

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

BUDGET ACTIVITY		PE NUMBER AND TITLE							
7 - Operational system development		0203744A - Aircraft Modifications/Product Improvement Programs							
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	299405	328514	452787	428195	514030	416410	417621	Continuing	Continuing
028 Aerial Common Sensor (ACS) (MIP)	22561	12874	171526	247726	352075	289440	319707	Continuing	Continuing
430 IMPR CARGO HELICOPTER	28967	21038	9907	10975	11173				82060
504 BLACK HAWK RECAPITALIZATION/MODERNIZATION	122976	95654	33910	35245	40634	44442	44463	Continuing	Continuing
D12 LONGBOW APACHE OPERATIONAL SYSTEMS DEVELOP	641		36066						36707
D17 APACHE BLOCK III	118863	192453	198361	134249	110148	82528	53451	Continuing	Continuing
D18 UTILITY FW CARGO AIRCRAFT	5397	6495	3017						14909

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.

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February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE		
7 - Operational system development	0203744A - Aircraft Modifications/Product Improvement Programs		
<u>B. Program Change Summary</u>	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008/2009)	303491	325643	417911
Current BES/President's Budget (FY 2009)	299405	328514	452787
Total Adjustments	-4086	2871	34876
Congressional Program Reductions		-17012	
Congressional Rescissions		-117	
Congressional Increases		20000	
Reprogrammings			
SBIR/STTR Transfer	-4086		
Adjustments to Budget Years			34876

FY08: \$15 million reduction to Project 028 (ACS lack of Acquisition Strategy); \$10 million increase to Project 430 (HUMS); \$8.4 million increase to Project 504 (HALS, MEDEVAC, Aircraft Component Remediation)
 FY09: \$34.8 million increase to Project D12 in support of Composite Main Rotor Blade(CMRB), Apache Training Devices NRE and the Light Weight Missile Launcher efforts.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT 028	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
028 Aerial Common Sensor (ACS) (MIP)	22561	12874	171526	247726	352075	289440	319707	Continuing	Continuing

A. Mission Description and Budget Item Justification: (U) Aerial Common Sensor (ACS) is an Airborne Reconnaissance, Surveillance and Target Acquisition (RSTA)/Intelligence, Surveillance, and Reconnaissance (ISR) capability directly supporting Battlespace Awareness for tactical commanders. Specifically, ACS will provide real-time, persistent, precision, networked, wide-area, high-capacity, multi-sensor intelligence collection capability throughout the joint battlespace. ACS will quickly produce actionable intelligence that provides commanders and soldiers critical shared situational understanding delivered with the speed, accuracy, and timeliness necessary to conduct successful and when necessary, lethal joint operations. ACS will support focused Intelligence Preparation of the Battlespace (IPB), Indications and Warnings (I&W), precision targeting, battle damage assessment (BDA), Situational Development, battle command, and Force Protection. Each of these will be synchronized with operations in order to develop and maintain situational awareness and reduce clutter in the maneuver environment. ACS will be a manned, high performance fixed-wing aircraft capable of rapid worldwide deployment carrying multiple sensor payloads and intelligence processing, appropriate air/ground/satellite data links, and air crew (i.e., pilots and intelligence systems operations). The RSTA/ISR payload will consist of a suite of modular, scaleable Signals Intelligence (SIGINT), Imagery Intelligence (IMINT) and Measurement and Signature Intelligence (MASINT) sensors and processors that can operate alone or simultaneously in combination with each other (e.g., automated cross-cueing). The intelligence processing suite onboard ACS and in the ground station, provided by the Distributed Common Ground System-Army (DCGS-A), will integrate the products from all ACS Sensor payloads as well as the sensor feeds from other joint force sensors, including manned/unmanned (MUM) teaming with Army Unmanned Aircraft Systems (UAS), to provide a correlated near-real-time picture of the tactical operational environment with the greatest degree of granularity possible. Onboard communications will consist of a robust set of line-of-sight (LOS) and satellite communications (SATCOM) datalinks that will enable direct linkage to Brigade Combat Teams, Manned-Unmanned teaming with Army UAS, wideband/worldwide connectivity to DCGS and the Global Information Grid, and interoperability with other Army, Joint and National RSTA/ISR assets. ACS will be a critical and integral component of the future force.

The National Security Agency's Military Intelligence Program (MIP) provides funding to support enhanced SIGINT capabilities.

FY09 funds support completion of source selection activities, ASARC/DAB process, start of SDD contract management and ACAT I reporting.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of 028.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Modeling, Program Office, Matrix Engineering and Test support for the AC Sensors	7561		
AoA Study, Payload & Platform Integration Studies, CONOPS studies and Analysis, SWAP-C Analysis	2427		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs			PROJECT 028
Modern Signal, Sensor prototype, COMINT Subsystem Development, Datalink Risk Reduction, CHALS-C	12573	2187		
Mission Thread Analysis, Systems Integration Analysis		1600		
Program Office, Matrix Engineering and Test support for the AC Sensors, Payload RFI/SDD RFP/Source Selection activities/MS B Documentation, ASARC/DAB preparation		9087		
Program Office, Matrix Engineering and Test support for the AC Sensors, completion of Source Selection activities, MS B Documentation/ASARC/DAB, SDD contract management, ACAT I reporting				13816
SDD Contract				157710
Total	22561	12874		171526

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
ACS NSA MIP	3674	3779	3921	3978	6897	7170	7337	Continuing	Continuing
CHALS NSA MIP	1460	4071	4169	4146	4094	4182	4234	Continuing	Continuing
GRCS NSA MIP	5645	6588	6713	6709	3741	3787	3795	Continuing	Continuing
ARL NSA MIP		3744	3817	3817	3743	3743	3743	Continuing	Continuing
TSP NSA MIP	4119	6739	6904	6863	6779	6926	7011	Continuing	Continuing

Comment: FY09 Military Intelligence Program (MIP) funding provides for the development of ACS SIGINT technologies needed to ensure applicability of ACS in the evolving future force architecture and Guardrail Modernization Capabilities Growth Study.

