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

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**

COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	53411	38309	33214	19526	25144	31649	28333	25151	Continuing	Continuing
665	A/C SURV EQUIP DEV	7069	9306	0	0	0	0	0	0	0	40337
L12	SIGNALS WARFARE DEVELOPMENT (TIARA)	3723	25562	22266	9479	11459	14311	10403	10807	0	110949
L15	ARAT-TSS	1884	2106	2259	1372	1270	1267	1817	1883	Continuing	Continuing
L16	TROJAN DEVELOPMENT	1394	1335	1475	1475	1569	1570	1590	1625	Continuing	Continuing
L20	ATIRCM/CMWS	39341	0	7214	7200	10846	14501	14523	10836	0	142654

A. Mission Description and Budget Item Justification: This program element encompasses engineering and manufacturing development for tactical electronic warfare (EW), signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from hostile artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provide the Army with the capability to degrade or deny hostile forces the effective use of their communications, countermortar/counterbattery radars, surveillance radars, infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threats. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to meet tactical and Special Electronic Mission Aircraft (SEMA), attack/scout, and assault/cargo mission requirements. The Prophet program provides for the development of multifunction ground based and airborne intelligence and electronic warfare systems. Trojan will complete Proof-of-Principle R&D for specific applications in advanced threat signals processing, prototype software upgrades, high frequency (HF) algorithms for compact antenna array technology (CAAT), search and acquisition capabilities for unattended signal collectors, and new digital intelligence collection, processing and dissemination technology. The ARAT Project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon systems. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Path (TCP).

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EW DEVELOPMENT

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Exhibit R-2
Budget Item Justification

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BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**

B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	53616	22819	39759	25891
Current Budget (FY 2004/2005 PB)	53411	38309	33214	19526
Total Adjustments	-205	15490	-6545	-6365
Congressional program reductions				
Congressional rescissions	-205	-1087		
Congressional increases		16900		
Reprogrammings				
SBIR/STTR Transfer		-323		
Adjustments to Budget Years			-6545	-6365

FY2004/FY 2005 funds realigned to support higher Army priorities.

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EW DEVELOPMENT

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Budget Item Justification

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

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L12**

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	3723	25562	22266	9479	11459	14311	10403	10807	0	110949

A. Mission Description and Budget Item Justification: Prophet's primary mission is providing 24-hour Situation Development and Information Superiority to the supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet is an integral part of the Army Transformation, providing near real time (NRT) information to the Brigade Commander within his combat decision cycle. It is the tactical commander's sole organic ground based Multi-Sensor system for the Division, Stryker Brigade Combat Team (SBCT) and Armored Cavalry Regiments (ACR). Prophet provides the tactical commander with next generation Signals Intelligence/Electronic Warfare (SIGINT/EW) - radio detection finding capability, Measurement and Signature Intelligence (MASINT) and unattended ground sensors surveillance capabilities. Prophet operates in direct support (DS) as an embedded and integral part of the Future Combat System (FCS) Unit of Action (UA) maneuver element and FCS Unit of Employment (UE) 1. Prophet replaces the division level Trailblazer and Teammate legacy SIGINT systems in Block I, and TrafficJam in Block II. Prophet stationary and on-the-move direction finding information develops battlespace visualization, intelligence preparation of the battlefield (IPB) and target development for enemy and gray emitters within radio line-of-sight across the brigade area of responsibility. Block II/III will add Electronic Attack (EA) and an improved signal type detection capability during the System Development and Demonstration (SDD). This increased capability will provide the Brigade Commander with the ability to detect and suppress all types of communications anticipated in the future battlespace. Additionally, Prophet provides the ability to intercept voice communications data when on board linguists are available. This NRT information when processed provides a key component of the fused intelligence common operating picture (COP). Initially Prophet will interface with the maneuver brigade Analysis Control Team's (ACT) All Source Analysis System (ASAS)-Remote Work Stations (ASAS-RWS) via Prophet Control. Prophet Control is a surrogate for the Distributed Common Ground System-Army (DCGS-A) in Blocks I to III. Prophet Control's functionality is planned to be integrated onto the DCGS-A platform. The ACT will forward the gathered information to the division and armored cavalry Analysis Control Element's (ACE) ASAS. Prophet enables the Brigade Commander to detect signals while the vehicle is moving, a first for a Tactical SIGINT system. Prophet is being developed in a user prioritized five block approach: Block I - Electronic Support (ES) (COMINT), Block II - Electronic Attack (EA), Block III - Modern Signals (The Agile Signals, TAS), Block IV - SIGINT/MASINT Fusion and Block V - Micro-Sensors and Robotics sensor extension capabilities. The Leviathon system has been conceived to be a flexible, upgradeable, multi-faceted total system solution for SIGINT collection. System enhancements include survey and analysis tools, miniature special purpose exploitation tools, and processor intensive algorithm optimization to minimize computational times required for certain features and capabilities.

