ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

COST (In Thousands)		FY 2004 Actual	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		31715	16515	32179	36032	32642	29525	26068	27612	0	270579
665	A/C SURV EQUIP DEV	0	4207	7341	4032	4035	4033	5090	5595	0	43634
L12	SIGNALS WARFARE DEVELOPMENT (TIARA)	21261	2490	11365	14462	10522	10924	5090	5087	0	106751
L15	ARAT-TSS	2157	1341	1255	1277	1834	1897	2036	2034	0	15936
L16	TROJAN DEVELOPMENT	1409	1443	1552	1583	1605	1638	1677	1718	0	13960
L20	ATIRCM/CMWS	6888	7034	10666	14678	14646	11033	12175	13178	0	90298

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.

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	16879	32315	35477
Current Budget (FY 2006/2007 PB)	16515	32179	36032
Total Adjustments	-364	-136	555
Net of Program/Database Changes			
Congressional Program Reductions	-243		
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-121		
Adjustments to Budget Years		-136	555

FY2006 funds realigned to higher priority requirements.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**06042□0A - EW DEVELOPMENT**	**665**

COST (In Thousands)	FY 2004 Actual	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	0	4207	7341	4032	4035	4033	5090	5595	0	43634

A. Mission Description and Budget Item Justification: The objective of the Aircraft Survivability Equipment Development project is to develop the Suite of Radio Frequency Countermeasures (SIRFC) system. The SIRFC Radar Warning Receiver (RWR) increases aircrew situational awareness by detecting and identifying radio frequency (RF) signals associated with enemy threat radar systems. The SIRFC Jammer provides electronic countermeasures (ECM) to reduce the ability of threat air defense systems to track the host platform. The A-Kit is the mounting brackets, installation hardware, wiring, and cabling necessary to interface the SIRFC B-Kit with the host platform. The B-Kit for RWR includes receive antennas, amplifier/convertor circuitry, and the digital receiver/processor. The jammer B-Kit includes all the RWR Line Replaceable Units and a transmitter, switching circuitry, and transmit antennas.

The Army SIRFC program integrates and installs the SIRFC variant onto Army Aviation plaforms. This funding line develops an upgrade to the SIRFC variant managed by Technology Applications Program Office (TAPO) for Special Operations Aircraft (SOA). The MH-47 and MH-60 SIRFC variants will be upgraded to implement a digital receiver into the Radar Warning Receiver (RWR). This developmental upgrade improves performance, reduces weight while lowering the recurring cost. The capability for incorporating jamming functionality will be retained. SOA will upgrade to the digital receiver as part of TAPO's Pre-Planned Product Improvement (P3I) program.

FY2006/2007 funding continues the development and testing of the digital receiver.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
In-house and program management administration	0	846	860	876
Product Development (digital receiver)	0	3361	2581	556
Testing (Qualification, Chamber, etc.)	0	0	3900	2600
Totals	0	4207	7341	4032

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
AZ3511 SIRFC	0	0	3651	21261	36501	24114	48908	49020	Continuing	Continuing

C. Acquisition Strategy: The Army SIRFC Program is managed by Project Manager, Aviation Electronic Systems (PM AES) for integration and installation on Army Aviation platforms. The Army is developing an upgrade to the SIRFC variant managed by Technology Applications Program Office (TAPO) for Special Operations Aircraft (SOA) MH-47 and MH-60, by implementing a digital receiver into the Radar Warning Receiver (RWR). Development of the digital receiver RWR will leverage off exisiting technologies. SOA will upgrade to the digital receiver as part of TAPO's Pre-Planned Product Improvement (P3I) program.

ARMY RDT&E COST ANALYSIS(R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
665

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
a . Digital Receiver		Multiple	0	3361	1Q	2581	1Q	556	1Q	0	6498	Continue
Subtotal:			0	3361		2581		556		0	6498	Continue

II. Support Cost	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
a . Matrix Support	MIPR	Huntsville, AL	0	762	1Q	775	1Q	789	1Q	0	2326	0
b . Contractor Support	C/FFP	Huntsville, AL	0	77	1Q	78	1Q	80	1Q	0	235	0
Subtotal:			0	839		853		869		0	2561	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

