely via SATCOM or line-of-sight datalinks from a ground processor. ACS will be Joint Airborne SIGINT Architecture (JASA) and Unified Cryptologic Architecture (UCA) compliant and be interoperable within the open Network centric C4ISR architecture in order to support all combat and combat support functions through the emerging DOD "global infosphere". The primary mission will be standoff Signals Intelligence (SIGINT) collection, with a secondary mission of stand-off and overflight Imagery Intelligence (IMINT). ACS ground functionality will be an element of the Distributed Common Ground Station-ARMY(DCGS-A). ACS is primarily targeted against threat maneuver forces, logistic areas, rocket and artillery forces, air defense artillery, and command control communications and intelligence nodes (C3I). ACS will satisfy unique Army/Land Force Commander Intelligence, Surveillance and Reconnaissance (ISR), reporting and targeting requirements, and those of the Land Force Component of Joint and Combined Task Forces (JTF and CTF) across the full spectrum of Operations.

This project is assessing Horizontal Technology Integration (HTI) candidates. A key consideration is the affordability of these subsystems. The National Security Agency's Defense Cryptologic Program (DCP) provides funding to support enhanced SIGINT capabilities.

Navy is pursuing the Army’s Aerial Common Sensor (ACS) as a replacement for the EP-3E, with the goal of reaching IOC in 2012.

FY05 funding supports the System Integration (SI) portion of the System Demonstration and Development (SDD) Phase. The SDD phase will conclude the development and design of the Prime Mission Equipment (PME). Aircraft will be purchased and the PME will be integrated and tested on the aircraft. Air Worthiness Release (AWR) studies and testing will be conducted along with initial flight tests.

ACS is considered a "complimentary system" to the Future Combat System and designated as a required Future Force capability.

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Awarded and executed ACS TD contract(s) which transitioned virtual system concept and vetted it into a system architecture and relevant integration environment; supported the MS B process	36851	0	0
System Integration (SI) Phase performance specification analysis	414	0	0
Completed the prototype efforts required to validate Data Transport Systems performance capabilities.	733	0	0
Developed an Airborne Tactical Common Data Link (TCDL) for GRCS under a Total Ownership Cost Reduction initiative. RDTE funding for GR/CS terminates in FY03.	1236	0	0
Development of Modern Communications Exploitation	1000	0	0
Modeling, Program office and Milestone B Decision support for entry into the SDD Phase.	6601	0	0
Award and execute contract for System Integration Phase which will integrate technologies developed and demonstrated during the CAD phase	0	87379	123827
Contract selection support for SDD phase, Modeling, Program Office and Test support for the SDD Phase	0	16432	20038
Totals	46835	103811	143865

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

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**028**

B. Other Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
ACS DCP	15528	15124	14249	17545	19056	12331	12320	Continuing	Continuing
CHALS DCP	4334	4190	2931	2032	1541	4458	4455	Continuing	Continuing
GRCS DCP	8087	7525	7109	3835	3845	2478	2476	Continuing	Continuing
0305206/DK98 Tactical Reconnaissance	11433	4706	5284	5517	5501	5409	5745	Continuing	Continuing
A02005 Aerial Common Sensor- Aircraft Procurement, Army	0	0	0	0	0	232549	225484	Continuing	Continuing
Navy Funding for ACS Baseline	0	0	20400	50000	0	5600	49100	0	125100

FY04-FY05 DCP provides funding for the development of ACS technologies and technologies needed to ensure applicability of ACS in the evolving objective force architecture. Tactical Reconnaissance funds MASINT/IMINT technologies that will be integrated into ACS during SDD Phase.

C. Acquisition Strategy: The Technology Demonstration (TD) Phase is complete. A MS B ASARC was completed in Aug03 and a DAB is projected in 2Q FY04 for entry into the System Development and Demonstration (SDD) phase. The SDD phase will be a competitive solicitation with contract award scheduled in 3Q04 and will take the ACS program through Development Testing, Limited User Test (LUT) and IOT&E in 2Q09. A MS C LRIP phase will be sole source to the SDD contractor and used to establish a manufacturing capability in support of a Full Rate Production Decision.

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
028

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 . Data Transport Contract (Includes FY03 TOCR initiative)	SS-CPFF	L3Comm, Salt Lake City, Utah	3000	813	2-3Q	0		0		0	3813	3813
b . Penguin Type 4	SS-	Applied Signals Tech, Sunnyvale, CA	0	1000	4Q	0		0		0	1000	1000
c . Omnibus contract	SS-FP	NG, Sacramento, California	695	335	2Q	0		0		0	1030	1030
d . ACS CAD Contract(s)	C-CPAF	Lockheed Martin, Littleton, CO & Northrup Grumman, Baltimore, MD	5204	36851	1-4Q	0		0		0	42055	39636
e . ACS SI Contract	C-CPAF	TBD	0	0		87379	3Q	123827	1-2Q	Continue	211206	Continue
Subtotal:			8899	38999		87379		123827		Continue	259104	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
028