Prophet Block II/III is being developed to support integration into the Unit of Action (UA) reconnaissance and surveillance vehicles to provide SIGINT and EA sensors to support the Intelligence, Surveillance, and Reconnaissance (ISR) requirements. The Prophet System supports the Legacy to Objective transition path of the Army Transformation Campaign Plan (TCP).

This Project was provided $16.9M in FY 03 as a transfer from DERF during the FY Congressional Budget process.

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Signals Warfare Development (TIARA)

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Budget Item Justification

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

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L12**

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Prepare for and Conduct Mileston B IPR for Prophet Block II/III Contract	372	100	0	0
Award Prophet Block II/III System Development and Demonstration (SDD) Contract	0	21530	17519	1000
Prepare for and conduct Prophet Block II/III DT/IOT&E	250	1857	4422	0
Complete Foreign Comparative Test (FCT) Report/Evaluation	375	0	0	0
Conduct SSEB(s) for Prophet Block II/III and Enhancements contracts	409	450	100	400
Conduct follow-on Foreign Comparative Test (FCT)/Risk Mitigation for Prophet Block III	1742	0	0	0
Develop Prophet Control	575	650	0	0
Prepare for Prophet Block II/III MS C	0	0	225	0
Award Prophet Block Enhancements Contract	0	0	0	8079
Conduct of Leviathon Studies and Prototype Development	0	975	0	0
Totals	3723	25562	22266	9479

B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
BZ7326 Prophet Ground	15625	34273	3175	13316	13190	25081	30013	26422	Continuing	Continuing
PE 603774 Tactical SIGINT Payload (TSP) (Project D131)	6962	6670	0	0	0	0	0	0	0	13632
PE 030885G Defense Cryptological Program for PROPHET	2057	1694	3826	4088	4339	3103	7068	7068	Continuing	Continuing
PE Defense Crytoplogical Program for TSP	1571	1657	1517	2129	4042	4438	7550	7550	0	30454
PE 375204 Tactical SIGINT Payload (TSP) Development (Project 11B)	0	0	5771	5898	19714	21409	10906	11302	Continuing	Continuing

C. Acquisition Strategy: The Prophet Acquisition Strategy is structured to optimize system capability while reducing risk and streamlining business and engineering processes. Block I ES (COMINT) Engineering and Manufacturing Development (EMD) was a sole source effort which leveraged off existing COTS equipment. Follow-on Block II (EA) and Block III (Modern Signals - The Alternate Signal (TAS)) efforts will be combined and will follow an evolutionary acquisition process and will be competitively awarded.

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Signals Warfare Development (TIARA)

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Budget Item Justification

ARMY RDT&E COST ANALYSIS(R-3)

February 2003

BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L12**

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 . Prophet Block II/III SDD Contract	C-CPIF	TBS	0	20143	2Q	15369	1Q	1000	1Q	0	36512	0
b . Prophet Block Tech Insertion Contract	CPXF	TBS	0	0		0		6129	1Q	Continue	6129	Continue
c . Leviathon Development and Prototyping	CPFF	Sensytech, Newington, VA	0	975	2Q	0		0		0	975	0
Subtotal:			0	21118		15369		7129		Continue	43616	Continue

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 . Matrix Support	MIPR	CECOM, Fort Monmouth NJ	4015	1641	1-2Q	1775	1Q	1050	1Q	Continue	8481	0
b . Contractor Eng & Spt	FFP	Sytex Group, Eatontown, NJ	403	200	1-2Q	100	1Q	100	1Q	Continue	803	0
c . Contractor Eng & Spt	FFP	CACI, Eatontown, NJ	675	750	1-2Q	600	1Q	400	1Q	Continue	2425	0
d . TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	250	250		0		0		0	500	250