PROJECT
665

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
a . Test and Evaluation	MIPR	ATEC, Alexandria, VA	0	0	1-4Q	1500	1-4Q	1000	1-4Q	0	2500	0
b . Flight Test/Range Support	MIPR	ECR, Naval Air Warfare Center-WPNS, China Lake, CA	0	0	1-4Q	1900	1-4Q	1000	1-4Q	0	2900	0
c . Chamber/E3 Test and Support	MIPR	ACETEF, Naval Air Warfare Center-AC, Patuxent River, MD	0	0	1-4Q	500	1-4Q	600	1-4Q	0	1100	0
Subtotal:			0	0		3900		2600		0	6500	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
a . Project Management	In-House	PM AES	0	7	1-4Q	7	1-4Q	7	1-4Q	0	21	1193
Subtotal:			0	7		7		7		0	21	1193
Project Total Cost:			0	4207		7341		4032		0	15580	Continue

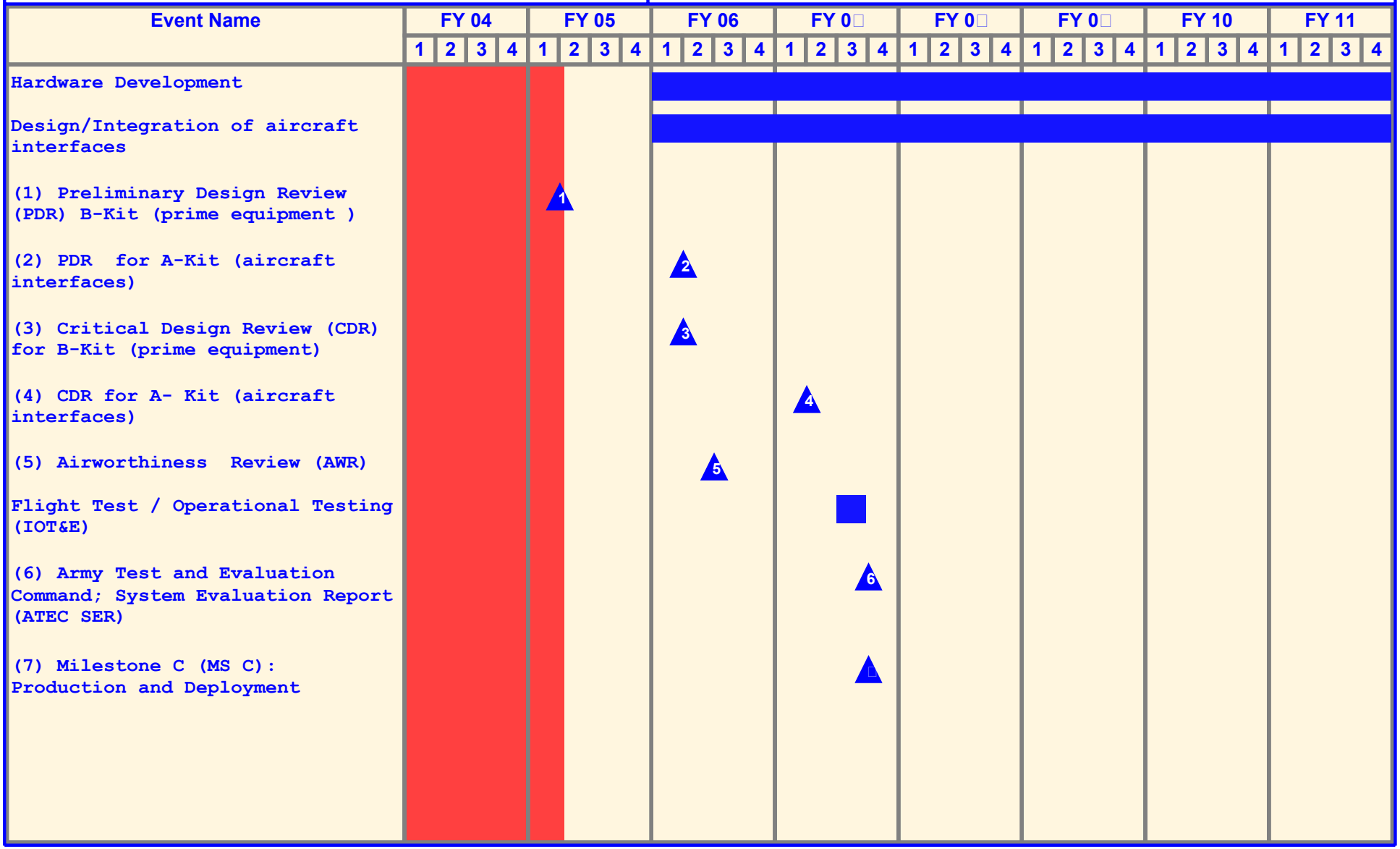
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

