ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

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

	COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	18106	33397	41655	33144	29999	26499	28086	0	280892
665	A/C SURV EQUIP DEV	4205	7236	9160	4097	4098	5174	5691	0	48962
L12	Signals Warfare Development (TIARA)	4089	12879	14685	10684	11099	5174	5174	0	110595
L15	ARAT-TSS	1340	1238	1297	1862	1928	2070	2069	0	16066
L16	TROJAN DEVELOPMENT	1442	1530	1608	1630	1664	1705	1748	0	14071
L20	ATIRCM/CMWS	7030	10514	14905	14871	11210	12376	13404	0	91198

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 provides 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 Army Reprogramming Analysis Team (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.

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B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2006)	16515	32179	36032
Current BES/President's Budget (FY 2007)	18106	33397	41655
Total Adjustments	1591	1218	5623
Congressional Program Reductions		-146	
Congressional Rescissions		-336	
Congressional Increases		1700	
Reprogrammings	1591		
SBIR/STTR Transfer			
Adjustments to Budget Years			5623

FY05 Funds realigned to support Prophet Block III SDD efforts. FY 2006 Congressional Increase to Signal Warfare Development of $1.7 Million for Blue Marauder Enhanced Systems.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**665**

COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
665 A/C SURV EQUIP DEV	4205	7236	9160	4097	4098	5174	5691	0	48962

A. Mission Description and Budget Item Justification: The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve radio frequency (RF) ASE for Army aviation. Milestone Decision Authority (MDA) approved phase 1 of a phased/incremental path forward, this decision was concurred upon by the user and HQDA.

Phase I upgrades the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V)1 Radar Signal Detecting Set through modernization and reduced parts count. Along with improved maintainability and reliability, performance will be enhanced via increased processing speed and expanded memory. These improvements will result in faster response time, better dense environment capability and improved parameter measurement. Phase 1 serves to make the currently fielded system viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3. Phase 2 initiates development of an improved digital Radar Warning Receiver (RWR) and Phase 3 adds active Electronic Countermeasures (ECM) for selected aircraft.

FY 07 funding completes testing of the AN/APR-39A(V)1 upgrade and begins development of the digital Radar Warning Receiver (RWR).

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
In-house and program management administration	705	755	988
Phase I Product Development (AN/APR-39A(V)1 Upgrade)	3500	5481	0
Phase II Product Development (Digital RWR)	0	0	6172
Testing (Qualification, Chamber, etc.)	0	1000	2000
Total	4205	7236	9160

B. Other Program Funding Summary	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
AZ3511 SIRFC	0	3651	21125	36564	24003	49152	49237	CONT	CONT

C. Acquisition Strategy The Army Radio Frequency (RF) Aircraft Survivability Equipment (ASE) is managed by Program Director ASE (PD ASE) for integration and installation on Army Aviation platforms. PD ASE proposed a three phased path forward commensurate with user priorities and life cycle management philosophy. Phase 1, approved by MDA, upgrades the currently fielded AN/APR-39A(V)1 Radar Signal Detecting Set which is employed by approximately 3,000 aircraft; awarded sole source via ECP to the existing contractor of the APR-39A. Phase 2 develops an improved digital Radar Warning Receiver for modernized Army platforms by capitalizing on emerging

technologies to provide enhanced aircrew situational awareness. Phase 3 will develop and integrate active Electronic Countermeasures jamming capability for select aircraft. Competition will be considered for the future phases.

ARMY RDT&E COST ANALYSIS (R3)

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BUDGET ACTIVITY
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PROJECT
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AN/APR-39(V)1 Upgrade	FFP	Northrop Grumman San Jose, CA	0	3500	3Q	5481	1Q	0		0	0	0
Digital Radar Warning Receiver (RWR)	Comp	TBD	0	0		0		6172	2Q	0	0	0
Subtotal:			0	3500		5481		6172		0	0	0

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Huntsville, AL	0	602	1Q	645	1Q	869	1Q	0	0	0
Contractor Support	C/FFP	Huntsville, AL	0	71	1Q	78	1Q	78	1Q	0	0	0
Subtotal:			0	673		723		947		0	0	0

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	ATEC, Alexandria, VA	0	0		250	2-4Q	750	1-2Q	0	0	0
Flight Test/Range Support	MIPR	ECR, Naval Air Warfare Center-WPNS, China Lake, CA	0	0		500	3-4Q	1250	1-2Q	0	0	0
Chamber/E3 Test and Support	MIPR	AED AMCOM	0	0		250	3-4Q	0		0	0	0
Subtotal:			0	0		1000		2000		0	0	0