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Signals Warfare Development (TIARA)

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Cost Analysis

BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L12**

II. Support Cost (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
Subtotal:			5343	2841		2475		1550		Continue	12209	250

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 . Prepare for and Conduct Prophet Block II/III DT/IOTE	MIPR	EPG/AEC	0	1078	2-4Q	3922	1Q	0			0	5000	0
b . Prophet BlockTech Insertion beyond II/III	MIPR	EPG/AEC	0	0		0		300	2Q	Continue	Continue	0
Subtotal:			0	1078		3922		300		Continue	Continue	0

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Signals Warfare Development (TIARA)

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ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L12**

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	In-House	PM, Signals Warfare, Fort Monmouth NJ	4022	525	1-4Q	500	1-4Q	500	1-4Q	Continue	5547	0
Subtotal:			4022	525		500		500		Continue	5547	0
Project Total Cost:			9365	25562		22266		9479		Continue	Continue	Continue

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Signals Warfare Development (TIARA)

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Schedule Profile Detail (R-4a Exhibit)

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L12**

Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Conduct Prophet Block III Risk Mitigation/Foreign Cooperative Test II	1-3Q							
Conduct SSEB for Prophet Block II/III SDD Contract	4Q	1-2Q						
Milestong B Decision for Prophet Block II/III SDD Contract		2Q						
Award Prophet Block II/III SDD Contract		2Q						
Conduct Block II/III DT/IOT&E			3-4Q					
Milestone B for Prophet Tech Insertion			4Q					
Conduct SSEB for Prophet Tech Insertion Contract			4Q	1Q				
Milestone C Decision for Prophet Block II/III				1Q				
Conduct DT/IOTE for Prophet Tech Insertion					2-4Q	1-4Q		
Milestone C for Prophet Tech Insertion							1Q	
Conduct Leviathon Studies and Develop Prototypes		2-4Q	1Q					

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

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L15**

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
L15 ARAT-TSS	1884	2106	2259	1372	1270	1267	1817	1883	Continuing	Continuing

A. Mission Description and Budget Item Justification:: The Army Reprogramming Analysis Team (ARAT) Target Sensing System (TSS) supports the tactical Commander by providing timely/rapid reprogramming of any Army supported, joint, allied service, Army Electronic Warfare (EW) Integrated Reprogramming (EWIR) or Measurement Intelligence (MASINT) based target acquisition, target engagement, or vehicle/aircraft survivability equipment (ASE). ARAT provides software changes not readily possible by operator input, to respond to rapid deployments or changes in the threat environment. The ARAT Software Engineering (SE) Project Office coordinates the development of ARAT infrastructure to support the needs of all TSS developers and users; develops the capability to conduct real-time hardware and software technical enhancements of validated threat changes; examines and identifies the best technical approaches for development of field reprogramming capabilities of ATSS with commonality at a desired end-state; supports the developments of flagging models; participates in the operational and developmental test design of ATSS; and supports Service and JCS Reprogramming Exercises.

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Engineering Development (TSS Survey): Complete the Survey initiated in FY02 to identify TSS requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.	0	475	250	150
Engineering Development (TSS Survey): Initiate a Target Sensing System (TSS) Survey requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.	350	0	0	0
Intelligence Support (Platform Intelligence Integration): Analyze capability of using data from US Army Aviation Platform systems to increase tactical situational awareness as well as providing additional intelligence collection data. This would include evaluation of system modifications.	450	0	350	300

