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

DATE: February 2000

BUDGET ACTIVITY: 7 - Operational System Development

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

COST (*In Thousands*)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23577	80786	95829	98634	90032	53438	97404	Continuing	Continuing
D028 Guardrail Common Sensor/Aerial Common Sensor	0	5604	11284	14655	10486	28674	72664	397800	541167
D179 CH-47D Product Improvement	0	0	0	504	0	0	0	0	504
D430 Improved Cargo Helicopter	23577	28229	37196	6581	97	0	0	0	95680
D504 UH-60A/L Black Hawk SLEP/Modernization	0	9809	29915	38506	38281	24764	24740	Continuing	Continuing
D508 Apache 2nd Generation Forward Looking Infrared (FLIR)	0	37144	17434	38388	41168	0	0	0	Continuing

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 SLEP/Modernization, and the Apache 2nd Generation Forward Looking Infrared (FLIR).

B. Program Change Summary	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000/2001 PB)	26628	51644	61033
Appropriated Value	26681	81644	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-53		
b. SBIR / STTR			
c. Omnibus or Other Above Threshold Reductions		-329	
d. Below Threshold Reprogramming	-3051		
e. Rescissions		-529	
Adjustments to Budget Years Since FY 2000/2001 PB			+34796
Current Budget Submit (FY 2001PB)	23577	80786	95829

Change Summary Explanation: Funding – FY 2001 3676 increase for Guardrail Common Sensor fielded systems Sigint enhancements.
30100 increase will initiate the RDTE phase of theUH-60 A/L Black Hawk SLEP/Modernization program.
1020 increase for Improved Cargo Helicopter.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
BUDGET ACTIVITY **7 - Operational System Development**	PE NUMBER AND TITLE **0203744A Aircraft Modifications/Product Improvement Program** PROJECT **D028**

COST (*In Thousands*)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D028 Guardrail Common Sensor/Aerial Common Sensor	0	5604	11284	14655	10486	28674	72664	397800	541167

A. Mission Description and Budget Item Justification: The Aerial Common Sensor/GUARDRAIL VII (ACS/GRVII) is an airborne intelligence collection system required to provide critical support to US-based early entry, forward deployed forces, and support the Army's seamless intelligence architecture. ACS will satisfy the Army's critical need for a worldwide, self-deployable, airborne reconnaissance, intelligence, surveillance, and target acquisition (RISTA) capability that can immediately begin operations when arriving in theater. The ACS/GRVII will merge the current Airborne Reconnaissance Low (ARL) and Guardrail Common Sensor (GRCS) into a single airborne system capable of providing a rapid response information dominance capability to Land Component Commanders required in the early 21st Century. 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. The sensors will be interoperable with the open C4ISR architecture and 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 overflight Imagery Intelligence (IMINT). ACS is primarily targeted against threat maneuver forces, logistic areas, rocket and artillery forces, air defense artillery, command control communications and intelligence nodes (C3I); and tactical fixed –wing, rotary wing and unmanned aerial vehicles. ACS/GRVII will satisfy unique Army/Land Force Commander Intelligence, Surveillance and Reconnaissance (ISR) and targeting requirements, and those of the Land Force Component of Joint and Combined Task Forces (JTF and CTF) across the spectrum of Operations.

This project is unclassified and is a cooperative effort with the Joint Airborne SIGINT Program Office (JASPO) which is developing the Low Band subsystems (LBSS) and High Band Subsystems (HBSS) to be integrated into the Aerial Common Sensor. The incorporation of the JASPO subsystems will provide compatibility to allow interoperability with the other services SIGINT platforms. The National Security Agency's Defense Cryptologic Program provides funding to support enhanced SIGINT capabilities.

The FY01 funding supports efforts to identify an airborne platform which best supports the multi-mission role of ACS and begin non-SIGINT Prime Mission Equipment (PME) development and integration efforts. FY01 Funding also supports efforts to extend the useful life/currency of the GRCS fielded systems modifying current system software to incorporate additional signals of interest. In addition to the software modifications, an upgrade implementation plan will be developed along with an Interface Control Document (ICD) that describes the connection and interface requirements for integrating GOTS/COTS hardware into the system architecture and host platform. The plan and ICD will provide a pathway to upgrade the fielded systems to intercept, recognize and locate advanced commercial, digital signals.