IV. Management Services	Contract	Performing Activity &	Total	FY 2005	FY 2005	FY 2006	FY 2006	FY 2007	FY 2007	Cost To	Total	Target

ARMY RDT&E COST ANALYSIS (R3)

February 2006

BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
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	Method & Type	Location	PYs Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Complete	Cost	Value of Contract
Project Management	In-House	PD ASE	0	32	1-4Q	32	1-4Q	41	1-4Q	0	0	0
Subtotal:			0	32		32		41		0	0	0
Project Total Cost:			**0**	**4205**		**7236**		**9160**		**0**	**0**	**0**

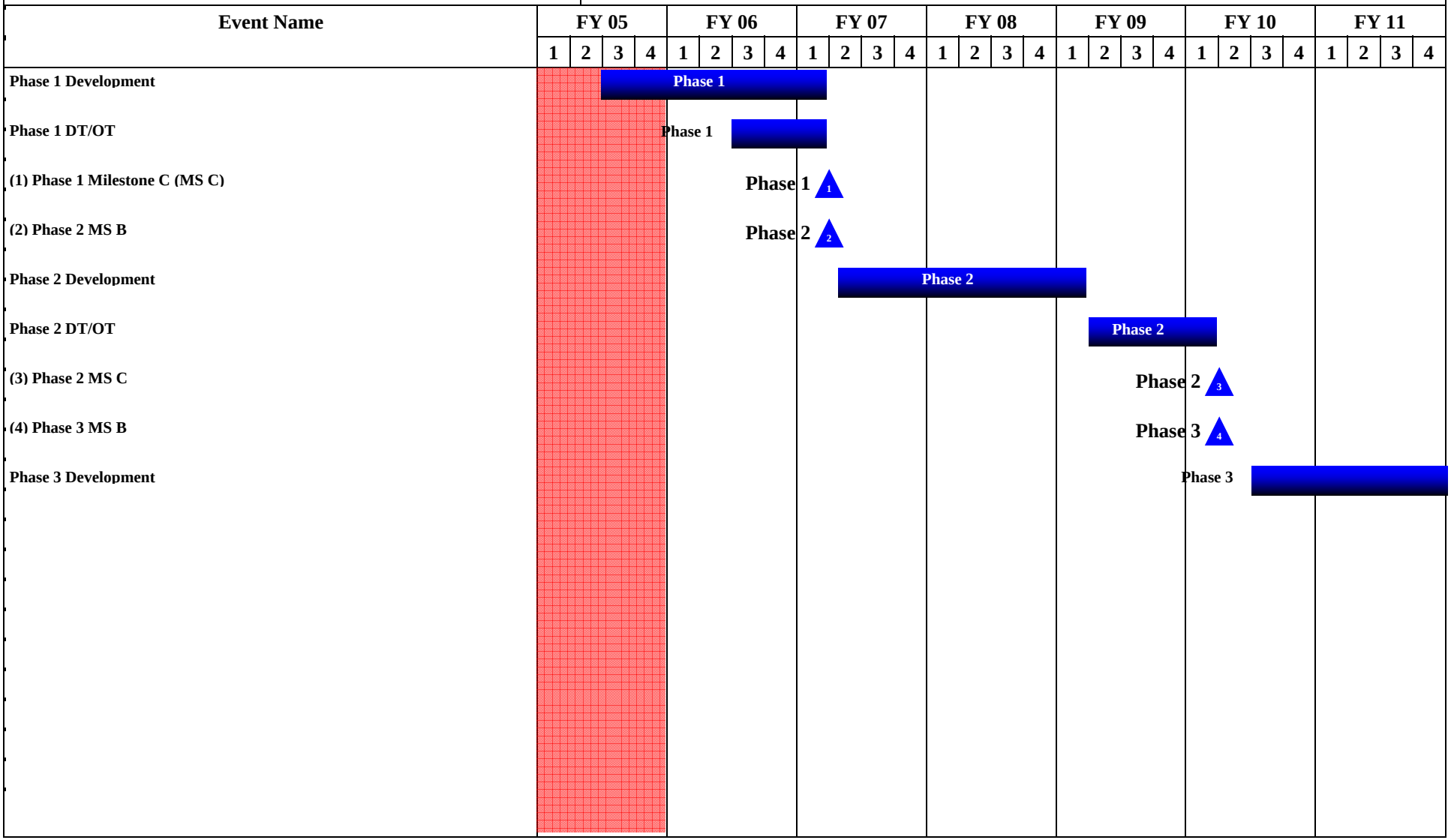
Schedule Profile (R4 Exhibit)