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 . ACS Operational Performance Model	SS-CPFF	Raytheon System Dev. Marlborough, MA	7420	785	3Q	1000	2Q	1910	2Q	Continue	11115	Continue
b . Model Evalution Support		Multiple	2390	1477	1-3Q	2002	1-3Q	2010	1-3Q	Continue	7879	Continue
c . ASARC Support	C-CPFF	Multiple	270	217	1-3Q	0		0		0	487	697
Subtotal:			10080	2479		3002		3920		Continue	19481	Continue

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 . Engineering Support	C-CPFF	Multiple	1924	200	1-3Q	1426	1-3Q	2000	1-3Q	Continue	Continue	Continue
b . AEC Support	C-CPFF	Multiple	260	465	1-3Q	772	1-2Q	858	1-2Q	Continue	2355	Continue
c . Analysis and Evaluation of CAD Products	C-CPFF	Multiple	0	573	1Q	0		0		0	573	573
Subtotal:			2184	1238		2198		2858		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

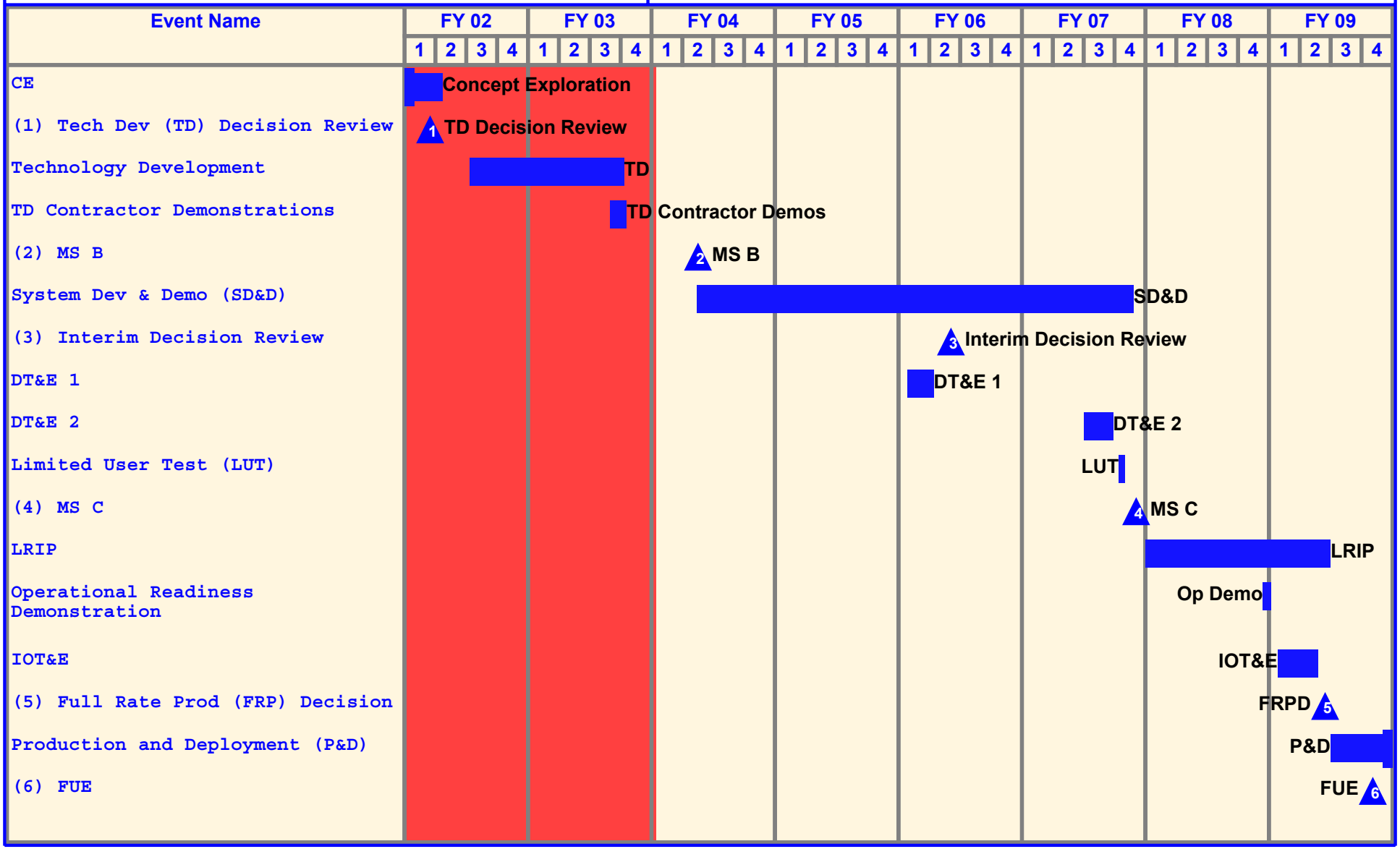
PROJECT
028

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 . Program Management	MIPR	PM, Signals Warfare	1379	2598	1-2Q	7931	1-2Q	8842	1-2Q	Continue	20750	Continue
b . Matrix Support	MIPR	HQ, CECOM	2180	1521	1-2Q	3301	1-2Q	4418	1-2Q	Continue	11420	Continue
Subtotal:			3559	4119		11232		13260		Continue	32170	Continue
Project Total Cost:			24722	46835		103811		143865		Continue	Continue	Continue