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	February 2003

BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L15**

Accomplishments/Planned Program (continued)	FY 2002	FY 2003	FY 2004	FY 2005
Intelligence Support (Platform Intelligence Integration): Building on the work completed in FY02 determine individual platform benefits vs. potential costs to upgrade systems on each Aviation platform. Initiate lab testing of potential system updates to verify the additional benefit and identify intelligence collection methodology to integrate the collected intelligence data onto an intelligence network.	0	500	647	246
Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to complete the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure. In addition, initiate converting the US Army flagging models over to the new database structure.	0	275	0	200
Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to initiate the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure.	200	0	100	0
Dissemination (EWOSS/MLV): Complete an upgrade of EWOSS 2000 communications tool for the field user by improving the classified connection capability and integrating all aspects of current MLV software as modules within the basic structure. In addition, develop training aids to facilitate the field user being able to successfully use this software without attending a formal training course.	200	0	200	0
Dissemination (EWOSS/MLV): Using the upgraded EWOSS 2000 software, define and internally alpha test a common MLV system with flexible data protocols to support the associated cables and protocols required for each US Army TSS being reprogrammed. After completing alpha testing, initiate beta testing with field users including the use of the training aids developed in FY02.	0	300	100	0
Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Define requirements for a common intelligence database analysis and MDS tool for use by ARAT-TA (Kelly and Eglin AFBs) and ARAT-SE. The functionality must include common user interface, intelligence inputs, modular threat analysis and MDS generator tools, and output formats to support intelligence reporting, RF scenarios inputs and MDS inputs for EWOSS/MLV to leverage the use of existing tools such as the Major Radar Database (MRDB) as much as practical.	684	0	250	200
Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Using the requirements definition completed in FY02, initiate the development of the common intelligence database analysis and MDS tool. Complete the user interface, database structure, output formats, and placeholders for the internal threat analysis and MDS generator tools.	0	556	362	276
Totals	1884	2106	2259	1372

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	February 2003	
BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L15**

B. Other Program Funding Summary: Not applicable for this item.

C. Acquisition Strategy: The efforts to be funded in this project will require a combination of systems specific and high-tech knowledge. The contractual services portion for the project will be obtained from both the CECOM SEC competitive omnibus and the RDEC High Tech contracts.

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L15

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 . Labor (internal Gov't)	TBD	CECOM, Fort Monmouth, NJ	550	650	1-4Q	550	1-4Q	550	1-4Q	Continue	Continue	Continue
b . Travel	TBD	TBD/Various sites	49	45	1-4Q	60		60		Continue	Continue	Continue
Subtotal:			599	695		610		610		Continue	Continue	Continue

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 . Development Support (INSCOM Full Spectrum)	TBD	TBD/Various sites	300	400	1-3Q	400		265	1-4Q	Continue	Continue	Continue
b . Development Support (CECOM RDEC T&E CECOM SEC Omnibus)	TBD	TBD/Various sites	576	599	1-4Q	337		186	1-4Q	Continue	1698	Continue
Subtotal:			876	999		737		451		Continue	Continue	Continue

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ARAT-TSS

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ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L15**

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 . Labor and ranges	TBD	TBD	0	0		500	1-4Q	0		0	500	0
Subtotal:			0	0		500		0		0	500	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 . Labor (Int and Contact)	TBD	CECOM and INSCOM	409	412	1-4Q	412	1-4Q	311	1-4Q	Continue	Continue	Continue
Subtotal:			409	412		412		311		Continue	Continue	Continue
Project Total Cost:			1884	2106		2259		1372		Continue	Continue	Continue

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ARAT-TSS

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L16**

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
L16 TROJAN DEVELOPMENT	1394	1335	1475	1475	1569	1570	1590	1625	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project is a Tactical Intelligence and Related Activities (TIARA) program. TROJAN RDT&E supports TROJAN Classic XXI (TCXXI) future capabilities to fulfill the Army's need for a worldwide, deployable, remotable, intelligence, surveillance and reconnaissance (ISR) support that can dynamically execute operations from sanctuary-based to deployed assets in theater. In support of the Objective Force and Future Combat System (FCS), TCXXI will provide soldiers with a real-world, hands-on, live and near-real time SIGINT training environment sustaining, maintaining and enhancing their military occupational specialty (MOS) proficiencies and specific target expertise. This operational readiness training will fulfill the Army's larger intelligence training requirement via a secure collaborative architecture.

A key factor for success the Objective Force and FCS will be the ability to collect, process and use information about an adversary while preventing similar information from being disclosed. TROJAN is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. TROJAN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. This project engineers, tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded TROJAN systems, prior to the acquisition of those technologies. As part of the Objective C4ISR Architecture, these capabilities will enable processing and dissemination of real-time intelligence data from various sources to form the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that TROJAN keeps pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Conduct operational testing and evaluation of previously developed special processing devices and software with enhanced signal processing algorithms.	0	429	0	0
Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms.	500	0	500	500
Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.	0	500	0	0
Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGA technologies.	256	0	575	725
Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).	0	406	400	250

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BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L16**

Accomplishments/Planned Program (continued)	FY 2002	FY 2003	FY 2004	FY 2005
Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.	638	0	0	0
Totals	1394	1335	1475	1475

