

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	38291	32870	16879	32315	35477	32085	29018	Continuing	Continuing
665 A/C SURV EQUIP DEV	9301	0	4391	7360	3963	3961	3960	Continuing	Continuing
L12 SIGNALS WARFARE DEVELOPMENT (TIARA)	25550	22035	2528	11394	14213	10330	10725	Continuing	Continuing
L15 ARAT-TSS	2105	2236	1360	1258	1255	1800	1863	Continuing	Continuing
L16 TROJAN DEVELOPMENT	1335	1460	1463	1556	1556	1576	1608	Continuing	Continuing
L20 ATIRCM/CMWS	0	7139	7137	10747	14490	14418	10862	Continuing	Continuing

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 Current-to-Future transition path of the Transformation Campaign Path (TCP).

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	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	38309	33214	19526
Current Budget (FY 2005 PB)	38291	32870	16879
Total Adjustments	-18	-344	-2647
Congressional program reductions		-312	
Congressional rescissions			
Congressional increases			
Reprogrammings	-18	-32	
SBIR/STTR Transfer			
Adjustments to Budget Years			-2647

FY 2005 funds realigned to support higher Army priorities.

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COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
665 A/C SURV EQUIP DEV	9301	0	4391	7360	3963	3961	3960	Continuing	Continuing

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 to identify and protect U.S. Army aircraft against multiple radio frequency weapon systems. SIRFC will increase the combat effectiveness of these aircraft by reducing or eliminating the ability of threat air defense systems to detect, hit, track, damage or destroy them.

This system supports the Current to Future Force transition path of the Transformation Campaign Plan (TCP).

The FY05 funding allows the program to continue the technical insertion program.

Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Conduct Advanced ASE Testing	3300	0	0
Conduct Advanced ASE Qualification Testing	4455	0	0
Conduct Technology Insertion Program	1506	0	4291
In-house and program management administration	40	0	100
Totals	9301	0	4391

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B. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
APA, BA 4 AZ3508 ASE	3078	9452	4885	8164	26823	42554	28689	0	156221
OSD Procurement, PE 1160444BB	25300	13900	62309	46345	48922	50459	60600	0	307835

C. Acquisition Strategy: SIRFC is managed by the Technology Applications Program Office (TAPO), Ft. Eustis, VA, which is part of the Special Operations Command (SOCOM). TAPO is currently integrating and testing the SIRFC system on the MH-47 and MH-60 aircraft platforms and will begin full rate production of SIRFC when all flight testing is completed. This will allow the Army CH-47 and UH-60 platforms to leverage off of TAPO's integration efforts on the MH series and to take advantage of an established production line. The Army will also be able to use TAPO's production contract when it is ready to procure systems for its aircraft platforms. A technology insertion program will also be implemented to replace old technology and reduce obsolescence problems with the goal of reducing unit costs.

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT 665		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . SIRFC EMD Contract	C/CPAF	ITT Corp, Clifton, NJ	101021	0		0		0		0	101021	128941
b . EMD Support	MIPR	CECOM, Ft. Monmouth, NJ	420	0		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	9000	0		0		0		0	9000	9000
e . PEP/Technology Insertion/Obsolescence Support	MIPR	CECOM, Ft. Monmouth, NJ	7	0		0		0		0	7	7
f . Continue Technology Insertion Program/P3I	C/CPFF	ITT Corp, Clifton, NJ	3226	0		0		0		0	3226	8734
g . Technology Insertion/P3I Support	MIPR	Multiple	3390	0		0		0		0	3390	487
h . Technology Insertion	SS/CPFF	ITT Corp, Clifton, NJ	0	1356	2Q	0		3170	2Q	0	4526	0
Subtotal:			117297	1356		0		3170		0	121823	147822

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Threat Anlaysis	SS/CPFF	TASC Inc., Reading, MA	0	150	2Q	0		0		0	150	0
b . Engineering Support	MIPR	AMRDEC, Redstone Arsenal, AL	0	0		0		736	1-2Q	0	736	0
c . Engineering Support	MIPR	CECOM, Ft. Monmouth, NJ	0	0		0		385	1-2Q	0	385	0
Subtotal:			0	150		0		1121		0	1271	0
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Conduct Development Testing/Limited User Testing	C/CPFF	Research Analysis & Maintenance Inc., El Paso, TX	1993	0		0		0		0	1993	1993
b . Conduct Development Testing/Limited User Testing	C/CPFF	Boeing, Mesa, AZ	1645	0		0		0		0	1645	1645
c . Conduct Development Testing/Limited User Testing	MIPR	Multiple	2311	0		0		0		0	2311	2311
d . Conduct Contract Flight Testing	C/CPFF	Research Analysis & Maintenance Inc., El Paso, TX	1070	0		0		0		0	1070	1070

