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

February 2002

BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - Engineering and manufacturing development	**0604270A - EW DEVELOPMENT**

	COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	64241	53616	22819	39759	25891	27894	32104	Continuing	Continuing
665	A/C SURV EQUIP DEV	23109	8081	9932	12837	12827	12891	12868	Continuing	Continuing
L12	SIGNALS WARFARE DEVELOPMENT (TIARA)	2939	1731	9289	23133	10180	12122	15067	Continuing	Continuing
L15	ARAT-TSS	0	1893	2202	2297	1396	1295	2586	Continuing	Continuing
L16	TROJAN DEVELOPMENT	0	1394	1396	1492	1488	1586	1583	Continuing	Continuing
L20	ATIRCM/CMWS	38193	40517	0	0	0	0	0	0	78710

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).

B. Program Change Summary	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2002 PB)	69413	57010	36274
Appropriated Value	70056	54010	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	-394	0
b. SBIR / STTR	-1814	0	0
c. Omnibus or Other Above Threshold Reprogrammings	0	0	0
d. Below Threshold Reprogramming	-3359	0	0
e. Rescissions	-642	0	0
Adjustments to Budget Years Since FY2002 PB	0	0	-13455
Current Budget Submit (FY 2003 PB)	64241	53616	22819

FY 2003 FUNDS REALIGNED TO SUPPORT HIGHER ARMY PRIORITIES.

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

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and manufacturing development	**0604270A - EW DEVELOPMENT**	**665**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
665 A/C SURV EQUIP DEV	23109	8081	9932	12837	12827	12891	12868	Continuing	Continuing

A. Mission Description and Budget Item Justification: Aircraft Survivability Equipment Development provides for the development and system integration of Radio Frequency (RF) Countermeasures Aircraft Survivability Equipment (ASE) to achieve survivability, reduce vulnerability, and enhance combat effectiveness to fulfill all Army aircraft mission requirements. Equipment will increase combat effectiveness for mission accomplishment by reducing or eliminating the ability of threat air defense systems to detect, hit, track, damage or destroy Army aircraft. The program funds test and type classification for the production and fielding of RF systems, and integrates with infrared, radar, laser and optical/electro-optical and other on-board sensors. Efforts in development include new or upgraded systems to counter monopulse, millimeter wave, pulse doppler and continuous wave radars. Continual adjustments are made to this program to meet the changing and evolutionary nature of technology and threat. This program has joint service applications coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTCG/AS), as well as NATO applications coordinated through DOD. This project also provides the technical base for electronic warfare equipment for Apache, Blackhawk, Chinook, Comanche and Special Operations Aircraft. The Suite of Integrated Radio Frequency Countermeasures (SIRFC) system is necessary to the survival of the AH-64, MH-47E, MH-60K, RC-12K, EH-60, UH-60 and CH-47D aircraft. The Air Force Special Operations Command (AFSOC) selected SIRFC as the CV-22 EW bus controller and sensor fusion processor. The SIRFC has application to Army Special Operations Aircraft, Air Force and Navy aircraft. The SIRFC system key capabilities include advanced threat radar warning, advanced threat radar jammer, sensor data fusion and lightweight modular design. This system supports the Legacy to Objective transition path of the Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 9007 Conduct Production Engineering Planning/Technology Insertion/Obsolescence
- 6399 Complete EMD
- 4885 Conduct Development Testing/Limited User Testing
- 1990 Conduct Contractor Flight Testing
- 406 Conduct Benefield Anechoic Facility Testing
- 350 Conduct Radio Frequency Simulation System Testing
- 72 Continue in-house and program management administration

Total 23109

FY 2002 Planned Program

•	3345	Continue Technology Insertion Program/P3I
•	4236	Conduct Risk Reduction Flight Testing
•	100	Conduct Software Integration Lab Testing
•	400	Continue in-house and program management administration
Total	8081	