Schedule Profile (R4 Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	0203744A - Aircraft Modifications/Product Improvement Program	028



Schedule Detail (R4a Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**028**

Schedule Detail	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
GRCS upgrade contracts (to include FY 03 TOCR initiative) RDTE funding terminates for GR/CS in FY03	1-4Q						
TD Contract(s)	1-4Q						
Conduct TD Contractor Tests	3-4Q						
ACS Milestone B Decision		2Q					
ACS System Dev and Demo (SD&D) Phase Contract		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-2Q
DT&E 1				1-2Q			
DT&E 2					3-4Q		
ACS LUT						3-4Q	
MS C LRIP Decision					4Q		
LRIP Phase Contract						1-4Q	1-4Q
Operational Readiness Demo						4Q	
IOT&E							2-3Q
Full Rate Production Decision							3Q
Production and Development Phase							3-4Q
FUE							4Q

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

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**430**

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
430	IMPR CARGO HELICOPTER	3271	14102	12935	6902	0	126208	223003	Continuing	Continuing

A. Mission Description and Budget Item Justification: The CH-47F, Improved Cargo Helicopter (ICH), is a recapitalization program to extend the useful life of the CH-47D Cargo helicopter. This funding will assure heavy lift capability into the 21st century. This program awarded a contract for Engineering Manufacturing Development (EMD) which includes decreasing operation and support costs through vibration reduction/airframe stiffening, incorporating a new electronics/architecture system for compatibility with the digital battlefield and structural modifications as necessary to extend the life of the airframe. This program is the basis for establishing remanufacture, modernization, and upgrade program to meet the readiness needs of the future for heavy lift capability. The CH-47F (ICH) Program includes testing of the two engineering development models plus component testing for Live Fire. Developmental improvements to the T55-L-714A engines are funded as part of a shared, cooperative effort with the Component Improvement Program Office. Developmental improvements are also included for the Low Maintenance Rotor Hub (LMRH). This system supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Continue Engineering Manufacture Development (EMD).	0	0	0
Provide product technical support	2574	3833	0
Continue Contract Live Fire Test & Evaluation	97	0	0
Continue in-house and program management administration.	250	300	300
Continue Government Test & Evaluation.	350	4800	0
Test Analysis	0	1500	0
714B Engine	0	3259	4375
DT&E for Low Maintenance Rotor Hub	0	0	8260
Small Business Innovative Research/Small Business Technology Transfer Programs	0	410	0
Totals	3271	14102	12935

B. Other Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
APA, SSN AA0252, CH-47 CARGO HELICOPTER MODS (MYP) (Including Adv Proc)	728002	510226	542672	605494	520983	538498	842043	4917968	9473734

C. Acquisition Strategy: The CH-47F (ICH) will recapitalize an aging fleet and bridge the gap until the development of a follow-on aircraft. This will be achieved in a cost effective manner as the program will be based on a four-pronged approach which will include rebuilding the airframe, recapitalizing dynamic components, improving mission capability, and reducing vibrations to provide for long term O&S cost reductions. There will be two Low Rate Initial Production (LRIP) lots to ramp up to full rate production.

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
430

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 . EMD	CPIF	Various	117221	0		0		0		0	117221	117098
b . TOCR	CPIF	Various	1600	0		0		0		0	1600	1600
c . Technical Support	CPFF	Various	0	2574	1Q	4243	1Q	0		Continue	6817	0
d . 714B Engine	CPIF	Various	0	0		3259	1-2Q	4375	1-2Q	Continue	7634	0
e . Low Maintenance Rotor Hub	CPIF		0	0		0		8260	2-3Q	Continue	8260	0
Subtotal:			118821	2574		7502		12635		Continue	141532	118698

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 . PMO/OGA	Reimbursable	Various government	11814	250	2-3Q	300	2-3Q	300	2-3Q	0	12664	0
Subtotal:			11814	250		300		300		0	12664	0

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
430

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 . DT/OT	Reimbursable	Various government	9071	350	1Q	4800	1Q	0		0	14221	0
b . Live Fire Test & Eval	Reimbursable	Contract/Govt	6268	97	1Q	0		0		0	6365	0
c . Live Fire Test & Eval	Contract		50	0		0		0		0	50	0
d . Test Analysis	Reimbursable	Various Government	0	0		1500	2-3Q	0		0	1500	0
Subtotal:			15389	447		6300		0		0	22136	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 . CAMBER/Westar	SS/FP	Huntsville, AL	3901	0		0		0		0	3901	3901
Subtotal:			3901	0		0		0		0	3901	3901