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT 665		
III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Conduct Contractor Flight Testing	MIPR	Multiple	920	0		0		0		0	920	920
f . Conduct Benefield Anechoic Facility Testing	MIPR	Air Force Flight Test Center, Edwards AFB, CA	633	0		0		0		0	633	633
g . Radio Frequency Simulation System Test	C/CPFF	Simulation Technologies Inc., Huntsville, AL	562	0		0		0		0	562	562
h . Conduct Software Integration Lab Testing	MIPR	CECOM, Ft. Monmouth, NJ	100	0		0		0		0	100	100
i . Ground/Flight Testing & Logistics Support	MIPR	Air Force Flight Test Center, Las Vegas, NV	0	1626	3Q	0		0		0	1626	2643
j . Antenna Measurements & Pattern Testing	MIPR	Naval Air Warfare Center, Patuxent River, MD	0	652	3Q	0		0		0	652	924
k . Noise Floor & EMC Testing	MIPR	Naval Air Warfare Center, Patuxent River, MD	0	531	3Q	0		0		0	531	0
l . Performance Testing & Evaluation	MIPR	Naval Air Warfare Center, Patuxent River, MD	0	292	3Q	0		0		0	292	0
m . Advanced ASE Qualification Testing & Support	SS/CPFF	ITT Corp, Clifton, NJ	0	4455	3Q	0		0		0	4455	0

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BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT 665		
III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
n . Airworthiness Release	MIPR	AMRDEC, Redstone Arsenal, AL	0	99	4Q	0		0		0	99	0
o . Logistics Support	MIPR	AMCOM, Redstone Arsenal, AL	0	50	4Q	0		0		0	50	0
p . Engineering Support	MIPR	CECOM, Ft. Monmouth, NJ	0	50	4Q	0		0		0	50	0
Subtotal:			9234	7755		0		0		0	16989	12801
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	MIPR	Various	657	40	1-4Q	0		100	1Q	0	797	1193
Subtotal:			657	40		0		100		0	797	1193
Project Total Cost:			127188	9301		0		4391		0	140880	161816

Schedule Profile (R4 Exhibit)																				February 2004												
BUDGET ACTIVITY 5 - System Development and Demonstration										PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT																		PROJECT 665				
Event Name	FY 02				FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Technology Insertion																																
AH-64D Integration																																
Conduct AH-64D RWR Qualification Testing																																
AH-64D Procurement																																
(1) Procure AH-64D RWR Units (2)																																
(2) Procure AH-64D RWR Units (40)																																
(3) Procure AH-64D RWR Units (14)																																

Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT			PROJECT 665	
<u>Schedule Detail</u>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Conduct Technology Insertion			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Conduct AH-64D Integration			2-4Q	1-4Q	1-4Q		
Conduct Radar Warning Receiver Qualification Testing - AH-64D				2-4Q			
Procure AH-64D Radar Warning Receiver Units					2Q	2Q	2Q

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BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT				PROJECT L12				
COST (In Thousands)				FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
L12	SIGNALS WARFARE DEVELOPMENT (TIARA)			25550	22035	2528	11394	14213	10330	10725	Continuing	Continuing
<p><u>A. Mission Description and Budget Item Justification:</u>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 replaces the division level Trailblazer and Teammate legacy SIGINT systems in Block I and TrafficJam in Block II. Prophet stationary and on-the-move direction finding information develops battlespace visualization, intelligence preparation of the battlefield (IPB) and target development for enemy and gray emitters within radio line-of-sight across the brigade area of responsibility. Block II/III will add Electronic Attack (EA) and an improved signal type detection capability during the System Development and Demonstration (SDD). 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 is a surrogate for the Distributed Common Ground System-Army (DCGS-A) in Blocks I to III. Prophet Control's functionality is planned to be integrated onto the DCGS-A platform. The ACT will forward the gathered information to the division and armored cavalry Analysis 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 (The Agile Signals, TAS). Planned enhancements to Block III capabilities will include COMINT and EA capabilities. Prophet Block II/III functionality will be resident within FCS. That technology and Tactics, Techniques and Procedures (TTPs) will be leveraged.</p> <p>FY05 Funds support Prophet Block II/III transition into production, as well as initiation of P3I enhancement effort planning.</p> <p>The Prophet System supports the Current to Future Force transition path of the Army Transformation Campaign Plan (TCP).</p>												