PROJECT
665



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

PROJECT
665

Schedule Detail	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct RWR Development/Qualification/Testing		1-4Q	1-4Q					
Incremental Product Improvements				1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
DT/OT				1-2Q				
IOT&E				3-4Q				
Milestone C (MS C)				4Q				

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**06042□0A - EW DEVELOPMENT**	**L12**

COST (In Thousands)		FY 2004 Actual	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)	21261	2490	11365	14462	10522	10924	5090	5087	0	106751

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 COMINT/EW 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. Prophet replaced the division level Trailblazer and Teammate legacy SIGINT systems in Block I and will replace the 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). 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 and Control Team's (ACT) All Source Analysis System (ASAS)-Remote Work Stations (ASAS-RWS) via Prophet Control. Prophet Control's functionality is planned to be integrated onto the Distributed Common Ground Station-Army (DCGS-A) platform. The ACT will forward the gathered information to the division and armored cavalry Analysis and 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 block approach: Block I - Electronic Support (ES) (COMINT), Block II - Electronic Attack (EA), Block III - Modern Signals. Planned enhancements to Block III will be advanced recievers. Prophet Block II/III functionality will be resident within FCS. That technology and Tactics, Techniques and Procedures (TTPs) will be leveraged.

FY2006/2007 Funds initiate and support Prophet P3I enhancements as well as Block II/III IOT&E.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Prophet Block II/III System Development and Demonstration (SDD)	15910	973	0	0
Prepare for and conduct Prophet Block II/III LUT/DT/IOT&E	5126	1117	2512	2398
Prophet P3I Enhancements	0	0	8853	12064
Prepare for Prophet Block II/III LRIP MS C	225	400	0	0

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Totals	21261	2490	11365	14462

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
BZ7326 Prophet Ground (TIARA)	10794	25129	13006	25532	30511	27107	22070	9822	Continuing	Continuing
PE 030885G Defense Cryptological Program for PROPHET	3774	4015	4253	3039	6910	6905	7000	7000	Continuing	Continuing
BZ9751 Special Purpose Systems (TIARA) (Prophet Only)	482	476	488	3765	2316	2402	2570	3087	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) efforts were combined into a single SDD phase following an evolutionary acquisition process. Block II/III SDD was competetively awarded in 2QFY03. Prophet Block II/III P3I efforts will utilize competitive contracting to the maximum extent possible.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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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
a . Prophet Block II/III SDD Contract	C-CPIF	General Dynamics Decision Systems, Scottsdale, AZ	30380	973	1Q	0		0		0	31353	0
b . Prophet Block II/III GFE	FFP	Titan Systems	1768	0		0		0		0	1768	0
c . Prophet Modeling and Simulation	C/T&M	TBD	1000	0		250	1Q	350	1Q	350	1950	0
d . Leviathon Development and Prototyping	CPFF	Sensytech, Newington, VA	963	0		0		0		0	963	0
e . Prophet P3I Contract		TBD	0	0		6971	1Q	10000		21000	37971	0
Subtotal:			34111	973		7221		10350		21350	74005	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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PROJECT
L12

II. Support Cost	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
a . Matrix Support	MIPR	CECOM, Fort Monmouth NJ	6907	441	1Q	463	1Q	486	1Q	0	8297	0
b . Contractor Eng & Spt	C/T&M	Sytex Group, Eatontown, NJ	708	29	1Q	0		0		0	737	0
c . Contractor Eng & Spt	C/T&M	CACI, Eatontown, NJ	2425	417	1Q	0		0		0	2842	0
d . TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	603	0	1Q	0		0		0	603	250
e . Contractor Eng & Spt	C/T&M	Dynetics, Huntsville, AL	60	0		0		0		0	60	0
f . Contractor Eng & Spt	C/T&M	DSCI, Eatontown, NJ	0	109	1Q	114	1Q	120	1Q	0	343	0
g . Contractor Eng & Spt	C/T&M	TBD	0	0		468	1Q	492	1Q	0	960	0
Subtotal:			10703	996		1045		1098		0	13842	250