Project Total Cost:			149925	3271		14102		12935		Continue	180233	122599

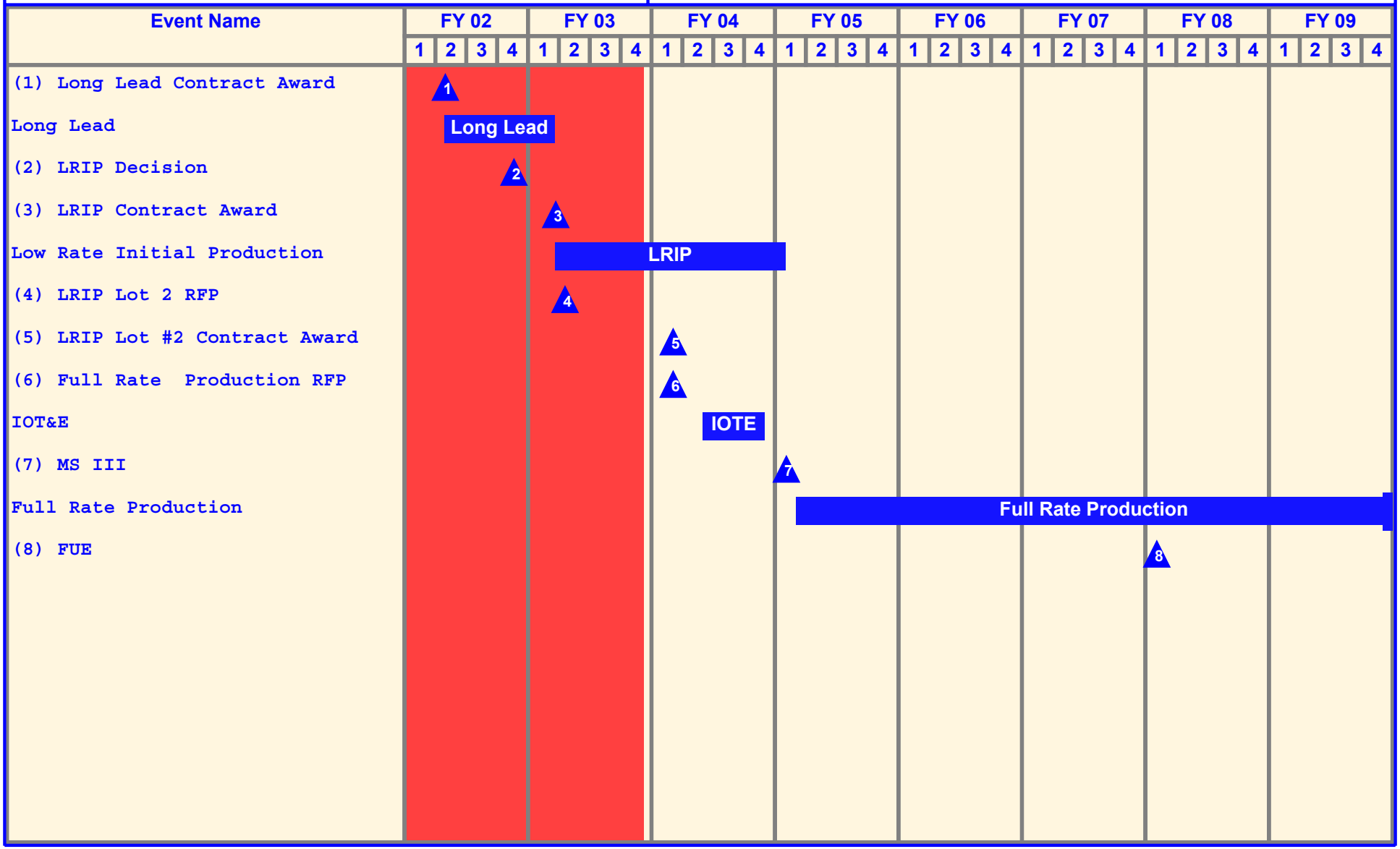
Schedule Profile (R4 Exhibit)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
430



Schedule Detail (R4a Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**430**

Schedule Detail	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
EMD Contract & Funding Increments							
Initial Production Facilitization (IPF)							
LL Award For LRIP I							
Initial Oper Test & Eval (IOTE)							
LRIP I Award	1Q						
LL Award For LRIP 2	1Q						
LRIP 2 Award		1Q					
MS C			1Q				

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

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**504**

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
504	BLACK HAWK RECAPITALIZATION/MODERNIZATION	111998	156597	67568	24729	5742	0	0	0	464890