C. Acquisition Strategy Upon formal Joint Requirements Oversight Council (JROC) concurrence and milestone B approval by the Defense Acquisition Executive (DAE), the Aerial Common Sensor (ACS) development program will be accomplished on an incremental basis. A competitive system development & demonstration (SDD) contract for Increment I capability will be awarded in FY09. As the development program evolves, future competitive opportunities will be assessed.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE								PROJECT	
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs								028	
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Multi-Role-Tactical Command Data Link Development	SS-CPAF	L-3 Communications, Salt Lake City, UT	6791	2468	2-3Q	587	3Q				9846	4590
CHALS Enhancement Development	SS-CPFF	Lockheed Martin, Owego, NY	6176	1711	1Q						7887	
Modern Signals Sensor Prototype	SS-CPFF	Radix, Mountain View, CA	3691	5119	1-4Q	1600	2-3Q				10410	
Development/Enhanced Situational Awareness	C-CPFF	Northrop Grumman, Sunnyvale, CA	8000	2289	1Q						10289	
Sentinel UAV Phase II (ARL)				986	1-3Q						986	
SDD contract	TBD	TBD						157710	3Q		157710	
Subtotal:			24658	12573		2187		157710			197128	4590
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Aircraft, ISR and Integration Validation Studies	Gov/KR; TBD	TBD	1709	1258	2Q						2967	
Thread Analysis for ACS Design CONOPS; Systems Integration Analysis	IDA/Mitre			1169	1-3Q	1600	2Q				2769	
Subtotal:			1709	2427		1600					5736	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support	MIPR/CPFF	Gov't/Kr Various	3132	163	1Q	328	1-2Q	1500	1-2Q	Cont.	Cont.	Cont.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs											PROJECT 028
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Subtotal:	3132	163		328		1500		Cont.	Cont.	Cont.
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/travel/O/H expenses	In-House	PM, AC Sensors	21511	2144	1-4Q	1180	1-4Q	2500	1-4Q	Cont.	Cont.	Cont.
Program Seta Support	C-T&M	CACI/TBD NJ/DC/TBD	8634	1157	1-2Q	907	1-2Q	1640	1-2Q		12338	Cont.
Engineering Seta Support	C-T&M	ILEX, Tinton Falls, NJ	1875	1000	1-2Q	971	1-2Q	1200	1-2Q	Cont.	Cont.	Cont.
Seta Mgmt Support	Kr; Various	Multiple	7498	851	1-3Q	1019	1-3Q	1447	1-3Q	Cont.	Cont.	Cont.
Matrix Support	CPFF	BAH, Eatontown, NJ	10902	921	1-2Q	862	1-2Q	1709	1-2Q	Cont.	Cont.	Cont.
Matrix Support	MIPR	CRDEC/I2WD, Ft Monmouth, NJ	4052	808	1-3Q	921	1-2Q	1885	1-2Q	Cont.	Cont.	Cont.
Matrix Support	MIPR/CPFF	Gov't; Various	2348	517	1-2Q	2899	1-2Q	1935	1-2Q		7699	
Subtotal:			56820	7398		8759		12316		Cont.	Cont.	Cont.

Project Total Cost:	86319	22561		12874		171526		Cont.	Cont.	Cont.
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Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	CDD Development and Approval																											
Path Forward Analysis/Dev Acq Strategy																												
(1) Path Forward Decision					 Decision																							
Milestone Preparation Activities																												
RFP Process and Source Selection																												
(2) ACS Milestone B Decision									 MS Decision																			
ACS Development Contract																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 028	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
CDD Development and Approval	1Q - 4Q	1Q - 3Q						
Path Forward Analysis/Dev Acq Strategy	1Q - 4Q	1Q - 3Q						
Path Forward Decision	4Q							
Milestone Preparation Activities	2Q - 4Q	1Q - 4Q	1Q - 2Q					
RFP Process and Source Selection		1Q - 4Q	1Q - 2Q					
ACS Milestone B Decision			2Q					
ACS Development Contract			2Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
ACS Contract Termination and Closeout	1Q - 4Q	1Q - 2Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT 430	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
430 IMPR CARGO HELICOPTER	28967	21038	9907	10975	11173				82060

A. Mission Description and Budget Item Justification: The CH-47 Chinook is a twin-turbine, tandem-rotor, heavy-lift transport helicopter with a useful load of up to 25,000 pounds. As the Army's only heavy lift helicopter, the CH-47F Improved Cargo Helicopter is an essential component of the Army Future Force. The CH-47F program fills the Army's Aviation Transformation Chinook requirement. Key product improvements integrate the CH-47F Common Avionics Architecture System (CAAS) digital cockpit which will provide future growth potential to meet the Net-Ready Key Performance Parameters (KPPs) and also includes a digital data bus that permits installation of enhanced communication and navigation equipment for improved situational awareness, mission performance, and survivability. The CH-47 program funds completion of the Independent Operational Test and Evaluation program, developmental improvements to the T55-GA-714A engines which includes a redesigned N1 Drive Train and Composite Inlet Housing, and the Airframe Component Improvement Program that includes development of new Rotor Blades that will result in significant performance improvement for the Chinook such as gaining an additional 1000 lbs of lift, improving erosion protection, and reducing retreating blade stall. The Health and Usage Monitoring System (HUMS) incorporated onboard the Chinook aircraft will collect timely and accurate diagnostic data which will be used to enhance fleet management. The Cargo Condition Based Maintenance (CBM) effort will provide near real time accurate aviation maintenance and component performance data for fleet management; provide logistical and engineering data to Army support organizations at a level of detail previously unavailable; exercise CBM technologies and processes in the context of a single Platform Maintenance Application and emerging Army maintenance doctrine; and reduce risk for integration on the CH-47F by providing out key system and process element/performance specification enabling timely insertion of HUMS/CBM technology.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of 430.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Operational Test & Evaluation	1536		
Continue in-house and Program Management Administration	515	842	489
714 Engine Component Improvement Program	6041	4279	3955
Airframe Component Improvement Program	3861	5328	5463
Health and Usage Monitoring (HUMS)	16200	10000	
Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)	814	589	
Total	28967	21038	9907