February 2006

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
665



Schedule Detail (R4a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604270A - EW DEVELOPMENT**	**665**

Schedule Detail	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Phase 1 Development	3-4Q	1-4Q	1Q				
Phase 1 DT/OT		3-4Q	1Q				
Phase 1 Milestone C (MS C)			2Q				
Phase 2 MS B			2Q				
Phase 2 Development			2-4Q	1-4Q	1Q		
Phase 2 DT/OT					2-4Q	1Q	
Phase 2 MS C						2Q	
Phase 3 MS B						2Q	
Phase 3 Development						3-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

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

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L12	Signals Warfare Development (TIARA)	4089	12879	14685	10684	11099	5174	5174	0	110595

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 Signals Intelligence/Electronic Warfare (SIGINT/EW) system for the Division, Brigade Combat Team (BCT), Stryker Brigade Combat Team (SBCT) and Armored Calvary Regiments (ACR). Prophet provides the tactical commander with the next generation SIGINT/EW - radio detection/direction finding and electronic attack capabilities. 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. 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). The ACT forwards 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 functionality will be resident within the Future Combat System (FCS) and Prophet developed technology as well as Tactics, Techniques and Procedures (TTPs) will be leveraged for the FCS program. Prophet is being developed in a user prioritized block approach: Block I - Electronic Support (ES) (SIGINT), Block II - Electronic Attack (EA), and Block III - Modern Signals. Prophet Block III adds the ability to address modern signals.

FY2007 Funds continue development of Block III, with DT and IOT&E testing in the second half of FY07 to support a FRP Decision in the 1QFY08.

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
Prophet Block II and III System Development and Demonstration (SDD)	2573	11779	11887
Prepare for and conduct Prophet Block II and III DT/IOT&E	1116	1100	2398
Prepare for Prophet Block II and III LRIP MS C, LUT & FRP decision	400	0	400
Total	4089	12879	14685

B. Other Program Funding Summary	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
BZ7326 Prophet Ground (TIARA)	96994	96536	96532	120382	115587	101507	100926	CONT	CONT
PE 030885G Defense Cryptological Program for PROPHET	4015	4040	2872	6565	6560	6781	7116	CONT	CONT
BZ9751 Special Purpose Systems (TIARA) (Prophet Only)	1374	482	3816	2351	2439	2610	3138	CONT	CONT

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 (SIGINT) 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) efforts were combined into a single SDD phase following an evolutionary acquisition process. Block II/III SDD was competitively awarded in 2QFY03. Following MS C review the Block II(EA) entered LRIP, contract awarded under Cost Plus Incentive Fee, and Block III continued in the SDD phase (using current SDD contract). A Block III (Interim) capability was approved for production under a CPIF contract.
Prophet P3I efforts will utilize competitive contracting to the maximum extent possible.

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604270A - EW DEVELOPMENT

PROJECT
L12

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prophet Block II/III SDD Contract	C-CPIF	General Dynamics Decision Systems, Scottsdale, AZ	30380	2741	1Q	7885	2Q	9573	1Q	0	50579	0
Prophet Block II/III GFE	FFP	Titan Systems	1768	0		0		0		0	1768	0
Prophet Modeling and Simulation	C/T&M	CACI, Alexandria, VA	1000	0		250	2Q	350	1Q	0	1600	0
Leviathon Development and Prototyping	CPFF	Sensytech, Newington, VA	963	0		0		0		0	963	0
Subtotal:			34111	2741		8135		9923		0	54910	0

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CECOM, Fort Monmouth NJ	6907	0		463	1-2Q	486	1Q	0	7856	0
Contractor Eng & Spt	C/T&M	Sytex Group, Eatontown, NJ	708	0		150	2Q	150	1Q	0	1008	0
Contractor Eng & Spt	C/T&M	CACI, Eatontown, NJ	2425	0		0		0	1Q	0	2425	0
TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	603	0		0		0		0	603	0
Contractor Eng & Spt	C/T&M	Dynetics, Huntsville, AL	60	0		0		0		0	60	0
Contractor Eng & Spt	C/T&M	DSCI, Eatontown, NJ	0	0		114	1Q	120	1Q	0	234	0
Contractor Eng & Spt	C/T&M	TBD	0	0		918	2Q	992	1Q	0	1910	0
Subtotal:			10703	0		1645		1748		0	14096	0