A. Mission Description and Budget Item Justification: The UH-60 BLACK HAWK will serve as the Army's utility helicopter in the Future Force. It is used for air assault, general support, aeromedical evacuation (MEDEVAC), and command and control in active and reserve component theater, corps, division, and Table of Distribution and Allowances (TDA) units. The UH-60A entered service in fiscal year 1978 (FY78), and the newer model UH-60L in FY89. The Army continues to procure UH-60L helicopters today. The Army has established a recapitalization goal for its systems of maintaining the fleet's average age at the design half-life or less. The UH-60 was designed for a 20 year service life. The oldest UH-60As are now over 25 years old, and the average age of the UH-60A fleet is 21 years old. The increased operational tempo, coupled with the technological age of the basic airframe, components, and systems, is having an adverse impact on the operational readiness (OR) and operating and support (O&S) costs of the over 1500 aircraft UH-60 fleet. In addition, the UH-60A/L helicopters lack the necessary digital avionics architecture to meet current and future Army and Joint Service interoperability communication requirements. The Army has determined that a recapitalization/upgrade program is required to address these issues. An Operational Requirements Document (ORD) for recapitalization of the BLACK HAWK fleet was approved by the Joint Requirements Oversight Council in March, 2001. The ORD describes an evolutionary, block approach to transform the utility helicopter force to one that is more deployable, responsive, and less expensive to operate. Block 1 recapitalizes the oldest UH-60A BLACK HAWKs to the UH-60M configuration. The UH-60M selected upgrade includes airframe service life extension, structural improvements, upgrade of the propulsion system (UH-60A/L T700-GE-700/701C engine and drive train to T700-GE-701D engine and drive train), and a digital cockpit. The UH-60M provides a common platform for the modernized air ambulance MEDEVAC mission equipment package (MEP). RDTE funds are required to develop, integrate, test and qualify the UH-60M configuration. This system supports the Current-to-Future transition path of the Transformation Campaign Plan (TC).

FY 02-04 includes funding to demonstrate the benefits of an on-board Integrated Mechanical Diagnostic (IMD) – Health Usage Monitoring System (HUMS). The Army entered into a Commercial Operational Support Sharing (COSSI) Program with the Navy and Goodrich to explore the IMD-HUMS concept from the Navy's SH-60 and for the Army's UH60-L. The demonstration includes data collection and analysis to determine which features of an IMD-HUMS/Cockpit Voice/Flight data Recorder is beneficial to the Army. Data collected will be processed from field units to decision makers through an automated Maintenance Management Information System (MMIS). As a result of this demonstration program the Army will determine the configuration of the IMD-HUMS that will be installed on the UH-60 fleet.

The Maintenance Analysis Safety Program (MAST) will integrate a Smith Industries HUMS variant into the MH-60 and MH-47 and analyze the data for improvements to maintenance, training and safety.

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Continue airframe, avionics and powerplant development based on finalized configuration as a result of airframe CDR. Conduct System Preliminary Design Review and Critical Design Review.	16313	28379	7260
Software Development - includes failure modes and effects criticality analysis; software design descriptions; qualification testing of mission critical computer resources; update software requirements specifications and multiplex interface control documents; and prepare software design descriptions.	12489	20094	4406
Continue Producibility Engineering and Planning (PEP) as well as manufacturing planning and control.	7099	14732	2255
Prototype build and delivery to support Development Testing (DT).	26703	32756	27129
Test planning to include update and approval of Test & Evaluation Master Plan.	1409	0	0
Testing (Conduct flight testing, EME testing and ground testing).	30051	36056	13870
Preparation of training documentation for Logistics Demonstration Familarization Course, Government Test Pilot Familiarization Course and Test Data Collection Training Course.	3245	5535	1979
Conduct training course to support test.	201	418	661
Maintain Continuous Acquisition and Life Cycle Support (CALS)/Contractor Integrated Technical Information Service (CITIS) and deliver Interface Control Documents (ICD's).	493	665	486
Depot Study	832	0	0
Support Equipment	0	308	108
Performance Support System (NG)	0	1000	0
IMD-HUMS demonstration program.	13163	7000	0
MAST demonstration program.	0	5100	0
Common Avionics Architecture Initiation	0	0	9414
Small Business Innovative Research/Small Business Technology Transfer Programs.	0	4554	0
Totals	111998	156597	67568

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

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**504**

B. Other Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
AA0492 UH-60 MODS	47370	36225	137806	138232	299294	677104	693067	Continuing	Continuing

C. Acquisition Strategy: The UH-60 BLACK HAWK will serve as the Army's utility helicopter in the Future Force. The recapitalization/upgrade of the Current UH-60 fleet for the interim/future force will be accomplished using an evolutionary, block approach to transform the system. The Block 1 program will selectively upgrade the UH-60A/L fleet to the UH-60M configuration. This includes airframe structural improvements, a propulsion upgrade, and a digital cockpit that will meet lift, range, survivability, and interoperability requirements while decreasing O&S costs. This will extend the useful life of these aircraft another 20 years. These improvements will be accomplished through integration of existing technologies, by upgrading the UH-60A propulsion system to that currently in the UH-60L, and by adding the UH-60Q advanced MEDEVAC medical equipment package (MEP) to the air ambulance fleet. This program addresses current UH-60 fleet aging problems such as decreasing operational readiness (OR) and increasing O&S costs, including all top-ten cost drivers, and provides a common, modernized platform for the UH-60 utility and MEDEVAC fleet of the future. The program will be executed over four phases: pre-System Development/Demonstration Phase (FY00-01), System Development/Demonstration Phase (FY01-07), Production/Readiness Phase (FY05-27), and Operations and Sustainment Phase (FY06-FY46).