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 430			
<u>B. Other Program Funding Summary</u>			FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
APA, SSN AA0252, CH-47 CARGO HELICOPTER MODS (MYP) (Including Adv Proc and Initial Spares)			1310791	912049	726218	698834	911570	1212077	702564	6622220	13096323
APA, SSN A05008, CH-47 CARGO HELICOPTER NEW BUILD (Including Adv Proc)				189600	443519	215850	211558	138572	153510	155000	1507609

Comment:

C. Acquisition Strategy The CH-47F rebuild program extends the service life by twenty years, incorporates a new machined airframe, and includes a new Common Avionics Architecture System (CAAS) cockpit with digital communication/navigation capability allowing improved interoperability on the digital battlefield. The CH-47F rebuild program includes recapitalization of key dynamic components, bringing them to a near zero time.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							430		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
EMD	CPIF	Various	117221								117221	117098
TOCR	CPIF	Various	1600								1600	1600
Low Maintenance Rotor Hub	CPIF	Boeing	7685								7685	
SBIR/STTR				814	1Q	589	1Q				1403	
Technical Support	CPFF	Various	8408								8408	
714 Engine Component Improvement Program	CPFF	Various	10134	6041	2Q	4279	1-2Q	3955	1-2Q		24409	
Airframe Component Improvement Program				3861	2-4Q	5328	2Q	5463	2Q		14652	
Health and Usage Monitoring (HUMS)			23400	16200	3-4Q	10000	3-4Q				49600	
Subtotal:			168448	26916		20196		9418			224978	118698
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
PMO/OGA	Reimbursable	Various government	13507	515	2-3Q	842	2-3Q	489	2-3Q		15353	
Subtotal:			13507	515		842		489			15353	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT/OT	Reimbursable	Various government	18971	1536	1-2Q						20507	
Live Fire Test & Eval	Reimbursable	Contract/Govt	6365								6365	
Live Fire Test & Eval	Contract		50								50	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs								PROJECT 430	
Test Analysis	Reimbursable	Various Government	1500								1500	
Subtotal:			26886	1536							28422	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
CAMBER/Westar	SS/FP	Huntsville, AL	3901								3901	3901
Subtotal:			3901								3901	3901

Project Total Cost:			212742	28967		21038		9907			272654	122599
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Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Programs PROJECT
430

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13							
	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				
Full Rate Production	Full Rate Production																															
IOT&E Phase II																																
(1) FUE																																

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 430	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Long Lead (Lot 1)								
LRIP Decision								
LRIP Lot 1 Contract Award								
Low Rate Initial Production								
LRIP Lot 2 RFP								
LRIP Lot #2 Contract Award								
Full Rate Production RFP								
IOT&E Phase I								
MS III/FRP								
Full Rate Production	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
IOT&E Phase II	1Q - 3Q							
FUE	4Q							
Milestone III								
Full Rate Pdn								
Initial Oper Test & Eval (IOT&E) Phase II								

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT 504	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
504 BLACK HAWK RECAPITALIZATION/MODERNIZATION	122976	95654	33910	35245	40634	44442	44463	Continuing	Continuing

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's last procurement of UH-60L helicopters was FY06. 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 an 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 (JROC) 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. A revised ORD was signed by the JROC on July 24, 2006 updating key performance parameters for survivability and force protection. 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. FY05 funded the initial efforts to move the UH-60M program to an Upgrade configuration which includes the Fly By Wire (FBW), Composite Tailcone, Full Authority Digital Engine Control (FADEC) and the Common Avionics Architecture System (CAAS), which is the common cockpit to be used by UH-60M, CH-47 and Special Operations. Incorporation of CAAS will minimize the future sustainment costs for these aircraft platforms. A successful UH-60M Upgrade IPR decision was obtained in January 2006. On May 18, 2007, the Office of the Secretary of Defense (OSD) Overarching Integrated Product Team (OIPT) report recommended approval for the UH-60M program to enter Full Rate Production (FRP) and approved the Army request for advanced procurement for seven UH-60M Upgrade aircraft and recommended a paper Defense Acquisition Board (DAB). On June 26, 2007 the Black Hawk Full Rate Production (FRP) Acquisition Decision Memorandum (ADM) was signed. This newly approved ADM authorizes entry into FRP for the Black Hawk Upgrade Program to include both the UH-60M and HH-60M baseline aircraft. The ADM also provides for FY08 advanced procurement for long lead items to support the initial cut-in aircraft for the UH/HH-60M Upgrade effort.

FY07 Funds the continuation of the Upgrade program. FY07 includes funds for the Full Authority Digital Engine Control (FADEC) Development.

FY08 include the on-going FADEC Development program and continues efforts for the development and test of the UH-60M Upgrade aircraft.