III. Test And Evaluation	Contract Method &	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award	FY 2006 Cost	FY 2006 Award	FY 2007 Cost	FY 2007 Award	Cost To Complete	Total Cost	Target Value of

ARMY RDT&E COST ANALYSIS (R3)

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

	Type				Date		Date		Date			Contract
Prepare for and Conduct Prophet Block II and III DT, LUT/IOTE	MIPR	EPG/AEC	5654	1100	1Q	2512	1-3Q	2398	1Q	0	11664	0
Subtotal:			5654	1100		2512		2398		0	11664	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management	In-House	PM, Signals Warfare, Fort Monmouth NJ	5504	248	1-4Q	587	1-4Q	616	1-4Q	0	6955	0
Program Support	MIPR	ASPO, Alexandria, VA	204	0		0		0		0	204	0
Subtotal:			5708	248		587		616		0	7159	0
Project Total Cost:			**56176**	**4089**		**12879**		**14685**		**0**	**87829**	**0**

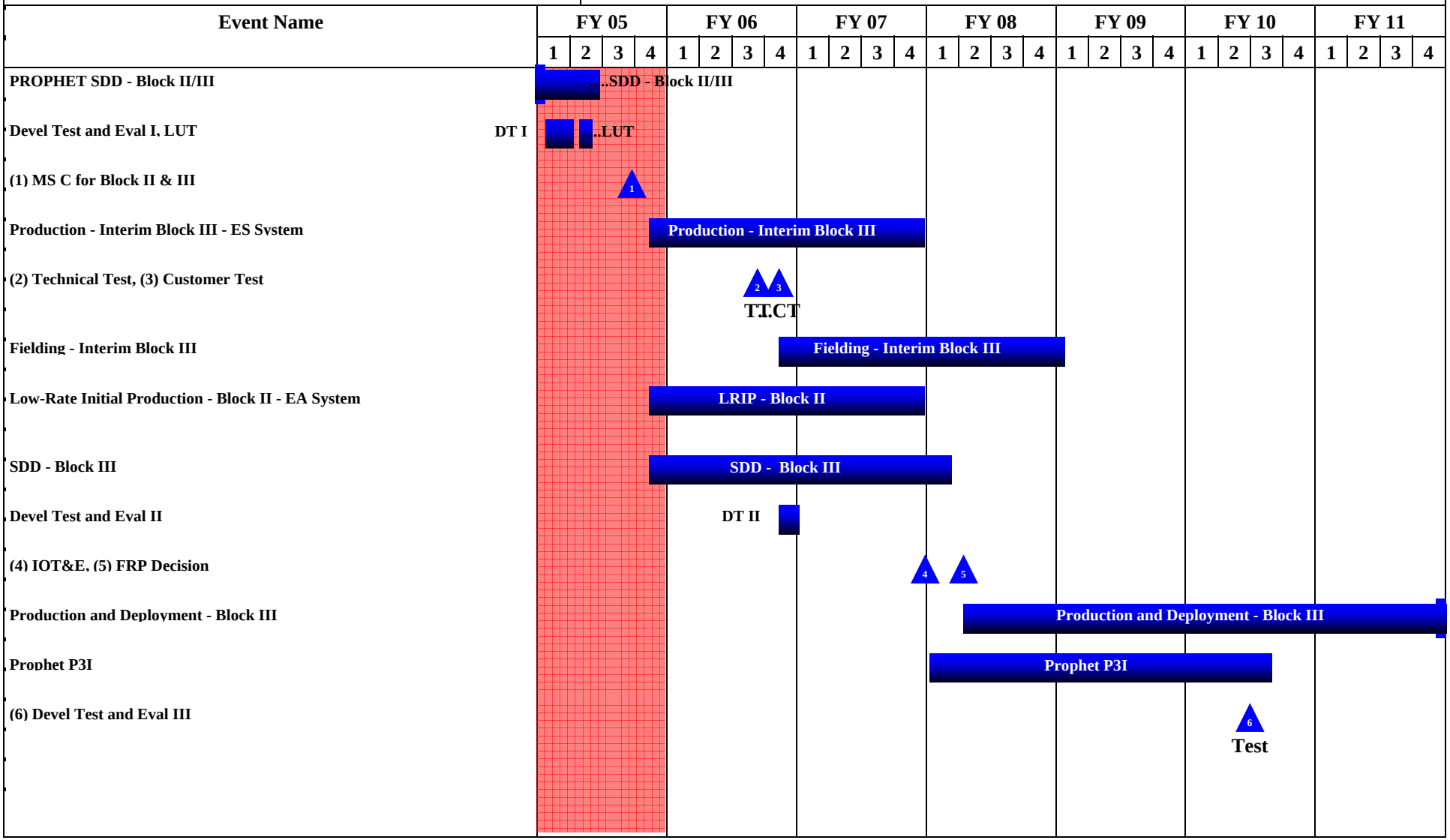
Schedule Profile (R4 Exhibit)