FY 2003 Planned Program

•	5876	Continue Technology Insertion Program/P3I
•	2643	Conduct Initial Operational Test & Evaluation
•	924	Conduct Technical Insertion Verification Testing
•	489	Continue in-house and program management administration
Total	9932	

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
APA, BA 4 AZ3508 ASE	0	32576	0	0	0	0	0	0	35603
APA, BA 2 AA0720 ASE Modifications	5046	0	0	0	0	0	0	0	13839
OSD Procurement, PE 1160444BB	0	0	25800	52800	63600	47400	50100	0	239700

C. Acquisition Strategy: The SIRFC LRIP decision is scheduled for the 3rd Quarter of FY02 and will be a sole-source award.

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Technology Insertion/P3I	3Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Complete EMD	4Q						
Complete Limited User Test (LUT)	4Q						
Low Rate Initial Production (LRIP)		3Q					
Complete Initial Operational Test & Evaluation			3Q				

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SIRFC EMD Contract	C/CPAF	ITT Corp, Clifton, NJ	95042	5979	2Q	0		0		0	101021	128941
b . EMD Support	MIPR	CECOM, Ft. Monmouth, NJ	0	420	1-4Q	0		0		0	420	420
c . Initiate Technology Insertion/P3I	C/CPFF	ITT Corp, Clifton, NJ	233	0		0		0		0	233	233
d . Conduct PEP/Technology Insertion/Obsolescence	C/CPFF	ITT Corp, Clifton, NJ	0	9000	3Q	0		0		0	9000	9000
e . PEP/Technology Insertion/Obsolescence Support	MIPR	CECOM, Ft. Monmouth, NJ	0	7	2Q	0		0		0	7	7
f . Continue Technology Insertion Program/P3I	C/CPFF	ITT Corp, Clifton, NJ	0	0		3063	2Q	5671	1Q	0	8734	8734
g . Technology Insertion/P3I Support	MIPR	CECOM, Ft. Monmouth, NJ	0	0		282	2Q	205	1Q	0	487	487
Subtotal:			95275	15406		3345		5876		0	119902	147822

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BUDGET ACTIVITY
5 - Engineering and manufacturing development

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PROJECT
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Conduct Development Testing/Limited User Testing	C/CPFF	Research Analysis & Maintenance Inc., El Paso, TX	541	1452	3-4Q	0		0		0	1993	1993
b . Conduct Development Testing/Limited User Testing	C/CPFF	Boeing, Mesa, AZ	75	1570	2Q	0		0		0	1645	1645
c . Conduct Development Testing/Limited User Testing	MIPR	Multiple	448	1863	1-3Q	0		0		0	2311	2311
d . Conduct Contract Flight Testing	C/CPFF	Research Analysis & Maintenance Inc., El Paso, TX	0	1070	1-3Q	0		0		0	1070	1070
e . Conduct Contractor Flight Testing	MIPR	Multiple	0	920	1-3Q	0		0		0	920	920
f . Conduct Benefield Anechoic Facility Testing	MIPR	Air Force Flight Test Center, Edwards AFB, CA	227	406	1-2Q	0		0		0	633	633

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BUDGET ACTIVITY
5 - Engineering and manufacturing development

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
g . Radio Frequency Simulation System Test	C/CPFF	Simulation Technologies Inc., Huntsville, AL	212	350	3Q	0		0		0	562	562
h . Conduct Risk Reduction Flight Testing	MIPR	Multiple	0	0		4236	2-3Q	0		0	4236	4236
i . Conduct Software Integration Lab Testing	MIPR	CECOM, Ft. Monmouth, NJ	0	0		100	2Q	0		0	100	100
j . Conduct Initial Operational Test & Evaluation	MIPR	Operational Test Command, Ft. Hood, TX	0	0		0		2643	3Q	0	2643	2643
k . Conduct Technical Insertion Verification Testing	MIPR	Multiple	0	0		0		924	2Q	0	924	924
Subtotal:			1503	7631		4336		3567		0	17037	17037