FY09 - FY10 Funds on-going development of the FADEC program and continues efforts for the development and test of the UH-60M Upgrade aircraft.

FY11 and out funds the Improved Turbine Engine Program (ITEP) development and qualification.

FY 2007 funding total includes no funding received in GWOT supplemental.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT 504
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FY 2008 funding total includes no funding received in the McConnell Amendment.
 FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of 504.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
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.	40372	24668	14072
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.	31287	17080	3312
Continue Producibility Engineering and Planning (PEP) as well as manufacturing planning and control.	7840	4752	1554
Prototype build and delivery to support Development Testing (DT).	4364	3454	3390
Testing (Conduct flight testing, EME testing and ground testing).	28071	21712	7267
Preparation of training documentation for Logistics Demonstration Familiarization Course, Government Test Pilot Familiarization Course and Test Data Collection Training Course.	943	3169	841
Conduct training course to support test.	934		1029
Maintain Continuous Acquisition and Life Cycle Support (CALs)/Contractor Integrated Technical Information Service (CITIS) and deliver Interface Control Documents (ICD's).	712	807	330
Support Equipment	333	144	141
Full Authority Digital Engine Control (FADEC)	8120	8791	1974
Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)		2677	
Operator Situational Awareness System - MEDEVAC		2000	
Helicopter Autonomous Landing System (HALS)		4000	
Aircraft Component Remediation		2400	
Total	122976	95654	33910

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
A05002 BLACK HAWK (MYP)	1271931	1364796	1063027	1230556	951480	1058266	1154394	Continuing	Continuing

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

7 - Operational system development

0203744A - Aircraft Modifications/Product Improvement Programs

504

C. Acquisition Strategy The UH-60 BLACK HAWK will serve as the Army's utility helicopter in the Future Force. The Army revised the acquisition strategy for the UH-60M to procure new UH-60M helicopters in lieu of Recap/Upgrade. 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 (Baseline FY01-07) (Upgrade FY05-10), Production/Readiness Phase (FY05-25), and Operations and Sustainment Phase (FY06-FY44).

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							504		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Design, Integration & Qualification Contract	SS/CPAF	Sikorsky Aircraft Co 6900 Main Street Stratford, CT 06601	362752	1463	1-2Q						364215	
UH-60M Upgrade Pre-Planned Product Improvement Contract	SS/CPAF	Sikorsky Aircraft Co 6900 Main Street Stratford, CT 06601	85956	92112	1-2Q	68967	1-2Q	23794	1-2Q	11267	282096	
Development Support - Organic	MIPR	UH PMO/matrix	19681	1832	1-3Q	529	1-3Q	921	1-3Q	324	23287	
Development Support - Contractor	C/FP	Support Contractors	13679	2060	1-3Q	1586	1-3Q	1475	1-3Q	972	19772	
IMD-HUMS Development Support - Organic	MIPR	Aviation Applied Tech Directorate (AATD) Matrix	6953								6953	
IMD-HUMS Development Support - Contractor	C/FP	Goodrich, 100 Panton Road, Vergennes, Vermont 05491	46862								46862	
MAST Development Support - Organic	MIPR'S	Other Government Agency Support	1429								1429	
MAST Development Support - Contractor	MIPR	Smith Industries Clear Water , FLI	5708								5708	
Full Authority Digital Engine Control (FADEC) Development - Organic				922	1-2Q	998	1-2Q	224	1-2Q	1709	3853	
Full Authority Digital Engine Control (FADEC) Development - Contractor				7198	1-2Q	7793	1-2Q	1750	1-2Q	13212	29953	
Internal Reprogramming - Payback for FY03			3413								3413	
HALS			8675			4000	2-4Q				12675	
Performance Support System - NG (Apache)	MIPR	Other Government Agency Support	1000								1000	
Transfer to Apache			3000								3000	

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							504		
Improved Turbine Engine Program (ITEP) Engine Development and Qualification	C	TBD								130414	130414	
Operator Situational Awareness System - MEDEVAC						2000	2-4Q					2000
Aircraft Component Remediation						2400	2-4Q					2400
Subtotal:			559108	105587		88273			28164		157898	939030

Remarks: IMD-HUMS demonstration program was funded in FY02-05 and is separate from the UH-60M program.
 MAST demonstration program was funded in FY04 and FY05 and is separate from the UH-60M and the HUMS programs.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Cost Analysis Support	MIPR	AMCOM Matrix	721	77	1-3Q	78	1-3Q	80	1-3Q	81	1037	
Logistics Analysis Support - Organic	MIPR	AMCOM Matrix	829	640	1-3Q	423	1-3Q	393	1-3Q	259	2544	
Logistics Analysis Support - Support Contractor	MIPR	Support Contractor	968	640	1-3Q	352	1-3Q	327	1-3Q	216	2503	
Subtotal:			2518	1357		853		800		556	6084	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Planning, Test and Evaluation	MIPR	Various Activities	19326	12508	1-3Q	1829	1-3Q	3060	1-3Q	4967	41690	
Test Planning, Test and Evaluation	MIPR	Various Activities	382	230	1-3Q	134	1-3Q	137	1-3Q	239	1122	
Subtotal:			19708	12738		1963		3197		5206	42812	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT	
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							504	
	Type				Date		Date		Date		Contract
PM Support - Organic	MIPR	UH PMO/matrix	7051	1869	1-4Q	1139	1-4Q	1052	1-4Q	665	11776
PM Support - Contract	C/FP	O2K Contractor	3422	1425	1-3Q	749	1-4Q	697	1-3Q	459	6752
SIBR/STTR			4383			2677	1-4Q				7060
Subtotal:			14856	3294		4565		1749		1124	25588
Project Total Cost:			596190	122976		95654		33910		164784	1013514