February 2006

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L12



Schedule Detail (R4a Exhibit)

February 2006

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

Schedule Detail	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct Block II/III DT/LUT	1-2Q						
Milestone C PROPHET Block II & III	3Q						
Production - Interim Block III - ES System	4Q	1-4Q	1-4Q				
Technical Test		3Q					
Customer Test		4Q					
Fielding - Interim Block III - ES System		4Q	1-4Q	1-4Q	1Q		
Low-Rate Initial Production - Block II - EA System	4Q	1-4Q	1-4Q				
SDD - Block III	4Q	1-4Q	1-4Q	1Q			
Developmental Test and Evaluation		4Q	1Q				
IOT&E				1Q			
FRP Decision				2Q			
Production and Deployment - Block III				2-4Q	1-4Q	1-4Q	1-4Q
Prophet P3I				1Q	1-4Q	1-3Q	
Developmental Test and Evaluation						2Q	

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

COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L15 ARAT-TSS	1340	1238	1297	1862	1928	2070	2069	0	16066

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 2005	FY 2006	FY 2007
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.	150	150	172
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.	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.	288	250	250
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.	246	252	255
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.	181	150	130
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.	0	0	0
Dissemination (EWOSS/MLV): Complete an upgrade of EWOSS 2000 communications tool for the field user by improving the classified	0	0	0

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.			
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	0	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.	200	200	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.	275	236	290
Total	1340	1238	1297

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 (R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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0604270A - EW DEVELOPMENT

PROJECT
L15

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Labor (internal Gov't)	Labor (internal Gov't)	CECOM, Fort Monmouth, NJ	1647	518	1-4Q	480	1-4Q	502	1-4Q	Continue	0	Continue
Travel	Travel	TBD/Various sites	154	60		60	1-4Q	60	1-4Q	Continue	334	Continue
Subtotal:			1801	578		540		562		Continue	334	Continue

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Development Support (INSCOM Full Spectrum)	Development Support (INSCOM)	TBD/Various sites	1100	265	1-4Q	303	1-4Q	325	1-4Q	Continue	1993	Continue
Development Support (CECOM RDEC T&E CECOM SEC Omnibus)	Development Support (CECOM)	TBD/Various sites	1512	186	1-4Q	412	1-4Q	390	1-4Q	Continue	2500	Continue
Subtotal:			2612	451		715		715		Continue	4493	Continue

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Labor and ranges	TBD	TBD	500	0		0		0		0	500	0
Subtotal:			500	0		0		0		0	500	0

IV. Management Services	Contract Method &	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award	FY 2006 Cost	FY 2006 Award	FY 2007 Cost	FY 2007 Award	Cost To Complete	Total Cost	Target Value of

ARMY RDT&E COST ANALYSIS (R3)

February 2006

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L15

	Type				Date		Date		Date			Contract
Labor (Int and Contact)	TBD	CECOM and INSCOM	1233	311	1-4Q	0		0		Continue	Continue	Continue
Subtotal:			1233	311		0		0		Continue	Continue	Continue
Project Total Cost:			**6146**	**1340**		**1255**		**1277**		**Continue**	**Continue**	**Continue**

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

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

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L16	TROJAN DEVELOPMENT	1442	1530	1608	1630	1664	1705	1748	0	14071

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 2005	FY 2006	FY 2007
Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms.	500	150	300
Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.	0	150	100
Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGA technologies.	692	302	527
Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).	250	0	400
Develop hardware/software interface for TCXXI system to ONEROOF storage system	0	350	0
Develop specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy & throughput capacity and system management capabilities; Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.	0	578	281
Total	1442	1530	1608

B. Other Program Funding Summary	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA BA0331 Trojan	5719	6067	7557	7627	7757	7878	8000	0	50605

C. Acquisition Strategy This Acquisition Strategy for the TROJAN Classic XXI System supported by TROJAN RDT&E is to adapt and leverage from Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) products. Additionally leverage off of development by DoD and other Government agencies to the greatest extend possible. TROJAN RDT&E is used to fund the development of enhancing these technologies to meet specific user requirements. The funding for production and fielding of these capabilities are funded under TROJAN BA0331.