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ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
504

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 . Design, Integration & Qualification Contract	SS/CPAF	Sikorsky Aircraft Co 30 Moffitt Street Stratford, CT 06601	73302	89988	1-4Q	121491	1-2Q	44359	1-2Q	13602	342742	0
b . Development Support - Organic	MIPR	UH PMO/matrix	2962	2613	1-4Q	5690	1-3Q	3830	1-3Q	3756	18851	0
c . Development Support - Contractor	C/FP	Support Contractors	4049	3400	1-3Q	555	1-3Q	523	1-3Q	931	9458	0
d . IMD-HUMS Development Support - Organic	MIPR	Aviation Applied Tech Directorate (AATD) Matrix	2994	1754	1-4Q	836		0		0	5584	0
e . IMD-HUMS Development Support - Contractor	C/FP	Goodrich, 100 Panton Road, Vergennes, Vermont 05491	10534	11409	3-4Q	6164		0		0	28107	0
f . MAST Development Support - Organic	MIPR'S	Other Government Agency Support	0	0	2-4Q	350		0		0	350	0
g . MAST Development Support - Contractor	MIPR	Smith Industries Clear Water , FLI	0	0	3-4Q	4750		0		0	4750	0
h . Performance Support System - NF	MIPR	Other Government Agency Support	0	0	2-4Q	1000		0		0	1000	0

ARMY RDT&E COST ANALYSIS(R3)

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7 - Operational system development

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PROJECT
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I. Product Development (continued)	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
i . Common Avionics Architecture Initiation - Organic	MIPR		0	0		0	1-4Q	941		0	941	0
j . Common Avionics Architecture Initiation - Organic	CPAF		0	0		0	1-4Q	8473		0	8473	0
Subtotal:			93841	109164		140836		58126		18289	420256	0

Remarks: IMD-HUMS demonstration program was funded in FY02-04 and is separate from the UH-60M program.

MAST demonstration program was funded in FY04 and is separate from the UH-60M and the HUMS programs.

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 . Cost Analysis Support	MIPR	AMCOM Matrix	288	77	1-3Q	212	2Q	212	1-3Q	424	1213	0
b . Logistics Analysis Support - Organic	MIPR	AMCOM Matrix	0	0	1-4Q	280	1-3Q	297	1-3Q	529	1106	0
c . Logistics Analysis Support - Support Contractor	MIPR	Support Contractor	0	0	1-3Q	247	1-3Q	523	1-3Q	699	1469	0
Subtotal:			288	77		739		1032		1652	3788	0

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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 Planning, Test and Evaluation	MIPR	Various Activities	1920	1238	1-4Q	7787	1-3Q	6162	1-3Q	6273	23380	0
b . Test Planning, Test and Evaluation	MIPR	Various Activities	0	0	1-4Q	123	1-3Q	131	1-3Q	233	487	0
Subtotal:			1920	1238		7910		6293		6506	23867	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 - Organic	MIPR	UH PMO/matrix	1683	1261	1-4Q	1291	1-3Q	1413	1-3Q	2818	8466	0
b . PM Support - Contract	C/FP	O2K Contractor	613	258	1-3Q	1267	1-3Q	704	1-3Q	1206	4048	0
c . SIBR/STTR			0	0		4554		0		0	4554	0
Subtotal:			2296	1519		7112		2117		4024	17068	0

ARMY RDT&E COST ANALYSIS(R3)