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Programs PROJECT
504

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13																															
	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																												
UH-60M Program																																																								
(1) FRP IPR																																																								
(2) Full Rate Production Contract Award, (3) FUE																																																								
UH-60M LRIP																																																								
UH-60M OT																																																								
MYP VII PRODUCTION (UH/HH-60M NEW)																																																								
(4) UH-60M Upgrade First Flight																																																								
(5) UH-60M Upgrade LUT																																																								
UH-60M Upgrade Development																																																								
UH-60M Upgrade Cut-In																																																								
MYP VIII Production (UH/HH-60M Upgrade New)																																																								

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT 504	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
UH-60M Program	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q				
FRP IPR	3Q							
Full Rate Production Contract Award		1Q						
FUE		2Q						
Test Article Fab/Checkout								
DT/Flight Test								
UH-60M LRIP	1Q - 3Q							
UH-60M OT	1Q							
MYP VII PRODUCTION (UH/HH-60M NEW)	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q			
UH-60M Upgrade IPR								
UH-60M Upgrade First Flight		2Q - 3Q						
UH-60M Upgrade LUT		3Q - 4Q						
UH-60M Upgrade Development	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q				
UH-60M Upgrade Cut-In		4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q			
MYP VIII Production (UH/HH-60M Upgrade New)						1Q - 4Q	1Q - 4Q	
OT preparation and conduct								
Closeout of Integration and Qualification								
Full Rate Production IPR (UH-60M)								
First Unit Equipped (FUE) (UH-60M)		2Q						
UH-60M Upgrade Low Rate Cut-In		4Q						

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT D12	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D12 LONGBOW APACHE OPERATIONAL SYSTEMS DEVELOP	641		36066						36707

A. Mission Description and Budget Item Justification: Project D12, Longbow Apache Operational System Development, provides funding for the accelerated fielding of the Composite Main Rotor Blade (CMRB), the development of the initial suite of the Apache Maintenance Part Task Trainers (PTT), and the development of a Light Weight Missile Launcher. An updated state-of-the-art CMRB is in development for the Block III Apache. The effort in this project provides funding for qualification and enables accelerated fielding for the Longbow Apache Attack Helicopter Block I/II fleet. The CMRB provides twice the time on wing and provides more lift which will have a significant impact to combat operations in OIF/OEF. The development of Apache Maintenance Part Task Trainers addresses the requirements of the US Army Aviation Logistics School for additional maintenance training devices to meet the increasing volume of initial entry students for Military Occupational Specialties 15R and 15Y. The new AH-64D Maintenance PTT are: Wing PTT, Integrated Pressurized Air System PTT, Gun PTT, and Multiplex PTT. The Light Weight Missile Launcher will provide weight savings per launcher, commonality, producibility and improved electronics reliability to the Apache Block I/II fleet.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of D12.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Composite rotor blade effort for the Apache Aircraft	641		
Boeing NRE Contract -- CMRB Acceleration Development			11800
SOFSA/L3 Inc. NRE Contract -- Apache Training Devices			14400
Light Weight Missile Launcher NRE Contract			9866
Total	641		36066

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
APA, SSNs: AA6606, AA6670	1487830	818109	637343	452897	451754	582245	612912	5732820	10775910
RDTE, 0203744A, D17	118863	192453	198361	134249	101148	82528	53451		881053

Comment:

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203744A - Aircraft Modifications/Product Improvement Programs

PROJECT

D12

C. Acquisition Strategy In FY09, CMRB funding will be placed on contract as part of the Block III Phase I SDD effort. The Apache Maintenance Part Task Trainer funding will be placed on contract with L3 through SOFSA. The Light Weight Launcher (LWL) project is anticipated to be a competitively awarded FFP contract. Supporting programs to the LWL are the JAGM missile system PE 655450, other missile product improvement PE 0203802A, Hellfire system C70000, and Hellfire Mods C71500.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							D12		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Boeing NRE -- CMRB	Cost Reimb	Mesa, AZ		641				11800	1-2Q		12441	11800
SOFSA/L3 Inc. NRE - TADSS	Cost Reimb	Lexington, KY						14400	1-2Q		14400	14400
Light Weight Launcher NRE	FFP	TBD						9866	1-2Q		9866	
Subtotal:				641				36066			36707	26200
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
Project Total Cost:				641				36066			36707	26200

Schedule Profile (R4 Exhibit)

February 2008

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
	Boeing NRE Contracts -- CMRB					CMRB -- NRE																						
SOFSA/L3 INC NRE Contract -- Training Devices	Training Devices -- NRE																											
CMS Phase II Demo	Light Weight Launcher -- NRE																											
(1) Airworthiness Certification -- CMRB						Air Worthiness Cert				▲ ₁																		
(2) First Delivery -- CMRB Block I/II Fleet										CMRB First Delivery				▲ ₂														
(3) First Unit Equipped (FUE) -- CMRB Block I/II Fleet														FUE -- CMRB				▲ ₃										
(4) First Delivery IPAS PPT, Wing PPT & Multiplex PPT						1st Delivery -- IPAS/Wing				M-Plex PPTs				▲ ₄														
(5) First Delivery Gun PPT									1st Delivery -- Gun PPT				▲ ₅															

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT D12	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Boeing NRE Contracts -- CMRB			1Q - 4Q					
SOFSA/L3 INC NRE Contract -- Training Devices			1Q - 4Q					
CMS Phase II Demo			1Q - 4Q					
Airworthiness Certification -- CMRB				1Q				
First Delivery -- CMRB Block I/II Fleet					1Q			
First Unit Equipped (FUE) -- CMRB Block I/II Fleet					3Q			
First Delivery IPAS PPT, Wing PPT & Multiplex PPT				1Q				
First Delivery Gun PPT				2Q				