FY 1999 Accomplishments: Project not funded in FY 1999

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0203744A Aircraft Modifications/Product Improvement Program PROJECT D028

FY 2000 Planned Program:

- 5045 Prepare, evaluate and award contract(s) for ACS concept exploration (e.g. System design, modeling and simulation.)
- 420 Program office support
- 139 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 5604

FY 2001 Planned Program:

- 6824 Complete initial phase of ACS concept exploration contract(s). Evaluate results and award follow on contract(s) for further development, modeling and simulation of leading design.
- 178 Design evaluation and source selection
- 3395 Award contract(s) for GRCS fielded systems enhancements; modify system software to incorporate additional signals of interest. Develop implementation plan with an Interface Control Document (ICD) for system upgrades.
- 887 Program office support

Total 11284

B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost
Defense Cryptologic Program (DCP)		14725	14130	17694	19635	20678	18476		105338
Joint Airborne SIGINT program Office (JASPO)	700	1000	3000	5800	4500			0	15000
0305206/DK98 Tactical Reconnaissance				6837	4879	4837	5200	Continue	Continue

C. Acquisition Strategy: The Aerial Common Sensor development and integration contract(s) will be awarded on a competitive basis. Requirements will be to analyze/ recommend architecture to include an airframe that integrates SIGINT and non-SIGINT suites, e.g. Moving Target Indicator (MTI)/Synthetic Aperture Radar (SAR), Electro Optic/Infrared (EO/IR), etc. The contractor will be required to provide the integration analysis, modeling and simulation packages and a proposed airframe for a total system recommendation. Following the evaluation of the recommendations, new limited competitive, cost plus contract(s) will be awarded in FY2002 to begin risk reduction efforts. The contractor will be required to support the program through a milestone III approval of the aircraft and sensor suites.

The SIGINT payload for ACS will be comprised of scaled HBSS and LBSS subsystems being developed by the JASPO under separate action with additional enhancements being funded under the ACS DCP program.

The acquisition strategy for the GRCS upgrades will be through task orders against competitive omnibus contracts that team multiple contractors.

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

DATE: February 2000

BUDGET ACTIVITY: 7 - Operational System Development

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

PROJECT: D028

D. Schedule Profile	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
MS 0 Decision	4Q						
Award initial ACS Concept Exploration contract		2Q					
Award GRCS upgrade contract(s)			1Q				
ACS MS I Decision			4Q				
Award follow-on PDRR contract				1Q			
Field GRCS software modifications					2Q		
Flight test GRCS upgrades					2Q		
ACS Milestone II Decision					2Q		

ARMY RDT&E COST ANALYSIS (R-3)

DATE: **February 2000**

BUDGET ACTIVITY: **7 - Operational System Development**

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

PROJECT: **D028**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. ACS modeling, simulation & design	C-FP	TBD		5045	2Q	6824	1Q	0	11869	11869
c GRCS upgrade contract	C-CPAF	TBD				3395	1Q	Continue	Continue	Continue
d. SBIR/STTR				139						
Subtotal Product Development:				5184		10219				

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Engineering Support	FFP	Sytex; Doylestown PA		70	2Q	175	1Q	Continue	Continue	Continue
Subtotal Support Costs:				70		175				

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal Test and Evaluation:										

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Program Management	MIPR	PM, Signals Warfare		240	2Q	415	1Q	Continue	655	Continue
b. Matrix Support	MIPR	HQ, CECOM		110	2Q	475	1Q	Continue	585	Continue
Subtotal Management Services:				350		890			1240	Continue

Project Total Cost:										
			0	5604		11284		Continue	Continue	Continue

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
BUDGET ACTIVITY **7 - Operational System Development**	PE NUMBER AND TITLE **0203744A Aircraft Modifications/Product Improvement Program** PROJECT **D430**

COST (*In Thousands*)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D430 Improved Cargo Helicopter	23577	28229	37196	6581	97	0	0	0	95680

A. <u>Mission Description and Budget Item Justification</u>: The Improved Cargo Helicopter (ICH) is a program to extend 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 will be the basis for establishing remanufacture, modernization, and upgrade program to meet the readiness needs of the future for heavy lift capability. The ICH Program will include testing of the two engineering development models plus component testing for Live Fire.