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BUDGET ACTIVITY
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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	MIPR	Various	232	72	1-4Q	400	1-4Q	489	1-4Q	0	1193	1193
Subtotal:			232	72		400		489		0	1193	1193
Project Total Cost:			97010	23109		8081		9932		0	138132	166052

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and manufacturing development	**0604270A - EW DEVELOPMENT**	**L12**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	2939	1731	9289	23133	10180	12122	15067	Continuing	Continuing

A. Mission Description and Budget Item Justification: Product Manager Prophet is responsible for two programs PROPHET and the Tactical SIGINT Payload (TSP). Prophet's primary mission is providing 24-hour Situation Development and Information Superiority to the direct supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet is an integral part of the Army Transformation, providing a force multiplier to the Brigade Commander's scheme of maneuver for the Interim and Objective Force. It is the tactical commanders sole organic ground based Multi-Sensor system for the divisions and its brigades. Prophet provides the tactical commander with next generation Signals Intelligence/Electronic Warfare (SIGINT/EW - radio detection finding capability), Measurement and Signature Intelligence (MASINT ? vehicle and personnel identification) and unattended ground sensors surveillance capabilities. Prophet operates in direct support (DS) to the maneuver brigade at Division, Brigade Combat Team (BCT), Armored Cavalry Regiments (ACR) and Separate Infantry Brigade (SIB). 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 line-of-sight across the brigade area of responsibility. Initially Prophet will interface with the maneuver brigade Analysis Control Team's (ACT) Common Ground Station (CGS) and/or ASAS-Remote Work Stations (ASAS-RWS) via Prophet Control. The ACT will forward the gathered information to the division and armored cavalry Analysis Control Element's (ACE) All Source Analysis System (ASAS). Ultimately Prophet will interface with the Distributed Common Ground Station-Army (DCGS-A) at the brigade level. Additionally, Prophet provides near-real-time enemy situation awareness and intercepted voice communications data, when on board linguists are available, which is translated into actionable intelligence, a key component to the fused intelligence common operating picture (COP). Block I will start fielding in 4QFY02 to BCT 1 and 2 and continue in FY03, completing in 1QFY05. Block I will provide modern signal detection capabilities with expanded frequency coverage and fast setup/teardown. Prophet fielding will enable the Brigade Commander to detect signals while the vehicle is moving, a first for a Tactical SIGINT system. Prophet will be developed in a user prioritized five block approach: Block I - Electronic Support (ES) (COMINT), Block II - Electronic Attack (EA), Block III - Low Probability of Intercept (LPI), Block IV - SIGINT/MASINT Fusion and Block V - Micro-Sensors and Robotics sensor extension capabilities.

The Tactical Signals Intelligence Payload (TSP) is currently in the Component Advanced Development (CAD) phase. TSP is a UAV mounted SIGINT/EW sensor that detects enemy and gray radio frequency (RF) emitters. TSP will provide the Land Commander with a deep looking SIGINT/EW system capable of detecting, identifying, locating and geo-locating RF emitters throughout the Area of Operation (AO). TSP will use the Distributed Common Ground System-Army (DCGS-A) vehicle, as its processing and control vehicle. The sensor data will be passed via a Tactical Common Data Link (TCDL) to DCGS-A for display; processing and dissemination to the Division Analysis Control Element (ACE). The TSP electronic emitter information will be fused in the ACE with other sensors [i.e., Prophet, Electro-optical/ Infrared (EO/IR), Moving Target Indicator (MTI), Synthetic Aperture Radar (SAR), Corps Aerial Common Sensor (ACS)] to provide precise targeting information in near real time (NRT).

The TSP Component Advanced Development (CAD) phase in FY02/03 focuses on demonstrating payloads that could satisfy the objective system requirements and identify which requirements will be pursued during the System Development and Demonstration (SDD) Phase. FY03 funds three CAD contractors leveraging DARPA and other service software efforts, to develop varying capability payloads for flight demonstration in FY03. This information provides the input for the SDD competitive procurement contract and Milestone B Decision in FY04. This approach minimizes technical risks associated with the development effort and identifies mature capabilities. The Prophet System supports the Legacy to Objective with TSP supporting the Objective transition path of the Army Transformation Campaign Plan (TCP).