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT D12
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Boeing			1180				
SOSFA/L3 INC			1440				
Light Weight Launcher (TBD)			987				
Total Termination Liability Funding:			3607				



ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs						PROJECT D17	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D17 APACHE BLOCK III	118863	192453	198361	134249	110148	82528	53451	Continuing	Continuing

A. Mission Description and Budget Item Justification: Project D17, Apache Block III funding is for the non-recurring engineering (NRE), development, and testing work associated with the planned remanufacture of 634 Apache aircraft into Block III-configured aircraft (deliveries to begin in FY11). The Block III program will provide Network-Centric capabilities for 634 Apache Longbows at a critical time as the Army transitions from the current force to the Future Force (FF). Block III capability enhancements are achieved via planned technology insertions such as: FF Connectivity-Seamless Global Information Grid Communications (Interim Communications Suite embedded in an Open Systems Architecture (OSA)); extended range sensing; increased survivability; Cognitive Decision Aiding System (CDAS), which speeds critical battle tasks; improved aircraft performance: reduced Operations and Support (O&S) cost and logistics footprint, and increased aircraft readiness. As a result of United States Army transformation, emerging FF organizational and operational structure, lessons learned from Operation Enduring Freedom and Operation Iraqi Freedom, and a changing operational environment, the Modernized Apache is integral to achieving air-ground synergy during FF operations. The Block III Modernized Apache fleet, with its upgraded system architecture, will enable FF compatibility and enhanced war-fighting capability.

FY 2007 funding total includes no funding received in GWOT supplemental.

FY 2008 funding total includes no funding received in the Bridge Supplemental.

FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of D17.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Boeing NRE Contracts	82800	146000	145322
Joint Venture NRE Contracts	25000	22000	26000
Block III NRE Program Support Activities	4097	10131	14183
Operational Assessments	455	2639	6430
Management Services	6511	6298	6426
Small Business Innovative Research/Small Business Technology Transfer Programs.		5385	
Total	118863	192453	198361

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
APA, SSN AA6605	1487830	818109	637342	452897	451754	582245	41229	5732820	10204226
RDTE, PE273744D12	641		36066						36707

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203744A - Aircraft Modifications/Product Improvement Programs

PROJECT

D17

Comment:

C. Acquisition Strategy The NRE will encompass subsystem integration resulting in a Critical Design Review (CDR) and will utilize existing test aircraft, incorporate the technical insertions, and initiate appropriate qualification and flight testing. The LRIP effort will include a total quantity of 59 aircraft which will take 21 months for delivery and therefore will be two separate contractual actions (FY 09 & FY 10). These 59 Low Rate Initial Production (LRIP) aircraft are to be used for operational testing, First Unit Equipped (FUE) and training base fielding.

In FY 11, a contract for Apache Block III Lot 3 (33 aircraft), initiating full rate production, will be awarded with options for Lot 4 (48 aircraft), Lot 5 (48 aircraft) and Lot 6 (48 aircraft), and continuing through to a total of 634 aircraft.

Contractor Support is anticipated to Apache Block III Lot 6 deliveries. Training device concurrency will be maintained with each technical insertion. Advanced material procurement is planned for award in FY 09 to support the LRIP deliveries in FY 11. All NRE efforts will be awarded as Cost Reimbursable. The LRIP and production efforts will be awarded as Firm Fixed Price (FFP) and include the Advanced Procurement requirements.

As the acquisition strategy and plan unfolds Multi-Year authority may be requested for the out-years.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							D17		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Boeing Contracts	Cost Reimb	Mesa, AZ	103377	82800	1-2Q	146000	1-2Q	145361	1-2Q	279300	756838	756838
Joint Venture Contracts	Cost Reimb	Orlando, FL	49000	25000	1-2Q	22000	1-2Q	26000	1-2Q	28108	150108	150108
Lockheed Martin Contracts	Cost Reimb	Orlando, FL								18831	18831	18831
Subtotal:			152377	107800		168000		171361		326239	925777	925777
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Block III NRE Support	Various	Various Activities	1596	4097	1-3Q	15516	1-3Q	14183	1-2Q	25460	60852	60852
Subtotal:			1596	4097		15516		14183		25460	60852	60852
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Assessments, Test Integration Working Group (TWIG), TEMP, etc.	MIPR, Various	Various Activities	672	455	1-2Q	2639	1-2Q	6430	1-2Q	7351	17547	17547
Subtotal:			672	455		2639		6430		7351	17547	17547
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Management Svcs (In-House, Travel, etc.)	Various	PMO AAH, Matrix Support, AMCOM	6468	6511	1-2Q	6298	1-2Q	6426	1-2Q	21326	47029	47029

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							D17		
		Express										
Subtotal:			6468	6511		6298		6426		21326	47029	47029

Project Total Cost:			161113	118863		192453		198400		380376	1051205	1051205
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Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

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

PROJECT
D17

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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
NRE Contracts - Boeing	NRE Contracts - Boeing NRE																											
NRE Contracts - Joint Venture	NRE Contracts - Joint Venture																											
Lockheed Martin Contracts	Lockheed Martin Contracts																											
(1) Preliminary Design Review	▲ ₁ PDR																											
(2) Critical Design Review (CDR)					▲ ₂ CDR																							
(3) Limited User Test (LUT) I													▲ ₃ Limited User Test (LUT) I															
(4) Milestone C													▲ ₄ MS C															
(5) Initial Operating Capability (IOC)																					▲ ₅ IOC							