ARMY RDT&E COST ANALYSIS (R3)

February 2006

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 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Develop Prototype QRC Receiver packages	MIPR	CERDEC I2WD Ft Monmouth	1021	842	2-3Q	302		527		Continue	1983	Continue
Develop DF Capabilities for TROJAN RRG	MIPR	CERDEC I2WD Ft Monmouth	250	0	1-2Q	0		400		Continue	650	Continue
Investigate Compression /processing technologies	MIPR	CERDEC I2WD Ft Monmouth	938	100		0		0		Continue	1038	Continue
Develop specialized software enhancements to TROJAN audio streaming	MIPR	CERDEC I2WD Ft Monmouth	0	0	2-3Q	578		281		0	859	0
Develop hardware/software interface to ONEROOF	MIPR	CERDEC I2WD Ft Monmouth	0	0	2-3Q	350		0		0	350	0
Subtotal:			2209	942		1230		1208		Continue	4880	Continue

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Aquire & Apply muliti bandwidth compr Algorithm	MIPR	CECOM I2WD FT Monmouth	500	0		150		100		Continue	750	Continue
Subtotal:			500	0		150		100		Continue	750	Continue

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Integrate/test hardware/software	MIPR	CECOM I2WD FT Monmouth	1000	500	2-3Q	150		300		Continue	1950	Continue
Operational test/eval of enhanced SIG Processing	MIPR	CECOM I2WD Ft Monmouth	429	0		0		0		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS (R3)

February 2006

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

Subtotal:			1429	500		150		300		Continue	Continue	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0									
Project Total Cost:			**4138**	**1442**		**1530**		**1608**		**0**	**7580**	**0**

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

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

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
L20	ATIRCM/CMWS	7030	10514	14905	14871	11210	12376	13404	0	91198

A. Mission Description and Budget Item Justification: The Advanced Threat Infrared Countermeasure (ATIRCM) is a US Army program to develop, test, and integrate defensive infrared (IR) countermeasures capabilities into existing, current generation host platforms 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 ultraviolet (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 IR survivability system for Future Force Army aircraft.

The A-Kit is the modification hardware, wiring harness, cable, etc., necessary to install and interface the ATIRCM/CMWS Mission Kit to each platform. The A-Kit ensures the Mission Kit is functionally and physically operational with the host platform.

The Mission Kit consists of the ATIRCM/CMWS which performs the missile detection, false alarm rejection, and missile declaration functions of the system. The Electronic Control Unit (ECU) of the CMWS sends a missile alert signal to on-board avionics and other Aircraft Survivability Equipment (ASE) such as expendable flare dispensers. Threat missiles detected by the CMWS are handed over to the ATIRCM.

FY07 funding supports testing of the ATIRCM system and begins modernization efforts.

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
Product Development	0	900	1000
Support Cost	0	0	0
Test and Evaluation	7030	9314	13605
Management Services	0	300	300
Total	7030	10514	14905

B. Other Program Funding Summary	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
APA, BA 4 AZ3507 ASE Infrared CM	322569	209252	305631	370472	426528	322112	246620	369937	2709136

C. Acquisition Strategy Funding supports an acquisition strategy of buying CMWS separately from ATIRCM, while installing A-kits on all modernized aircraft. The current production contract is a fixed-priced, five year, Indefinite Delivery, Indefinite Quantity (IDIQ) contract to BAE Systems. Due to acceleration of CMWS, the acquisition strategy has changed to account for separate IOT&E's and Full Rate Production decisions for CMWS and ATIRCM. Based on the Army IOPT's recommendation to the AAE in Nov 05, the CMWS will enter the Full Rate Production and Deployment phase of the acquisition, upon completion of the Beyond LRIP Report to Congress in 2FY06. The AAE approved the ATIRCM path forward in December 05 with the incorporation of the Multi-band Laser into the production baseline. Schedule and costs have been updated to reflect the revised strategy.

ARMY RDT&E COST ANALYSIS (R3)

February 2006

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L20

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
AIRCMM	C/CPIF	Thiokol, Brigham City, UT	8451	0		0		0		0	1563	1563
ATIRCM EMD Basic Contract	C/CPAF	BAE Systems, Nashua, NH	23574	0		0		0		0	23574	23574
ATIRCM 6 Lot/EMD/RDT	SS/CPFF	BAE Systems, Nashua, NH	56675	0		0		0		0	56675	56675
ATIRCM	C/CPFF	Cowley, Chantilly, VA	100	0		0		0		0	100	100
Test Facility	C/CPFF	Amherst, Huntsville, AL	1300	0		0		0		0	1300	1300
Modeling and Simulation	C/FFP	CAS, Huntsville, AL	600	0		900	1-2Q	1000	1-2Q	4600	7100	7100
Modernization Efforts	Various	TBD	1062	0		0		0	1-3Q	3209	4271	6944
Tier 2/3 Threat Upgrades	Various		0	0		0		0		13616	13616	14709
Subtotal:			91762	0		900		1000		21425	108199	111965