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

PROJECT
L12

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
a . Prepare for and Conduct Prophet Block II/III DT/IOTE	MIPR	EPG/AEC	5654	0		2512	1Q	2398	1Q	0	10564	0
Subtotal:			5654	0		2512		2398		0	10564	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
a . Program Management	In-House	PM, Signals Warfare, Fort Monmouth NJ	5504	521	1-4Q	587	1-4Q	616	1-4Q	0	7228	0
b . Program Support	MIPR	ASPO, Alexandria, VA	204	0		0		0		0	204	0
Subtotal:			5708	521		587		616		0	7432	0
Project Total Cost:			56176	2490		11365		14462		21350	105843	250

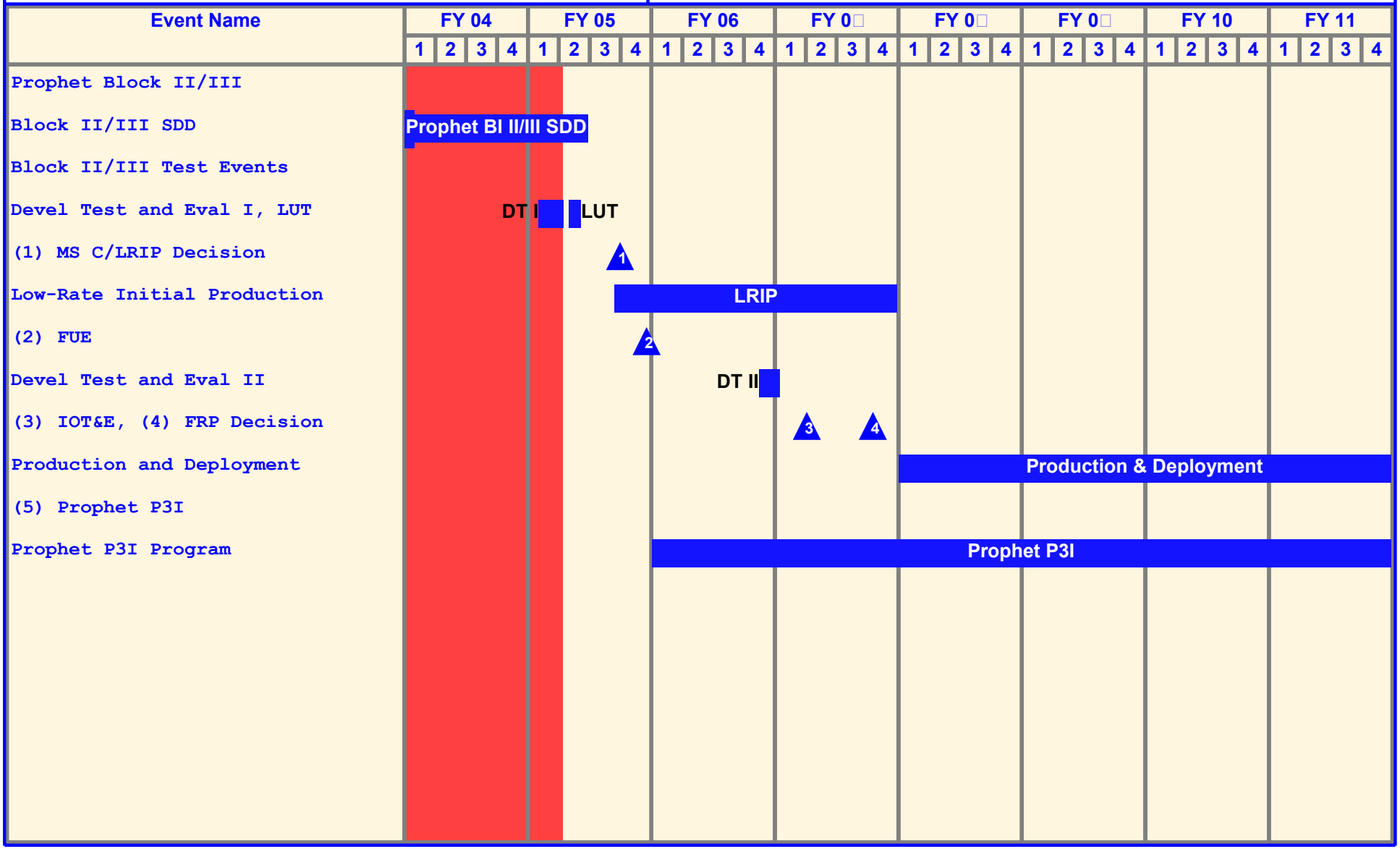
Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