Schedule Detail (R4a Exhibit)

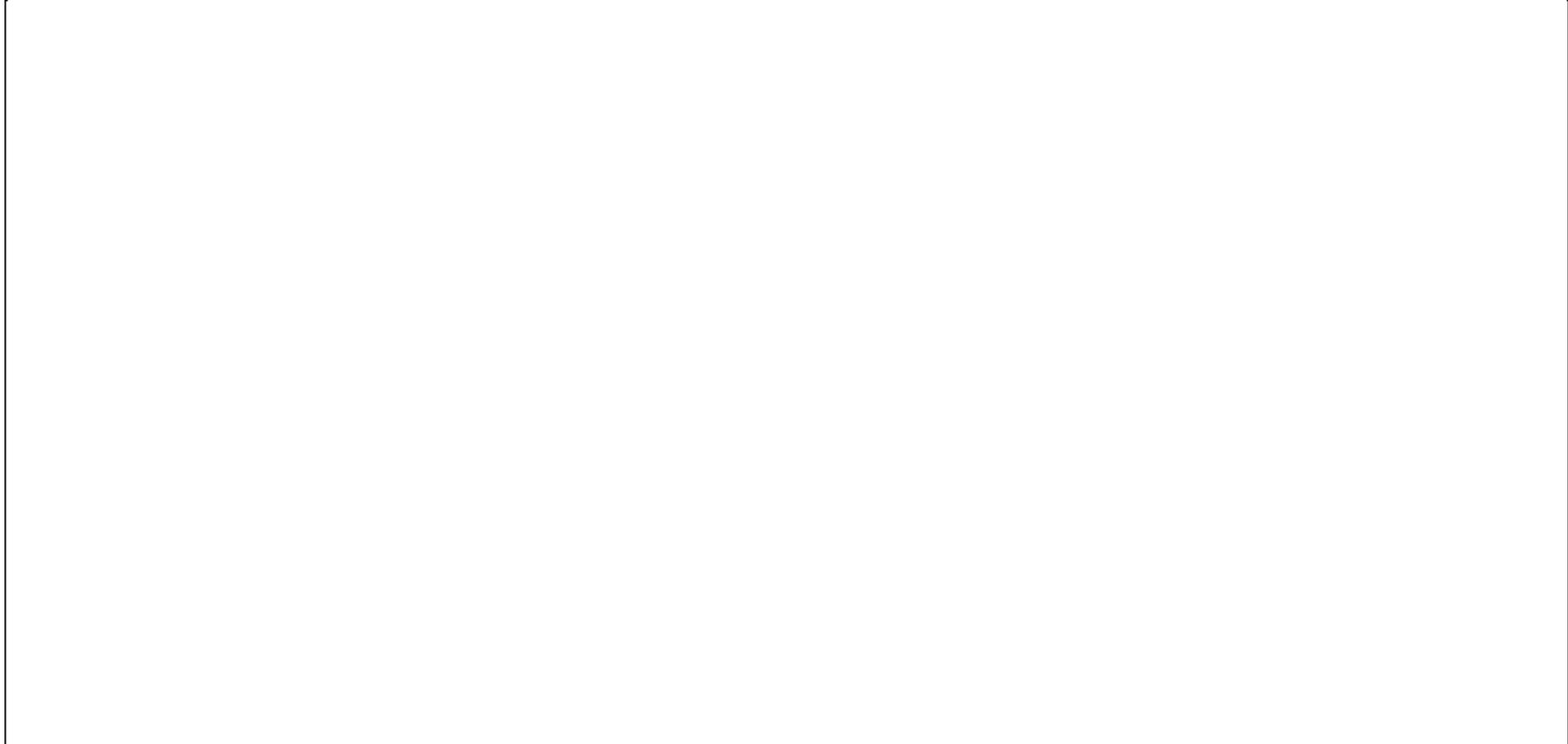
February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT D17	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
NRE Contracts - Boeing	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
NRE Contracts - Joint Venture	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
Lockheed Martin Contracts				1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q	
Preliminary Design Review	3Q							
Critical Design Review (CDR)		2Q						
Limited User Test (LUT) I				1Q				
Milestone C				3Q				
Initial Operating Capability (IOC)							2Q	

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT D17
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
D17, Apache Block III	12200	19500	19500	13500	11000	8300	5380
Total Termination Liability Funding:	12200	19500	19500	13500	11000	8300	5380



ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development			PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT D18	
COST (In Thousands)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total Cost
D18 UTILITY FW CARGO AIRCRAFT	5397	6495	3017						14909

A. Mission Description and Budget Item Justification: This Project supports Test and Evaluation of the Joint Cargo Aircraft (JCA). The RDT&E funds are to support statutorily-mandated Live Fire Test and Evaluation (LFT&E) including survivability/susceptibility assessment and Initial Operational Test and Evaluation (IOT&E). The LFT&E will involve system, subsystem- and component-level live fire testing. Additionally, survivability/susceptibility characterization assessments of nuclear, biological, chemical, and electromagnetic capabilities will be performed.

FY 2007 funding total includes no funding received in GWOT supplemental.
 FY 2008 funding total includes no funding received in the Bridge Supplemental.
 FY 2008 funding totals do not include any previously requested funding for current FY 2008 GWOT requirements, and no FY 2008 GWOT funds have been previously requested in the RDTE Project of D18.