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PROJECT
L12

Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Prepared for and Conduct Mileston B IPR for Prophet Block II/III Contract	100	0	0
Prophet Block II/III System Development and Demonstration (SDD)	22180	15910	1039
Prepare for and conduct Prophet Block II/III DT/IOT&E	1857	5900	489
Prepare for Prophet P3I Enhancements	450	0	600
Prepare for Prophet Block II/III MS C	0	225	400
Conduct of Leviathon Studies and Prototype Development	963	0	0
Totals	25550	22035	2528

B. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
BZ7326 Prophet Ground (TIARA)	49041	10794	17692	13173	25077	30014	26779	Continuing	Continuing
PE 030885G Defense Cryptological Program for PROPHET	1694	3774	4015	4253	3039	6910	6905	Continuing	Continuing
BZ9751 Special Purpose Systems (TIARA) (Prophet Only)	0	489	486	488	3675	2257	2339	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 -(TAS)) efforts were combined into a single SDD phase following an evolutionary acquisition process. Block II/III SDD was competitively awarded in 2QFY03. Production and P3I efforts will utilize competitive contracting to the maximum extent possible.

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BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L12		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prophet Block II/III SDD Contract	C-CPIF	General Dynamics Decision Systems, Scottsdale, AZ	0	17171	2Q	13209	1Q	1039	1Q	0	31419	0
b . Prophet Block II/III GFE	FFP	Titan Systems	0	1768	2-3Q	0		0		Continue	1768	0
c . Prophet Modeling and Simulation	C/T&M	CACI, Eatontown, NJ	0	1000	3Q	0		0		0	1000	0
d . Leviathon Development and Prototyping	CPFF	Sensytech, Newington, VA	0	963	2Q	0		0		0	963	0
Subtotal:			0	20902		13209		1039		Continue	35150	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM, Fort Monmouth NJ	4015	1641	1-2Q	1251	1Q	381	1Q	Continue	7288	0
b . Contractor Eng & Spt	FFP	Sytex Group, Eatontown, NJ	403	200	1-2Q	105	1Q	50	1Q	Continue	758	0
c . Contractor Eng & Spt	FFP	CACI, Eatontown, NJ	675	750	1-2Q	1000	1Q	300	1Q	Continue	2725	0

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BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L12		
II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
d . TSM/NSTO	MIPR	TSM, Ft Huachuaca, AZ	250	250	1-2Q	103	2Q	50	1Q	0	653	250
e . Contractor Eng & Spt	C/T&M	Dynetics, Huntsville, AL	0	0		60	2Q	0		0	60	0
Subtotal:			5343	2841		2519		781		Continue	11484	250
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prepare for and Conduct Prophet Block II/III DT/IOTE	MIPR	EPG/AEC	0	1078	2-4Q	5350	1-3Q	0		0	6428	0
b . II/III Follow-On Test	MIPR	EPG/AEC	0	0		0		458	1Q	0	458	0
Subtotal:			0	1078		5350		458		0	6886	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In-House	PM, Signals Warfare, Fort Monmouth NJ	4022	525	1-4Q	957	1-4Q	250	1-4Q	Continue	5754	0
b . Program Support	MIPR	ASPO, Alexandria, VA	0	204	2Q	0		0		0	204	0
Subtotal:			4022	729		957		250		Continue	5958	0
Project Total Cost:			9365	25550		22035		2528		Continue	59478	250

Schedule Profile (R4 Exhibit)																				February 2004												
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Event Name	FY 02				FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prophet Block II/III																																
Prophet, Block II/III, Development, and Production	Tech Dev				Prophet BI II/III				OT				Prophet BI II/III Production & Deployment																			
(1) MS B, (2) MS C, (3) FUE					1								2				3															
Prophet P3I																																
Prophet P3I																	Prophet P3I															

Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT			PROJECT L12	
<u>Schedule Detail</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Conduct SSEB for Prophet Block II/III SDD Contract	1-2Q						
Mileston B Decision for Prophet Block II/III SDD Contract	2Q						
Award Prophet Block II/III SDD Contract	2Q						
Conduct Block II/III DT/IOT&E		2-4Q					
Milestone C for Prophet Block II/III			1Q				
Prophet BI II/III P3I			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q
First Unit Equipped, Prophet Block II/III			4Q				
Conduct Leviathon Studies and Develop Prototypes	2-4Q						