PROJECT
L12



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**06042□0A - EW DEVELOPMENT**	**L12**

Schedule Detail	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Conduct Block II/III DT/LUT		1-2Q						
Milestone C/LRIP Decision for Prophet Block II/III		3Q						
Block II/III LRIP		3-4Q	1-4Q	1-4Q				
First Unit Equipped, Prophet Block II/III		4Q						
Conduct DT Phase II			4Q	1Q				
Conduct IOT&E				2Q				
Block II/III Full Rate Production Decision				4Q				
Block II/III Production and Deployment					1-4Q	1-4Q	1-4Q	1-4Q
Prophet P3I Program			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**06042□0A - EW DEVELOPMENT**	**L15**

COST (In Thousands)	FY 2004 Actual	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	2157	1341	1255	1277	1834	1897	2036	2034	0	15936

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 2004	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.	250	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	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.	350	288	250	250

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
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.	624	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.	0	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.	100	0	0	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	0	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.	100	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	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.	333	276	253	270
Totals	2157	1341	1255	1277

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(R3)

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BUDGET ACTIVITY
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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
a . Labor (internal Gov't)	Labor (internal Gov't)	CECOM, Fort Monmouth, NJ	1647	519	1-4Q	480	1-4Q	502	1-4Q	Continue	3148	Continue
b . Travel	Travel	TBD/Various sites	154	60		60	1-4Q	60	1-4Q	Continue	334	Continue
Subtotal:			1801	579		540		562		Continue	3482	Continue

II. Support Cost	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
a . Development Support (INSCOM Full Spectrum)	Development Support (INSCOM)	TBD/Various sites	1100	265	1-4Q	303	1-4Q	325	1-4Q	Continue	1993	Continue
b . 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

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

PROJECT
L15

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
a . 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 & 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
a . 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	1341		1255		1277		Continue	Continue	Continue

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**06042□0A - EW DEVELOPMENT**	**L16**

COST (In Thousands)	FY 2004 Actual	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	1409	1443	1552	1583	1605	1638	1677	1718	0	13960

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 2004	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	500	150	300
Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.	0	0	150	100
Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGA technologies.	560	693	302	527
Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).	349	250	0	400
Develop hardware/software interface for TCXXI system to ONEROOF storage system	0	0	350	0

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
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	0	600	256
Totals	1409	1443	1552	1583

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
OPA BA0331 Trojan	6487	5723	6067	7557	7627	7757	7878	8000	0	57096

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 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - 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
a . Develop Prototype QRC Receiver packages	MIPR	CERDEC I2WD Ft Monmouth	1021	843	2-3Q	302		500		Continue	2666	Continue
b . Develop DF Capabilities for TROJAN RRG	MIPR	CERDEC I2WD Ft Monmouth	250	0	1-2Q	0		400		Continue	650	Continue
c . Investigate Compression /processing technologies	MIPR	CERDEC I2WD Ft Monmouth	938	100		0		0		Continue	1038	Continue
d . Develop specialized software enhancements to TROJAN audio streaming	MIPR	CERDEC I2WD Ft Monmouth	0	0	2-3Q	600		283		0	883	0
e . Develop hardware/software interface to ONEROOF	MIPR	CERDEC I2WD Ft Monmouth	0	0	2-3Q	350		0		0	350	0
Subtotal:			2209	943		1252		1183		Continue	5587	Continue

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5 - System Development and Demonstration

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II. Support Cost	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
a . 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
a . Integrate/test hardware/software	MIPR	CECOM I2WD FT Monmouth	1000	500	2-3Q	150		300		Continue	1950	Continue
b . Operational test/eval of enhanced SIG Processing	MIPR	CECOM I2WD Ft Monmouth	429	0		0		0		Continue	Continue	Continue
Subtotal:			1429	500		150		300		Continue	Continue	Continue

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BUDGET ACTIVITY
5 - System Development and Demonstration

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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	0		0		0		0	0	0
Project Total Cost:			4138	1443		1552		1583		Continue	Continue	Continue

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**06042□0A - EW DEVELOPMENT**	**L20**

COST (In Thousands)	FY 2004 Actual	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	6888	7034	10666	14678	14646	11033	12175	13178	0	90298

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.