FY 1999 Accomplishments:

- 20953 Awarded Engineering Manufacture Development (EMD)
- 1330 Continued In-house and program management administration
- 1294 Continued Government Test and Evaluation

Total 23577

FY 2000 Planned Program:

- 22377 Continue Engineering Manufacture Development (EMD)
- 1411 Continue In-house and program management administration
- 3700 Continue Government Test & Evaluation
- 741 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 28229

FY 2001 Planned Program:

- 30361 Continue Engineering Manufacture Development (EMD)
- 1860 Continue In-house and program management administration
- 3375 Continue Government Test & Evaluation; 2 EMD Models delivered for Testing
- 1600 TOCR

Total 37196

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

DATE: February 2000

BUDGET ACTIVITY: 7 - Operational System Development

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

PROJECT: D430

B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
APA, SSN AA0254, CH-47 ICH	0	0	83830	170426	210234	293092	289934	Cont'g	Cont'g

C. Acquisition Strategy: The ICH will sustain the 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 ICH program will be based on a three-pronged remanufacture approach which will include rebuilding the airframe, improving mission capability, and reducing vibrations to provide for longer term O&S cost reductions. There will be two LRIP lots to ramp up full rate production.

D. Schedule Profile	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
EMD Contract & Funding Increments	2nd Qtr	1st Qtr	1st Qtr	1st Qtr			
Critical Design Review (CDR)	4th Qtr						
IPF/LL			2nd Qtr				
LRIP I Award				1st Qtr			
Initial Oper Test & Eval (IOTE)				2nd Qtr			
LRIP II Award				2nd Qtr			
MS III						2nd Qtr	

ARMY RDT&E COST ANALYSIS (R-3)

DATE: **February 2000**

BUDGET ACTIVITY: **7 - Operational System Development**

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

PROJECT: **D430**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. EMD	CPIF	Various	28776	20953	Jan 99	23118	Dec 99	30361	Dec 00	Cont	103208	Cont'g
b. TOCR								1600	TBD	Cont	1600	Cont'g
Subtotal Product Development:			28776	20953		23118		31961			104808	Cont'g

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. PMO/OGA	Reimbursable	Various government	7535	1036	Qtrly	1411	Qtrly	1860	Qtrly	Cont	11842	
Subtotal Support Costs:			7535	1036		1411		1860			11842	

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total Pys Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. DT/OT	Reimbursable	Various government	2211	1126	Qtrly	1700	Qtrly	3375	Qtrly	Cont	8412	
b. Live Fire Test & Eval	Reimbursable	Contract/Govt	685	168	Qtrly	2000	Qtrly	0000	Qtrly	Cont	2853	
Subtotal Test and Evaluation:			2896	1294		3700		3375			11265	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. CAMBER/Westar	SS/FP	Huntsville, AL	3607	294	Dec 98						3901	3901
Subtotal Management Services:			3607	294							3901	3901

Project Total Cost:			42814	23577		28229		37196			131816	Cont'g

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
BUDGET ACTIVITY **7 - Operational System Development**	PE NUMBER AND TITLE **0203744A Aircraft Modifications/Product Improvement Program**
	PROJECT **D504**

COST (*In Thousands*)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D504 UH-60A/L Black Hawk SLEP/Modernization	0	9809	29915	38506	38281	24764	24740	Continuing	Continuing

A. Mission Description and Budget Item Justification: The mission of the UH-60 Black Hawk includes air assault, general support, aeromedical evacuation (MEDEVAC) and command and control. There are currently over 900 UH-60A and over 500 UH-60L model aircraft in the Army today. There will be over 1500 UH-60 Black Hawk aircraft at the end of the current planned buy in fiscal year 2005. A Utility Helicopter Fleet Modernization Analysis was conducted in 1999 to determine the most operationally effective and affordable strategy to modernize the utility helicopter fleet. The General Officer Steering Committee (GOSC) that led the analysis recommended a tiered, evolutionary modernization approach (UH-60L+ and UH-60X aircraft) to meet utility helicopter mission requirements. The UH-60L+ is the near-term evolutionary approach, buying back lift and providing digitization while reducing Operation and Support (O&S) costs and increasing readiness rates of the aging UH-60A/L fleet. The modernization effort will transition from UH-60L+ to UH-60X in FY04. The procurement of the UH-60L+ will start in FY03. Through modification of existing UH-60A/Ls, the UH-60L+ will include airframe structural improvements, a propulsion upgrade (T700-GE-700 to T700-GE-701C for the UH-60A), and a digital cockpit. In addition, the UH-60L+ will provide a common, modernized platform for UH-60Q aeromedical evacuation (MEDEVAC) helicopters by incorporating the medical mission equipment package on these aircraft.