Remarks: FY99 & Prior funding in Project 665

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	C/FFP	Huntsville, AL	9554	0		0		0		0	9554	9554
Matrix Support	MIPR	CECOM, Ft Monmouth NJ; AMCOM, Huntsville AL	3055	0		0		0		0	3055	0
Subtotal:			12609	0		0		0		0	12609	9554

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Technical Support for User Tests	MIPR	Electronic Proving	7548	0		1000	1-4Q	1000	1-3Q	1000	10548	0

		Ground, Ft. Huachuca, AZ										
ATIRCM E2E	MIPR	TSMO	0	0		0		0		0	0	0
ATIRCM ACR3 in support of IOT&E	MIPR	WSMR	0	0		0		0		4000	4000	0
ATIRCM/CMWS IOT&E	MIPR	ATEC and others	9616	1481	1-4Q	0		0		3000	14097	0
Test Support	MIPR	ATTC, Ft. Ruckel, AL; RTTC, Redstone Ars, AL	4849	39	1-4Q	3000		500	1-3Q	6527	14915	0
Test Support	C/FFP	Westar, Huntsville, AL and Neer/Thomsen, Huntsville, AL	3222	297	1-4Q	0		0		0	3519	3519
Test Support With Live Missile Firing. Data Gathering and System Evaluation	MIPR	PM, Instrumentation Targets and Threat Simulators (ITTS) and 46th Test Wing, Eglin AFB, FL	2800	1150	1-4Q	0		0		0	3950	0
Test Support	C/FFP	BAE Systems, Eglin AFB, FL	0	0		1000	1-4Q	1000	1-3Q	1000	3000	3000
SMEOS Phase 2	C/FFP		0	296	1-4Q	0		0		0	296	296
Simulation And Evaluation	MIPR	TSMO, Redstone Arsenal, AL	0	65	1-4Q	0		0		0	65	0
Missiles and Telemetry Kits for Testing	MIPR	Various	0	3702	1-4Q	2000	1-2Q	2200	1-3Q	4100	12002	0
Guided Weapons Evaluation Facility (GWEF)	MIPR	46th Test Wing, Eglin AFB, FL	0	0		0		200	1-3Q	900	1100	0
ATIRCM Test Flights	MIPR	ATTC, Ft. Ruckel, AL; RTTC, Redstone Ars, AL	0	0		2314	1-2Q	0		2200	4514	0
Tier I Threat Verification Testing/Missile Shots	MIPR	Various	0	0		0		3500	1-3Q	2000	5500	0
Tier I Threat Verification Testing/FAR Trolling	MIPR	ATTC, Ft. Ruckel, AL; RTTC, Redstone Ars, AL	0	0		0		1500	1-3Q	1500	3000	0
AWR Testing	MIPR	ATTC, Ft. Ruckel, AL;	0	0		0		1200	1-3Q	0	1200	0

ARMY RDT&E COST ANALYSIS (R3)

February 2006

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

		RTTC, Redstone Ars, AL										
Delta A-Kit for UH-60	MIPR	Various	0	0		0		1000	1-3Q	0	1000	0
Captive Seeker Test	MIPR	TBD	0	0		0		0		1200	1200	0
Sled Test #2	MIPR	TBD	0	0		0		0		1000	1000	0
PM Jammer Test	MIPR	TBD	0	0		0		0		809	809	0
MBL Testing	MIPR	Various	0	0		0		1505	1-3Q	0	1505	0
Subtotal:			28035	7030		9314		13605		29236	87220	6815

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Project Management	In house support	PM AES, Huntsville, AL	5336	0		300	1-4Q	300	1-4Q	1200	7136	0
Congressional Adjustments			0	0		0		0		0	0	0
Subtotal:			5336	0		300		300		1200	7136	0
Project Total Cost:			**137742**	**7030**		**10514**		**14905**		**51861**	**215164**	**128334**