FY 2001 Accomplishments:

- 1241 Completed Prophet Block I ES (COMINT) DT/IOT&E and Block II EA Characterization Test
- 156 Continued Risk Mitigation for Prophet Block III LPI
- 1542 Risk Mitigation & Demonstration of Data Transport Capabilities between Prophet, TSP and DCGS-A

Total 2939

FY 2002 Planned Program

- 275 Complete Risk Mitigation for Prophet Block III LPI
- 272 Prepare for and conduct Milestone B IPR for Prophet Block III LPI Contract
- 584 Conduct SSEB for Prophet Block III/II
- 600 Conduct follow-on Foreign Cooperative Test (FCT)

Total 1731

FY 2003 Planned Program

- 8671 Award Prophet Block III LPI System Development and Demonstration (SDD) Contract
- 618 Prepare for Prophet Block III LPI DT

Total 9289

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA (SSN BZ9750)	1683	1731	1655	2676	2672	1707	3679	0	26454
OPA (SSN BZ7326)	11168	15613	20226	3243	22615	17501	95687	Continuing	Continuing
RDTE (PE 63774 131) - Tactical SIGINT Payload (TSP) only	6936	8000	7000	0	0	0	0	0	21936
RDTE PROPHET DCP (030885G)	7775	3916	3357	5377	6267	8050	7597	Continuing	Continuing
RDTE (PE 35204 11B) - Tactical SIGINT Payload (TSP) Development	0	0	0	5868	23711	20107	11850	Continuing	Continuing

C. Acquisition Strategy: The Prophet and the Tactical SIGINT Payload (TSP) Acquisition Strategies are structured to optimize system capability while reducing risk and streamlining business and engineering processes. Prophet is being developed using a Block Approach consisting of: Block I, Electronic Support (ES) COMINT; Block II, Electronic Attack (EA); Block III, Low Probability of Intercept (LPI); Block IV, SIGINT/MASINT Fusion; and Block V, Micro-Sensors and Robotics. Block I ES (COMINT) Engineering and Manufacturing Development (EMD) was a sole source effort which leveraged off existing COTS equipment. Block II EA EMD was awarded as a competitive contract in 3Q FY00. Block III LPI, will be a competitive award in FY03. Blocks IV and V will also be competitively awarded. The TSP Component Advanced Development (CAD) phase is under PE 63774 131. The TSP System Development and Demonstration Phase contract is currently planned to be competitively awarded, funding will be under PE 35204 11B.

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Conduct Prophet Block I ES (COMINT) IOTE	1Q						
Conduct Prophet Block II EA Characterization Test	2Q						
Received Milestone C Production Decision for Prophet Block I ES (COMINT)	2Q						
Conduct Prophet Block III/II Component Advanced Development Phase		1-3Q					
Conduct SSEB for Prophet Block III LPI SDD Contract		2-4Q					
Milestone B Decision for Prophet Block III LPI SDD Contract		4Q					
Award Prophet Block III LPI SDD Contract			1Q				
Milestone B Decision for Tactical SIGINT Payload (TSP) SDD				2Q			

D. Schedule Profile (continued)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Award Tactical SIGINT Payload (TSP) SDD Contract				3Q			
Conduct SSEB for Prophet IV SIGINT/MASINT Fusion SDD Contract			2-4Q				
Milestone B for Prophet Block IV SIGINT/MASINT Fusion				4Q			
Award Prophet Block IV SIGINT/MASINT Fusion SDD Contract					1Q		
Milestone C Decision for Prophet Block III LPI					1Q		
Award Prophet Block III LPI Production Contract					1Q		
Conduct Prophet Block IV SIGNT/MASINT Fusion IOT&E							3Q
Conduct Tactical SIGINT Payload IOT&E							3Q
Milestone C for Prophet Block IV SIGINT/MASINT Fusion							4Q