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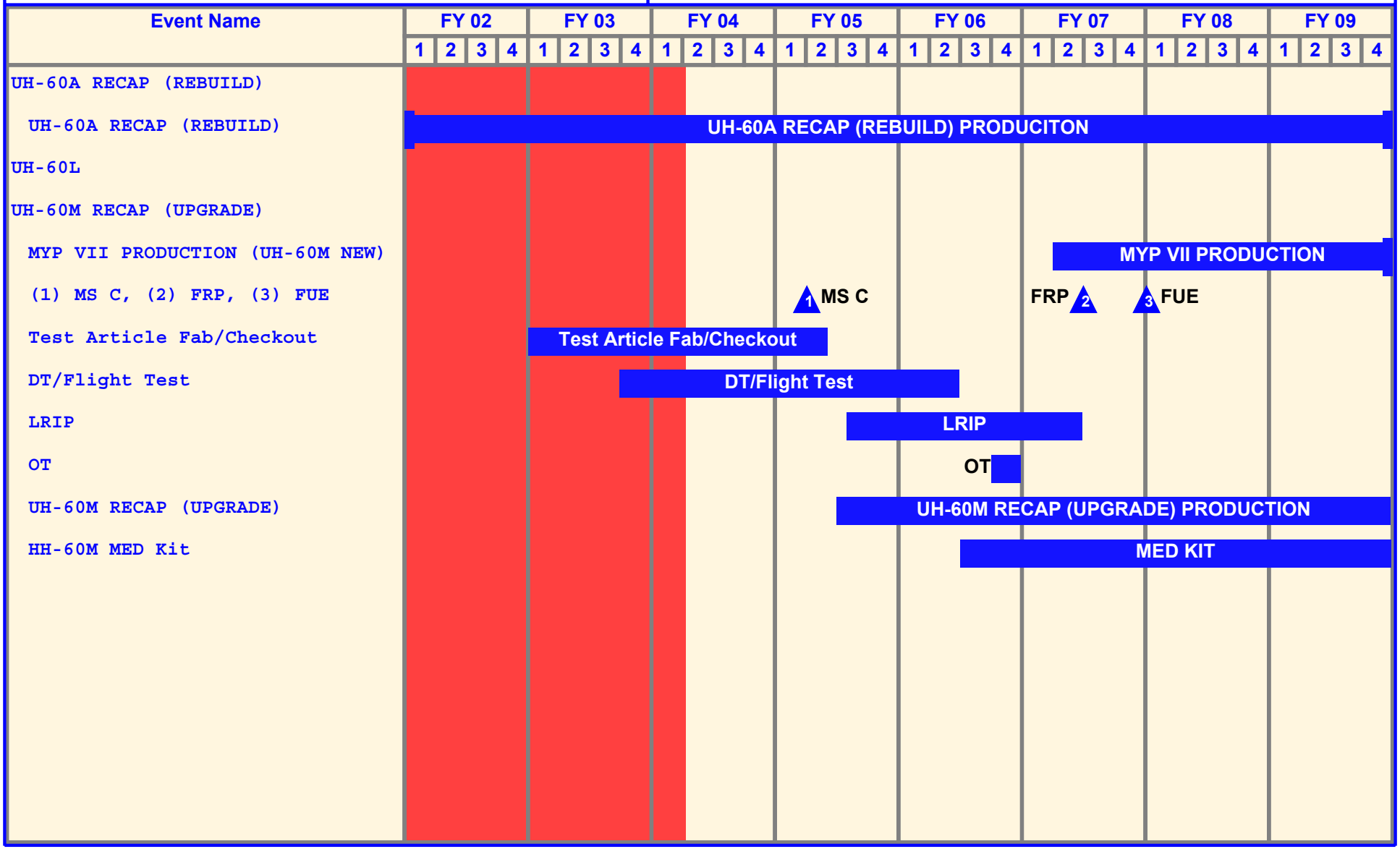
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**504**

Project Total Cost:			98345	111998		156597		67568		30471	464979	0

Schedule Profile (R4 Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	0203744A - Aircraft Modifications/Product Improvement Program	504



Schedule Detail (R4a Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**504**

Schedule Detail	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Depot Partnership Study (UH-60M)	1-4Q						
IMD-HUMS: Completion of demonstration program					2Q		
System Critical Design Review (UH-60M)	3Q						
Test article delivery for testing (UH-60M)	4Q	1Q	4Q	1-3Q			
OT preparation and conduct				1-4Q	1Q		
Closeout of Integration and Qualification					2Q		
Depot Partnership Prove-out (UH-60M)				1-4Q	1-4Q		
Milestone C (UH-60M)			2Q				
LRIP Lot 1 Contract Award (UH-60M)			2Q				
LRIP Lot 2 Contract Award (UH-60M)				2Q			
Full Rate Production IPR (UH-60M)					3Q		
First Unit Equipped (FUE) (UH-60M)						1Q	
Mast Demonstration Program		2-4Q					
Performance Support System		2-4Q					
Note: Schedule reflects program restructure							

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

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**D12**

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
D12	LONGBOW APACHE OPERATIONAL SYSTEMS DEVELOP	0	1681	0	19639	60637	0	0	0	81957

A. Mission Description and Budget Item Justification: As enabled by the Congressional supplemental, the FY 04 add will fund an Army Distributed Mission Training System (ADMTS) that will provide the US Army and USAF attack aircraft with a training capability to develop the skills needed to conduct coordinated attacks on enemy targets. This is known as the Joint Air Attack Team (JAAT). The ADMTS will utilize the existing USAF DMT network and Army and Air Force flight simulators in a synthetic environment. This effort would introduce the AH-64A Combat Mission Simulator (CMS) as the first rotary-wing member of the ADMTS and identify the database constraints that have to be overcome for AH-64A pilots to participate in JAAT training scenarios.

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Contract modification for ADMTS by PEO STRI (PM CATT)	0	1632	0
Small Business Innovative Research/Small Business Technology Transfer Programs	0	49	0
Totals	0	1681	0

B. Other Program Funding Summary	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
APA, SSNs: AA6606, -6607, -6608 & -0978	1026783	834692	599113	637032	536371	466535	295868	2193200	4396394
RDTE, PE: 0203744A, Project 508	44395	0	0	0	0	0	0	0	44395

C. Acquisition Strategy: PEO STRI (PM CATT) will manage the planned program under a revision to the Memorandum of Agreement with PM AAH which currently provides for the matrix support cell that administers the AH-64A Combat Mission Simulator (CMS) upgrade program. The effort shall be contracted as a modification to the existing firm-fixed-price CMS upgrade delivery order under contract N61339-00-D-0712, or as a separate delivery order under the aforementioned contract.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
7 - Operational system development

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PROJECT
D12

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 . MIPR to PEO STRI (PM CATT) for Contracting	C, FFP	Northrop Grumman Space & Mission Systems	0	0		1681	2-3Q	0		0	1681	1681
Subtotal:			0	0		1681		0		0	1681	1681

Remarks: Northrop Grumman Space and Mission Systems (NGSMS), formerly TRW, Inc., Fairfax, VA, shall perform the work. NGSMS is the prime contractor for the current CMS upgrade effort.