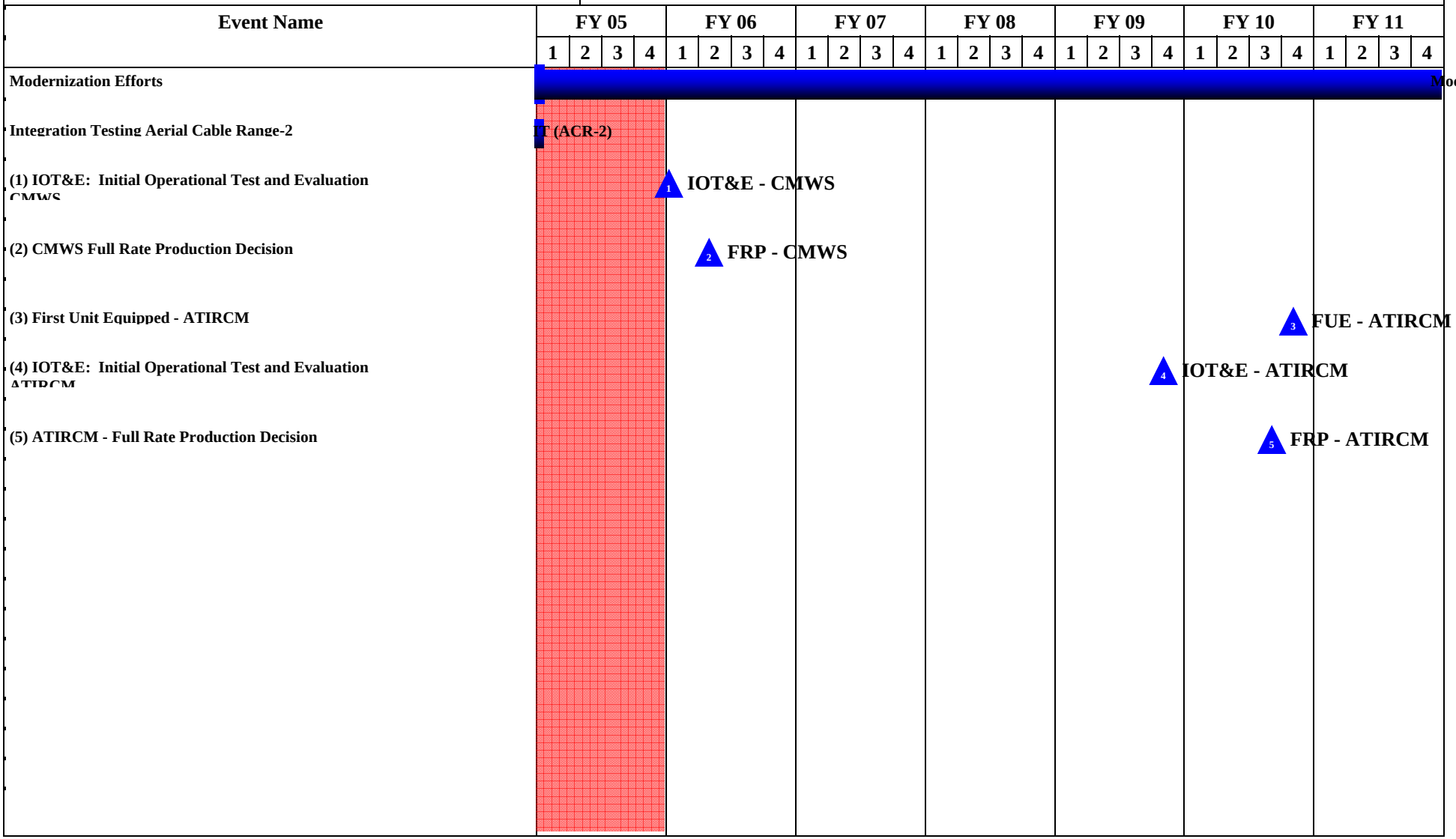
Schedule Profile (R4 Exhibit)

February 2006

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604270A - EW DEVELOPMENT

PROJECT
L20



Schedule Detail (R4a Exhibit)

February 2006

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

Schedule Detail	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Incremental Improvements			3-4Q	1-4Q	1-4Q		
Integration Testing Aerial Cable Range-2	1Q						
IOT&E: Initial Operational Test and Evaluation - CMWS		1Q					
CMWS Full Rate Production Decision		2Q					
ATIRCM End-to-End Modeling and Accreditation						1-2Q	
IOT&E: Initial Operational Test and Evaluation - ATIRCM					4Q		
ATIRCM - Full Rate Production Decision						3Q	
ATIRCM First Unit Equipped						4Q	
DT/OT				3Q	1-4Q	2Q	
Flight Tests	2Q	1-4Q	1-4Q	1-4Q	1-4Q		