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Y2K for GBCS/MEWSS	C-CPFF	LMFS, Owego, NY	250	0		0		0		0	250	250
b . Refurbish HMMWV for Prophet	MIPR	Tobyhanna Army Depot, PA	1384	0		0		0		0	1384	1384
c . EA Study	C-CPFF	Rockwell Collins, Cedar Rapids, IA	315	0		0		0		0	315	315
d . Prophet Blocks I/II integration efforts to support the Army Transformation Strategy	C-CPFF	Delfin Sys Corp, Santa Clara, CA	1551	0		0		0		0	1551	1551
e . Prophet Block I ES (COMINT) Contract	C-CPFF	Delfin Sys Corp, Santa Clara, CA	3140	0		0		0		0	3140	3140
f . Prophet Block II EA Contract	C-FFP	Rockwell Collins, Cedar Rapids, IA	3767	0		0		0		0	3767	3767
g . Risk Mitigation UAV	T&M	BAE, Landsdale, PA	809	0		0		0		0	809	809
h . Risk Mitigation UAV	MIPR	PM UAV, AL	742	0		0		0		0	742	742
i . Risk Mitigation & Demonstration of Data Transport Capabilities	SS-CPFF	L3Comm, Salt Lake City, Utah	0	955	3Q	0		0		0	955	955

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Prophet Block III LPI SDDP Contract	C-CPXF	TBD	0	0		0		7671	1Q	Continue	Continue	Continue
k . Prophet Block III Risk Mitigation	MIPRs	Various	0	156	3Q	275	1Q	0		0	431	431
l . Prophet Studies & Analysis	MIPR	EPG, AZ	1490	0		0		0		0	1490	1490
Subtotal:			13448	1111		275		7671		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	HQ, CECOM, NJ	1320	470	1Q	750	1Q	250	1Q	Continue	Continue	Continue
b . Contractor Eng & Spt	FFP	Sytex; Doylestown PA	303	0		100	1Q	0		0	403	403
c . Contractor Eng & Spt	FFP	CACI; Falls Church VA	325	0		0		0		0	325	325
d . ASARC Spt	T&M	Computer Science Corp, Falls Church, VA	86	0		0		0		0	86	86

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	100	50	3Q	100	1Q	0		0	250	250
f . SSEB Support	MIPR	Various	0	0		170	3-4Q	0		0	170	170
g . Contractor Eng & Spt	TBD	TBD	0	0		0		200	1Q	Continue	Continue	Continue
Subtotal:			2134	520		1120		450		Continue	Continue	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Demonstrate COMINT & EA subsystems for Prophet	MIPR	Various	1015	0		0		0		0	1015	1015
b . Conduct Prophet Block I DT/IOT&E and Characterzation Test	MIPR	EPG, AZ	3594	0		0		0		0	3594	3594
c . Conduct Prophet Block I/II DT/IOT&E	MIPR	Various	2033	0		0		0		0	2033	2033
d . Prepare for Prophet Block III DT	MIPR	Various	0	0		0		618	3Q	Continue	Continue	Continue

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Prophet Block I ES (COMINT) DT/IOTE	T&M	Delfin Systems Corp, Santa Clara, CA	323	0		0		0		0	323	323
Subtotal:			6965	0		0		618		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-House	PM, Signals Warfare, NJ	1766	1308	1Q	336	1Q	550	1Q	Continue	Continue	Continue
Subtotal:			1766	1308		336		550		Continue	Continue	Continue
Project Total Cost:			24313	2939		1731		9289		Continue	Continue	Continue

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and manufacturing development	**0604270A - EW DEVELOPMENT**	**L15**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L15 ARAT-TSS	0	1893	2202	2297	1396	1295	2586	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.

FY 2002 Planned Program

- 350 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.
- 450 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.
- 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 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.