FY 1999 Accomplished Program: Program not funded in FY 1999

FY 2000 Planned Program:

•	5226	Initiate Airframe, Avionics and Engine Prototype Design and Development
•	372	Prepare Depot Compatibility Study
•	2121	Test Planning
•	1826	Initiate Prototype Aircraft Preparation/Teardown
•	264	Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
Total	9809	

FY 2001 Planned Program:

•	8631	Conduct Airframe Prototype Design and Development
•	13050	Conduct Avionics Prototype Design and Development
•	3645	Conduct Engine Prototype Design and Development
•	4589	Test Planning
Total	29915	

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

DATE: February 2000

BUDGET ACTIVITY: 7 - Operational System Development

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

PROJECT: D504

B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Comp	Total Cost
APA Budget									
AA0492 UH-60 MODS		12962	3021	38751	54065	99492	164410	Cont	Cont

C. Acquisition Strategy: The UH-60L+ modernization is the first step in an evolutionary, tiered approach that will ultimately result in a fully ORD compliant UH-60X aircraft for first-to-fight units. An evolutionary, tiered modernization approach will meet the new requirements of increased lift, range, and survivability; plus, address the challenges of the aging fleet, such as decreasing operational readiness and increasing operating costs. The UH-60L+ will modify the existing Black Hawk to meet digitization/situational awareness requirements. It will also provide a common, modernized platform for the UH-60A/L and the UH-60Q/HH-60L MEDEVAC aircraft. Planned modifications will extend the life of the aircraft, reduce O&S costs and increase operational readiness. A streamlined acquisition strategy has been structured for the UH-60L+ program. The UH-60L+ technical solution will be defined through the development of engineering changes to incorporate airframe structural improvements, a propulsion upgrade and a digitized cockpit. These improvements will take advantage of ongoing technology development programs, the existing UH-60L engine program and the UH-60Q/HH-60L MEDEVAC program. The modified UH-60L+ lays the foundation for the UH-60X development program. Consistent with the evolutionary process, as the integration and qualification of the UH-60L+ is completed; the follow-on development of the UH-60X is initiated.

D. Schedule Profile	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Depot Compatibility Study		3-4 Q	2-3 Q					
Airframe Prototype Design and Development		3-4 Q	1-4 Q	1-3Q				
Avionics Prototype Design and Development		3-4 Q	1-4 Q	1-3Q				
Engine Prototype Design and Development		3-4 Q	1-4 Q	1-3Q				
Preliminary Design Review (airframe, avionics, engine)		4 Q						
Early User Demonstration		4 Q	1 Q					
Critical Design Review (airframe, avionics, engine)			2 Q					
Developmental Testing				2-4 Q				
Operational Test					1 Q			
Complete Manuals, Plans and Documents					2 Q			

ARMY RDT&E COST ANALYSIS (R-3)

DATE: **February 2000**

BUDGET ACTIVITY: **7 - Operational System Development**

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

PROJECT: **D504**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Airframe, Avionics and Engine Prototype design	SS/CPAF	Sikorsky Aircraft Co 30 Moffitt Street Stratford, CT 06601		5977	2 Q	20387	2Q	Cont	26364	
b. In House Engineering Support		UH PMO		579	2 Q	1976	1Q	Cont	2555	
c. In House Engineering Support		PATS Contractor		144	2 Q	492	1Q	Cont	636	
Subtotal Product Development:				6700		22855			29555	

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Engineering Support	MIPR	AMCOM		361	2 Q	1233	2Q	Cont	1594	
Subtotal Support Costs:				361		1233			1594	

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Testing	MIPR	OPTEC		1659	3 Q	3590	2Q	Cont	5249	
b. Testing	MIPR	RTTC		462	3 Q	999	2Q	Cont	1461	
Subtotal Test and Evaluation:				2121		4589			6710	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. PM Support		UH PMO		290	2 Q	989	1Q	Cont	1279	
b. PM Support		PATS Contractor		73	2 Q	249	1Q	Cont	322	
c. SBIR/STTR				264					264	
Subtotal Management Services:				627		1238			1865	