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

ARMY RDT&E COST ANALYSIS(R3)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
D12

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
Subtotal:			0	0		0		0		0	0	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	0		1681		0		0	1681	1681

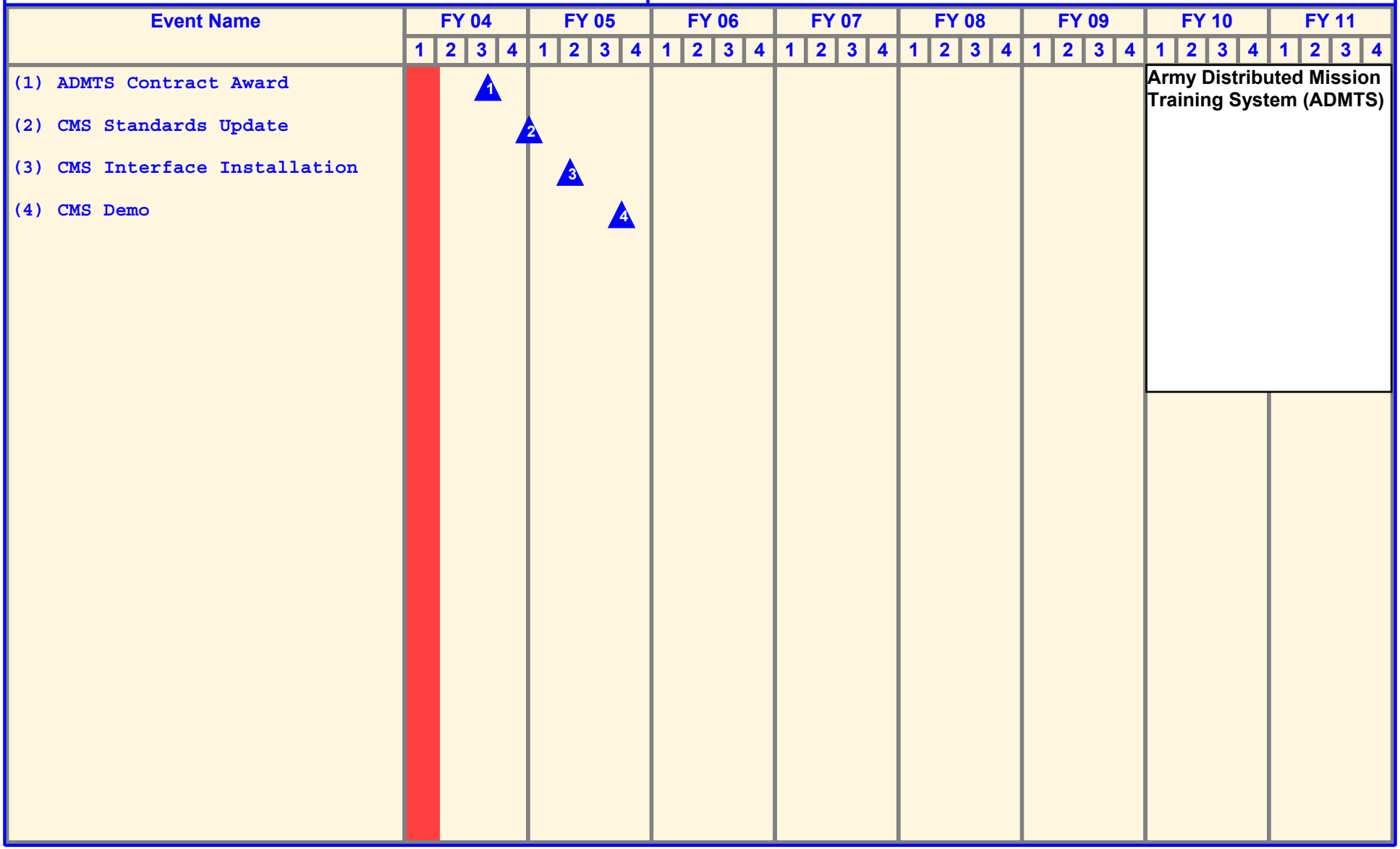
Schedule Profile (R4 Exhibit)

February 2004

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Program

PROJECT
D12



Schedule Detail (R4a Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational system development	**0203744A - Aircraft Modifications/Product Improvement Program**	**D12**

Schedule Detail	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Contract Award		3Q					
CMS Standards Recommendation			1Q				
CMS External Interface Installation			2Q				
CMS/JAAT Connectivity Demonstration			3-4Q				

This program will determine the standards that need to be updated to integrate the AH-64A CMS with the DMT network; upgrade one CMS to determine external interface requirements; and establish connectivity between the CMS and the DMT network via DMT portal and T1 lines.