FY 2002 Planned Program (Continued)

- 693 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.

Total 1893

FY 2003 Planned Program

- 475 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.

- 500 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.
- 275 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.
- 300 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.
- 652 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.

Total 2202

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.

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Engineering Development		2-4Q	1-4Q	1-2Q	1-2Q	1-2Q	1Q
Intelligence Support		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Database Support		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Dissemination		3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Engineering Development, Intelligence Support, Database Support, & Dissemination		2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Develop Relational DB for new threats to include Blue Signals			1-4Q	1-4Q	1-4Q		
Transmission Paths.			2-4Q	1-4Q			
Support Army and Joint Contingencies and Exercises in the area of Rapid reprogramming of TSS		2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L15

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (internal Gov't)	TBD	CECOM, Fort Monmouth, NJ	0	0		550	2-4Q	650	1-4Q	Continue	Continue	Continue
b . Travel	TBD	TBD/Various sites	0	0		49	2-4Q	45	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		599		695		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support (CECOM SEC Omnibus)	TBD	TBD/Various sites	0	0		300	2-3Q	400	1-3Q	Continue	Continue	Continue
b . Development Support (CECOM RDEC T&E)	TBD	TBD/Various sites	0	0		585	2-4Q	695	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		885		1095		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L15

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (Int and Contact)	TBD	CECOM and ARAT-TA/LIWA	0	0		409	2-4Q	412	1-4Q	Continue	Continue	Continue
Subtotal:			0	0		409		412		Continue	Continue	Continue
Project Total Cost:			0	0		1893		2202		Continue	Continue	Continue

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

February 2002

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - Engineering and manufacturing development	**0604270A - EW DEVELOPMENT**	**L16**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
L16 TROJAN DEVELOPMENT	0	1394	1396	1492	1488	1586	1583	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project is a Tactical Intelligence and Related Activities (TIARA) program. A key factor in modern warfare is the ability to collect, process and use information about an adversary while preventing him from obtaining similar information. 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. The process that will enable the United States to win the battlefield information war is referred to as digitization. This capability will allow us to process and disseminate real-time intelligence data from various sources; it forms the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that the TROJAN system keep pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threats.

FY 2002 Planned Program

- 500 Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms.
- 256 Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP technologies.
- 638 Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.

Total 1394

FY 2003 Planned Program

- 429 Conduct operational testing and evaluation of previously developed special processing devices and software with enhanced signal processing algorithms.
- 500 Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.
- 467 Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).

Total 1396

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
OPA BA0331	4225	4857	4873	5052	5186	5261	5365	0	42545

C. Acquisition Strategy: Not applicable for this item.

D. Schedule Profile: Not applicable for this item.

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L16

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop Prototype QRC Receiver packages	MIPR	CECOM I2WD Ft Monmouth	0	0		256	2Q	0		Continue	Continue	Continue
b . Develop DF Capabilities for TROJAN RRG	MIPR	CECOM I2WD Ft Monmouth	0	0		0		467	2Q	Continue	Continue	Continue
c . Investigate Compression /processing technologies	MIPR	CECOM I2WD Ft Monmouth	0	0		638	3Q	0		Continue	Continue	Continue
Subtotal:			0	0		894		467		Continue	Continue	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Aquire & Apply muliti bandwidth compr Algorithm	MIPR	CECOM I2WD FT Monmouth	0	0		0		500	3Q	Continue	Continue	Continue
Subtotal:			0	0		0		500		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

February 2002

BUDGET ACTIVITY
5 - Engineering and manufacturing development

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L16

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Integrate/test hardware/software	MIPR	CECOM I2WD FT Monmouth	0	0		500	3Q	0		Continue	Continue	Continue
b . Operational test/eval of enhanced SIG Processing	MIPR	CECOM I2WD Ft Monmouth	0	0		0		429	3Q	Continue	Continue	Continue
Subtotal:			0	0		500		429		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Project Total Cost:			0	0		1394		1396		Continue	Continue	Continue