FY06-FY07 funding supports continued incremental improvements for jamhead miniaturization and countermeasures against Tier 2 and Tier 3 threats.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Product Development	6888	0	7073	11252
Support Cost	0	0	0	0
Test and Evaluation	0	6807	3293	3126
Management Services	0	227	300	300
Totals	6888	7034	10666	14678

B. Other Program Funding Summary	FY 2004	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	112785	271115	211151	266190	343226	420714	317780	243498	2551068	4737527

C. Acquisition Strategy: The Engineering Manufacturing Development (EMD) contract competitively awarded in FY 1995. The Army Acquisition Executive (AAE) approved the Limited Procurement Urgent (LPU) for acquisition of the CMWS capability for Special Operations Force (SOF) aircraft in March 2002. An Army Systems Acquisition Review Council (ASARC) resulted in a Milestone C Low Rate Initial Production (LRIP) decision in November 2003, approving the program's entry into LRIP. The LRIP procurement acquisition strategy is sole source, fixed price procurement. Funding supports an acquisition strategy of buying CMWS separately from ATIRCM, while installing A-kits on all modernized aircraft. The ATIRCM Full Rate Production (FRP) decision is scheduled to follow the Initial Operational Test and Evaluation (IOTE) with production continuing through FY17. The current production contract is a sole source, fixed-priced, five year, Indefinite Delivery, Indefinite Quantity (IDIQ) contract to BAE Systems.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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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
a . AIRCMM	C/CPIF	Thiokol, Brigham City, UT	8451	0		0		0		0	8451	1563
b . ATIRCM EMD Basic Contract	C/CPAF	BAE Systems, Nashua, NH	23574	0		0		0		0	23574	171784
c . ATIRCM T&M Efforts-Reliability Demonstration Testing	C/CPFF	BAE Systems, Nashua, NH	40412	0		0		0		0	40412	40412
d . ATIRCM 6 Lot Test Assets	SS/CPFF	BAE Systems, Nashua, NH	14640	0		0		0		0	14640	14640
e . ATIRCM	C/CPFF	Cowley, Chantilly, VA	100	0		0		0		0	100	100
f . Test Facility	C/CPFF	Amherst, Huntsville, AL	1300	0		0		0		0	1300	1300
g . Other P3I Efforts (Jamhead Miniaturization)	Various	Various	1062	0		3000	2Q	8252	2Q	15392	27706	27706
h . Tier 2/3 Threat Upgrades			0	0		4073	2Q	3000	2Q	20515	27588	27588
Subtotal:			89539	0		7073		11252		35907	143771	285093

Remarks: FY99 & Prior funding in Project 665

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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II. Support Cost	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
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, Ft Monmouth NJ; AMCOM, Huntsville AL	3055	0		0		0		0	3055	0
Subtotal:			13209	0		0		0		0	13209	10154

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
a . Technical Support for User Tests	MIPR	Electronic Proving Ground, Ft. Huachuca, AZ	7548	0		1000	2Q	1000	2Q	4000	13548	0
b . Operational Test Command User Test	MIPR	ATEC and Others	9616	6807	3-4Q	0		0		0	16423	0
c . Test Support	MIPR	ATTC, Fort Rucker, AL	2504	0		0		0		0	2504	0
d . O2K Contractor Test Support	C/FFP	Neer/Thomsen, Huntsville, AL	2663	0		0		0		0	2663	2663

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
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III. Test and Evaluation (continued)	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
e . Test Support	C/FFP	Westar, Huntsville, AL	559	0		0		0		0	559	559
f . 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	0		1293	2Q	2126	2Q	2925	9144	0
g . Test Support	MIPR	RTTC, Redstone Arsenal, AL	1120	0		0		0		0	1120	0
h . Other	MIPR		105	0		0		0		3000	3105	0
i . Simulation And Evaluation	MIPR	TSMO, Redstone Arsenal, AL	0	0		1000	1-4Q	0		4000	5000	0
Subtotal:			26915	6807		3293		3126		13925	54066	3222

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
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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
a . Project Management	In house support	PM AES, Huntsville, AL	5336	227	1-4Q	300	1-4Q	300	1-4Q	1200	7363	0
b . Congressional Adjustments			0	0		0		0		0	0	0
Subtotal:			5336	227		300		300		1200	7363	0
Project Total Cost:			134999	7034		10666		14678		51032	218409	298469