<u>Accomplishments/Planned Program:</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Production Qualification Test (PQT)	594	1145	874
Live Fire Test & Evaluation (LFT&E) Testing	2312	5133	693
Live Fire Test & Evaluation (LFT&E) Hardware	2491		
Initial Operational Test & Evaluation (IOT&E)		36	1450
Small Business Innovative Research/Small Business Technology Transfer Programs		181	
Total	5397	6495	3017

<u>B. Other Program Funding Summary</u>	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Compl	Total Cost
A11000 UTILITY F/W CARGO AIRCRAFT	71864	155982	266222	303824	427737	466800	465600	Continuing	Continuing
USAF PE0401138F/Project 5259 Joint Cargo Aircraft	7781	19530	27001	11500	9650	19200			94662
USAF BA 02/Item No. 10b/Joint Cargo Aircraft			5500	125400	266600	538500	483600	Continuing	Continuing

Comment: The Joint Cargo Aircraft test program is a joint effort between the Army and the Air Force. Each service will provide 50% of the required funding critical to complete aircraft testing to include PQT, LFT&E and IOT&E. This agreement was approved in the Memorandum of Agreement (MOA) signed June 2006. Air Force PE: 0401138F (Joint Cargo Aircraft), Project: 5259. The Air Force RDT&E line also includes funding for Trainer Development; Engineering, Training and Logistics Studies; and Joint Development Engineering.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203744A - Aircraft Modifications/Product Improvement Programs

PROJECT

D18

C. Acquisition Strategy The Joint Cargo Aircraft's acquisition strategy is based on leveraging the commercial market. The contract was awarded in June 2007 to procure a previously developed and fielded, low-risk, commercially available aircraft and Mission Equipment Package (MEP). A protest immediately followed, which resulted in a 100 day stop work order. Program was re-started in October 07. These aircraft possess open architecture systems that will support technology insertions as improvements become available.

The JCA program was established to correct operational shortfalls with respect to time sensitive mission critical requirements, provide commonality with other aviation platforms, and replace multiple retiring aircraft systems. This aircraft addresses these shortfalls, and replaces retiring C-23 fleets, and selected C-12s.

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
7 - Operational system development			0203744A - Aircraft Modifications/Product Improvement Programs							D18		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Production Qualification Test (PQT)	MIPR	Various		594	1-2Q	1145	2-3Q	874	2-3Q		2613	2196
LFT&E Testing	MIPR	Various		2312	1-2Q	5133	2-3Q	693	2Q		8138	6147
LFT&E Hardware	C/FFP	L3 Comm Integ Sys, Greenville, Texas		2491	1Q						2491	5235
Initial Operational Test & Evaluation (IOT&E)	MIPR	TBD						643	2-3Q		643	643
Initial Operational Test & Evaluation (IOT&E)	MIPR	Army Test Evaluation Command (ATEC), Alexandria, VA				36	3Q	807	2Q		843	862
Subtotal:				5397		6314		3017			14728	15083
Remarks: Award of FY07 LFT&E Hardware and a majority of LFT&E Testing and PQT will occur in FY08 as a direct result of a 100 day stop work order necessitated by a GAO protest.												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT			
7 - Operational system development				0203744A - Aircraft Modifications/Product Improvement Programs						D18			
Small Business Innovative Research/Small Business Technology Transfer Programs							181	1-4Q				181	155
Subtotal:							181					181	155
Project Total Cost:					5397		6495		3017			14909	15238

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0203744A - Aircraft Modifications/Product Improvement Programs PROJECT
D18

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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) Milestone C	<div style="position: absolute; top: 10%; left: 15%; width: 100px; height: 20px; background-color: blue; color: white; text-align: center; font-weight: bold;">1</div> <div style="position: absolute; top: 25%; left: 15%; width: 100%; height: 20px; background-color: blue; color: white; text-align: center; font-weight: bold;">Milestone C</div> <div style="position: absolute; top: 40%; left: 25%; width: 100%; height: 20px; background-color: blue; color: white; text-align: center; font-weight: bold;">PQT</div> <div style="position: absolute; top: 55%; left: 35%; width: 100%; height: 20px; background-color: blue; color: white; text-align: center; font-weight: bold;">LFT&E</div> <div style="position: absolute; top: 70%; left: 55%; width: 10%; height: 20px; background-color: blue; color: white; text-align: center; font-weight: bold;">IOT&E</div> <div style="position: absolute; top: 85%; left: 65%; width: 100px; height: 20px; background-color: blue; color: white; text-align: center; font-weight: bold;">2</div> <div style="position: absolute; top: 90%; left: 65%; width: 100%; font-weight: bold;">FRP</div>																											
Production Qualification Test (POT)																												
Live Fire Test & Evaluation																												
Initial Operational Test & Evaluation (IOT&E)																												
(2) Full Rate Production Decision																												

Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY 7 - Operational system development		PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs					PROJECT D18	
<u>Schedule Detail</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	
Milestone C	3Q							
Production Qualification Test (PQT)	2Q - 4Q	1Q - 4Q	1Q - 3Q					
Live Fire Test & Evaluation	2Q - 4Q	1Q - 4Q	1Q - 4Q					
Initial Operational Test & Evaluation (IOT&E)			4Q	1Q				
Full Rate Production Decision				2Q				

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)	February 2008
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BUDGET ACTIVITY 7 - Operational system development	PE NUMBER AND TITLE 0203744A - Aircraft Modifications/Product Improvement Programs	PROJECT D18
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Funding in \$000							
Program	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Joint Cargo Aircraft							
Total Termination Liability Funding:							

Remarks:
The Joint Cargo Aircraft's acquisition strategy is based on leveraging the commercial market. The contract was awarded in Jun 07 to procure a previously developed and fielded, low-risk, commercially available aircraft and Mission Equipment Package (MEP). Based on this rationale, no Termination Liability Funding has been budgeted. RDTE funding in the JCA program is associated with PQT, OT and LFT&E only.