ARMY RDT&E COST ANALYSIS (R-3)

DATE: February 2000

BUDGET ACTIVITY: 7 - Operational System Development

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

PROJECT: D504

	FY 2000 Cost		FY 2001 Cost			Total Cost	
Project Total Cost:	9809		29915			39724	

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

DATE: February 2000

BUDGET ACTIVITY: 7 - Operational System Development

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

PROJECT: D508

COST (*In Thousands*)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D508 Apache 2nd Generation Forward Looking Infrared (FLIR)	0	37144	17434	38388	41168	0	0	0	Continuing

A. Mission Description and Budget Item Justification

Apache Second Generation Forward Looking Infrared (FLIR) is a U.S. Army program to develop, test, integrate and produce a Second Generation FLIR (SGF) for the Army's entire fleet of AH-64A and AH-64D aircraft. The FLIR system allows for pilotage of the aircraft and the engagement of targets during night operations and adverse weather conditions. The Apache SGF program will leverage technology already invested in electronics, sensors and optics to provide the best sensor available at the lowest cost. The SGF enhancements over the present Apache FLIR include increased range for detection, recognition and identification of targets; higher resolution for a sharper, clearer image; improved sensitivity, especially in adverse weather; increased capability to identify friend versus foe during hostilities; and increased reliability. These enhancements will improve the overall warfighting capability of the Apache aircraft by: 1) providing improved clarity and ability to fly and navigate using FLIR imagery; 2) significantly enhancing the pilot's visibility and safety while improving target designation and acquisition; and 3) improving aircraft survivability with increased standoff ranges; 4) reducing the risk of fratricide and 5) reducing the operation and support costs of the system.

FY 1999 Accomplishments: Project not funded in FY 1999

FY 2000 Planned Program:

- 32287 Award Engineering & Manufacturing Development (EMD) Contract/PDR for 2nd Generation FLIR.
- 1857 In-house & Program Management Administration/Complete Source Selection Evaluation (SSEB) for EMD Program.
- 2000 Test and Evaluation - Qualification Testing
- 1000 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)

Total 37144

FY 2001 Planned Program:

- 15362 Continue EMD Contract for 2nd Generation FLIR Development/CDR/First Prototype Delivery
- 1200 Continue in-house and Program Management Administration
- 872 Test and Evaluation - Qualification Testing

Total 17434

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

DATE: February 2000

BUDGET ACTIVITY: 7 - Operational System Development

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

PROJECT: D508

B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
APA, BA 2, AA6606, AA6607, AA0978, AA6608, Modification of Aircraft	683457	822199	776110	894640	933432	828905	523715	Cont	Cont

C. Acquisition Strategy: A cost plus incentive fee (CPIF) type contract (target award date of June 00) is anticipated through a competitive award process. Six prototypes will be designed, developed and tested. The program will culminate with qualification flight testing on the Apache Attack Helicopter. The design will be compatible with both the A and D model Apache helicopters.

D. Schedule Profile	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
SSEB				1Qtr						
Receive Proposals				2Qtr						
Contract Award				3Qtr						
PDR/CDR				4Qtr	2Qtr					
Prototype Deliveries					2Qtr	2Qtr	1Qtr			
Qual Testing						4Qtr				
Air Worthiness Release							1Qtr			
Flight Testing							3Qtr			

ARMY RDT&E COST ANALYSIS (R-3)

DATE: **February 2000**

BUDGET ACTIVITY: **7 - Operational System Development**

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

PROJECT: **D508**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. 2nd Gen FLIR Develop	C, CPIF	TBD		32287	June 00	15362	Oct 00	52656	100305	100305
b. SBIR/STTR				1000					1000	1000
Subtotal Product Development:				33287		15362		52656	101305	101305

II. Support Costs: None

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Qual, Air Worth, Demo	C, CPIF	TBD		2000	June 00	1200	Oct 00	23900	27100	27100
Subtotal Test and Evaluation:				2000		1200		23900	27100	27100

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. In-House & SSEB	NA	PEO AVN		1857	June 00	872	Oct 00	3000	5729	5729
Subtotal Management Services:				1857		872		3000	5729	5729

Project Total Cost:				37144		17434		79556	134134	134134