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

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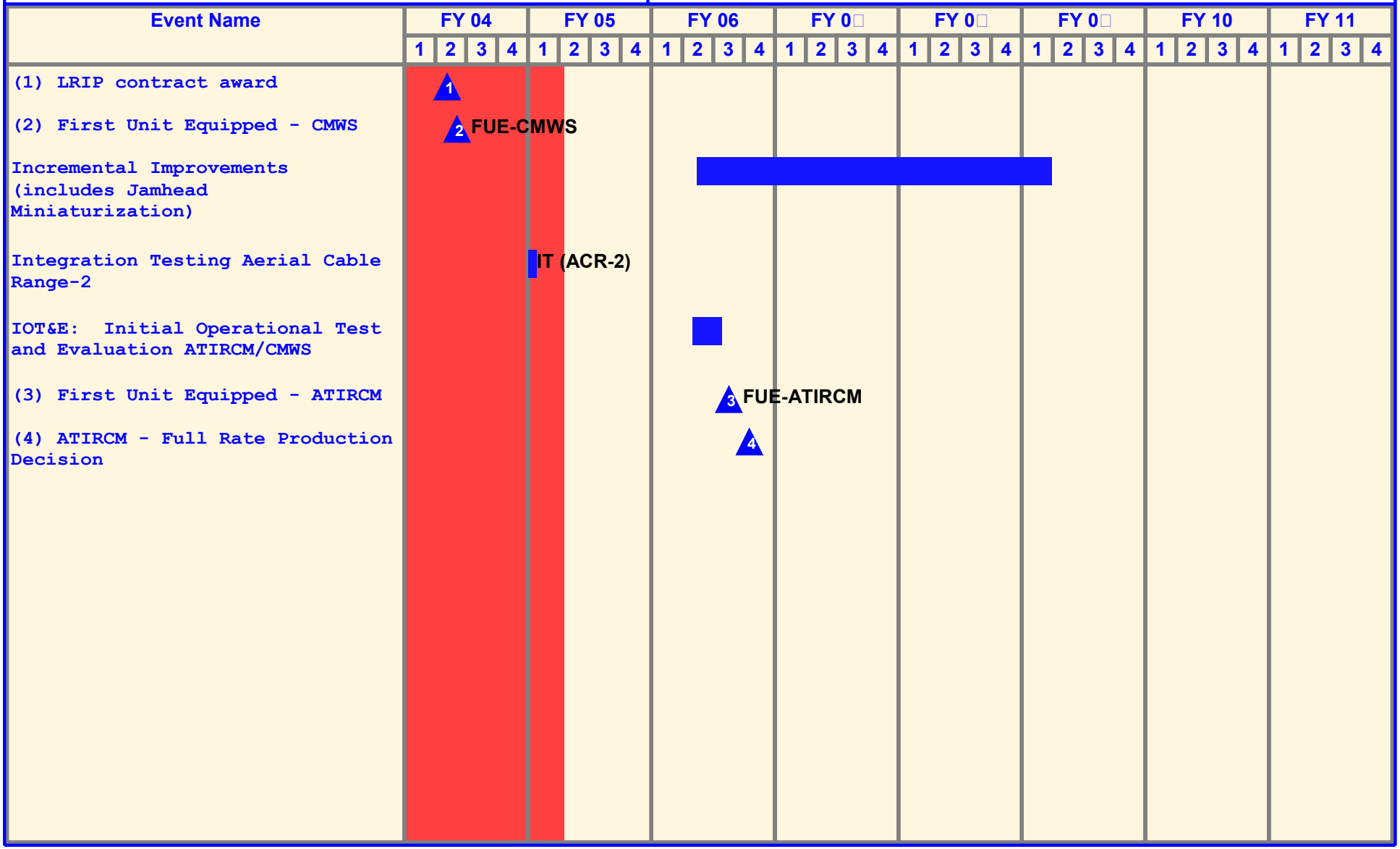
PROJECT
L20



Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
06042□0A - EW DEVELOPMENT

PROJECT
L20

Schedule Detail	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
LRIP Contract Award	2Q							
Incremental Improvements (includes Jamhead Miniaturization)			2-4Q	2-4Q	2-4Q	2-4Q		
Integration Testing Aerial Cable Range-2		1Q						
IOT&E: Initial Operational Test and Evaluation ATIRCM/CMWS			2-3Q					
First Unit Equipped - ATIRCM			3Q					
ATIRCM - Full Rate Production Decision			4Q					