B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA BA0331 Trojan	4857	4873	5052	5186	5261	5365	0	0	0	30594

C. Acquisition Strategy: Not applicable for this item.

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TROJAN DEVELOPMENT

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Budget Item Justification

ARMY RDT&E COST ANALYSIS(R-3) — **February 2003**

BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L16**

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 . Develop Prototype QRC Receiver packages	MIPR	CECOM I2WD Ft Monmouth	256	0		575	2-3Q	725	2-3Q	Continue	1556	Continue
b . Develop DF Capabilities for TROJAN RRG	MIPR	CECOM I2WD Ft Monmouth	0	406	2Q	400	2-3Q	250	1-2Q	Continue	1056	Continue
c . Investigate Compression /processing technologies	MIPR	CECOM I2WD Ft Monmouth	638	0		0		0		Continue	Continue	Continue
Subtotal:			894	406		975		975		Continue	Continue	Continue

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 . Aquire & Apply muliti bandwidth compr Algorithm	MIPR	CECOM I2WD FT Monmouth	0	500	3Q	0		0		Continue	Continue	Continue
Subtotal:			0	500		0		0		Continue	Continue	Continue

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TROJAN DEVELOPMENT

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Cost Analysis

ARMY RDT&E COST ANALYSIS(R-3)

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L16**

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 . Integrate/test hardware/software	MIPR	CECOM I2WD FT Monmouth	500	0		500	2-3Q	500	2-3Q	Continue	1500	Continue
b . Operational test/eval of enhanced SIG Processing	MIPR	CECOM I2WD Ft Monmouth	0	429	3Q	0		0		Continue	Continue	Continue
Subtotal:			500	429		500		500		Continue	Continue	Continue

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: | | | 1394 | 1335 | | 1475 | | 1475 | | Continue | Continue | Continue |

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TROJAN DEVELOPMENT

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Exhibit R-3
Cost Analysis

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

February 2003

BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L20**

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
L20 ATIRCM/CMWS	39341	0	7214	7200	10846	14501	14523	10836	0	142654

A. Mission Description and Budget Item Justification: The ATIRCM/CMWS is a U.S. Army program to develop, test, and integrate defensive infrared (IR) countermeasures capabilities into existing, current generation host platforms, which includes the MH-60/MH-47, AH-64D, UH-60 and CH-47F, for more effective protection against a greater number of IR guided missile threats than afforded by currently fielded IR countermeasures. The US Army operational requirements concept for IR countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). It is an integrated warning and countermeasure system to enhance aircraft survivability against IR guided threat missile systems. The core element of the SIIRCM concept is the Advanced Threat Infrared Countermeasure (ATIRCM), Common Missile Warning System (CMWS) program. The ATIRCM/CMWS, a subsystem to a host aircraft, is an integrated ultra-violet (UV) missile warning system and an IR Lamp/Laser Jamming and Improved Countermeasure Dispenser (ICMD).

The CMWS also functions as a stand-alone system with the capability to detect missiles and provide audible and visual warnings to the pilot(s), and, when installed with the ICMD, activates expendables to provide a degree of protection. ATIRCM/CMWS is the key infrared survivability system for Army Objective Force aircraft. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

FY04/05 funding completes operational test support as well as initial P3I efforts in support of laser miniaturization.

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Continue EMD contract T&M efforts for testing and producibility in support of the ATIRCM/CMWS.	16067	0	0	0
Continue Modeling & Simulation efforts for ATIRCM/CMWS	600	0	0	0
Purchase 6 each ATIRCM systems for MH-47 and MH-60 IOT&E.	16373	0	0	0
Complete development and operational testing for the ATIRCM MH-47 configuration.	3704	0	0	0
Test facility	2597	0	0	0
Operational test support and Log Demo	0	0	5500	0
Laser Miniaturization	0	0	1714	7200
Totals	39341	0	7214	7200

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	February 2003

BUDGET ACTIVITY **5 - System Development and Demonstration**	PE NUMBER AND TITLE **0604270A - EW DEVELOPMENT**	PROJECT **L20**

B. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
APA, BA 4 AZ3507 ASE Infrared CM	3565	0	75713	86691	97929	101608	136714	129897	2551068	3183185
OSD Procurement, PE 1160444BB	39824	23800	0	0	0	0	0	0	0	63624

C. Acquisition Strategy: The EMD contract competitively awarded in FY 1995. The AAE approved the Limited Procurement Urgent (LPU) for acquisition of the CMWS capability for Special Operations Force (SOF) aircraft in Mar 02. Renewed funding supports a new acquisition strategy of buying CMWS separately from ATIRCM, while installing A-kits on all modernized aircraft. In addition to operational test support, FY 04 as well as FY05 RDTE funds support ATIRCM/CMWS P3I efforts. The P3I efforts incorporate growth to Tier 2 and 3 (missiles) threats, miniaturization, all band laser capabilities, incorporation of multi-band fiber optic, and provides enhanced flare capability for evaluation of integrated countermeasures capability.

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ATIRCM/CMWS

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Exhibit R-2A
Budget Item Justification

ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**L20**

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 . Thiokol (AIRCMM)	C/CPIF	Brigham City, UT	1563	0		0		0		0	1563	1563
b . BAE Systems (ATIRCM) EMD basic contract	C/CPAF	Nashua, NH	23574	0		0		0		0	23574	171784
c . BAE Systems (ATIRCM) T&M efforts	C/CPFF	Nashua, NH	40412	0		0		0		0	40412	40412
d . BAE Systems (ATIRCM) 6 ATIRCM	SS/CPFF	Nashua, NH	14640	0		0		0		0	14640	14640
e . Cowley (ATIRCM)	C/CPFF	Chantilly, VA	100	0		0		0		0	100	100
f . Test Facility - Amherst	C/CPFF	Huntsville, AL	1300	0		0		0		0	1300	1300
g . Other	Various	Various	1062	0		0		0		0	1062	1062
h . ATIRCM Miniaturization	TBS	TBS	0	0		1714	2Q	5939	1Q	0	7653	0
Subtotal:			82651	0		1714		5939		0	90304	230861

Remarks: FY99 & Prior funding in Project 665

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ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Modeling & Simulation Contractor Support	C/FFP	Huntsville, AL	600	0		0		0		0	600	600
b . Contractor Support	C/FFP	Huntsville, AL	9554	0		0		0		0	9554	9554
c . Matrix Support	MIPR	CECOM, Fort Monmouth NJ; AMCOM, Huntsville, AL	3055	0		696	1Q	696	1Q	0	4447	0
Subtotal:			13209	0		696		696		0	14601	10154

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 . EPG support	MIPR	Ft. Huachuca, AZ	5925	0		0		0		0	5925	0
b . Operational Test Center IOT&E support	MIPR	Various	6732	0		3159	1Q	0		0	9891	0
c . ATTC test support	MIPR	Fort Rucker, AL	2504	0		0		0		0	2504	0
d . Neer/Thomsen/O2K contractor test support	C/FFP	Huntsville, AL	2663	0		0		0		0	2663	2663

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ARMY RDT&E COST ANALYSIS(R-3)

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BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT	PROJECT L20

III. Test and Evaluation (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
e . Westar test support	C/FFP	Huntsville, AL	559	0		0		0		0	559	559
f . PM ITTS/46TH Test Wing (Eglin AFB)	MIPR	Eglin AFB, FL	2800	0		0		0		0	2800	
g . RTTC	MIPR	Redstone Arsenal, AL	400	0		1080	1Q	0		0	1480	0
h . Other	MIPR		105	0		0		0		0	105	0
Subtotal:			21688	0		4239		0		0	25927	3222

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 . Project Management	In house support	PM AES, Huntsville, AL	5336	0		565	1-4Q	565	1-4Q	0	6466	0
Subtotal:			5336	0		565		565		0	6466	0
Project Total Cost:			122884	0		7214		7200		0	137298	244237

Schedule Profile Detail (R-4a Exhibit)

February 2003

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L20

Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Start/complete ATIRCM/CMWS developmental testing for SOA.	1-4Q							
Contract award of 6 ATIRCM in support of MH47 and MH-60 IOT&E	2Q							
ATIRCM/Jam Head LRIP		3Q						
IOT&E			2-4Q					
ATIRCM Miniaturization development			2-4Q	1-4Q	1-4Q	1-4Q		
Tier 2/3					1-4Q	1-4Q	1-4Q	1-4Q
Full Rate Production (CMWS)				1Q				
Full Rate Production (ATIRCM)				2Q				