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PROJECT

L15

COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
L15 ARAT-TSS	2105	2236	1360	1258	1255	1800	1863	Continuing	Continuing

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

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Engineering Development (TSS Survey): Complete the Survey initiated in FY02 to identify TSS requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.	475	250	150
Engineering Development (TSS Survey): Initiate a Target Sensing System (TSS) Survey requiring support in Army Battlefield Functional Area (BFAs) with a focus on operational, technical, and intelligence aspects. This would include technical information about the actual TSS and their near and far term support requirements for intelligence collection, flagging, and threat analysis, Mission Data Set (MDS), communications, and filed support.	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.	0	350	288

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Accomplishments/Planned Program (continued)		FY 2003	FY 2004	FY 2005
Intelligence Support (Platform Intelligence Integration): Building on the work completed in FY02 determine individual platform benefits vs. potential costs to upgrade systems on each Aviation platform. Initiate lab testing of potential system updates to verify the additional benefit and identify intelligence collection methodology to integrate the collected intelligence data onto an intelligence network.		500	624	246
Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to complete the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure. In addition, initiate converting the US Army flagging models over to the new database structure.		275	0	200
Database Support (Flagging Model): Work jointly with the USAF at Kelly AFB, TX to initiate the conversion of the current flagging database structure shared by the US Army and USAF flagging models to a more modern database structure.		0	100	0
Dissemination (EWOSS/MLV): Complete an upgrade of EWOSS 2000 communications tool for the field user by improving the classified connection capability and integrating all aspects of current MLV software as modules within the basic structure. In addition, develop training aids to facilitate the field user being able to successfully use this software without attending a formal training course.		0	200	0
Dissemination (EWOSS/MLV): Using the upgraded EWOSS 2000 software, define and internally alpha test a common MLV system with flexible data protocols to support the associated cables and protocols required for each US Army TSS being reprogrammed. After completing alpha testing, initiate beta testing with field users including the use of the training aids developed in FY02.		300	100	0
Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Define requirements for a common intelligence database analysis and MDS tool for use by ARAT-TA (Kelly and Eglin AFBs) and ARAT-SE. The functionality must include common user interface, intelligence inputs, modular threat analysis and MDS generator tools, and output formats to support intelligence reporting, RF scenarios inputs and MDS inputs for EWOSS/MLV to leverage the use of existing tools such as the Major Radar Database (MRDB) as much as practical.		0	250	200
Engineering Development, Intelligence Support, Database Support, & Dissemination (Common Intel Database): Using the requirements definition completed in FY02, initiate the development of the common intelligence database analysis and MDS tool. Complete the user interface, database structure, output formats, and placeholders for the internal threat analysis and MDS generator tools.		555	362	276
Totals		2105	2236	1360

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)		February 2004
BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT	PROJECT L15
<p><u>B. Other Program Funding Summary:</u> Not applicable for this item.</p> <p><u>C. Acquisition Strategy:</u> 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.</p>		

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L15		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (internal Gov't)	TBD	CECOM, Fort Monmouth, NJ	550	649	1-4Q	527	1-4Q	538	1-4Q	Continue	2264	Continue
b . Travel	TBD	TBD/Various sites	49	45	1-4Q	60		60		Continue	Continue	Continue
Subtotal:			599	694		587		598		Continue	Continue	Continue
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Support (INSCOM Full Spectrum)	TBD	TBD/Various sites	300	400	1-3Q	400		265	1-4Q	Continue	Continue	Continue
b . Development Support (CECOM RDEC T&E CECOM SEC Omnibus)	TBD	TBD/Various sites	576	599	1-4Q	337		186	1-4Q	Continue	1698	Continue
Subtotal:			876	999		737		451		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L15		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor and ranges	TBD	TBD	0	0		500	1-4Q	0		0	500	0
Subtotal:			0	0		500		0		0	500	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Labor (Int and Contact)	TBD	CECOM and INSCOM	409	412	1-4Q	412	1-4Q	311	1-4Q	Continue	Continue	Continue
Subtotal:			409	412		412		311		Continue	Continue	Continue
Project Total Cost:			1884	2105		2236		1360		Continue	Continue	Continue

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

February 2004

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

PROJECT

L16

COST (In Thousands)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
L16	TROJAN DEVELOPMENT	1335	1460	1463	1556	1556	1576	1608	Continuing	Continuing

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

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

<u>Accomplishments/Planned Program</u>	FY 2003	FY 2004	FY 2005
Conduct operational testing and evaluation of previously developed special processing devices and software with enhanced signal processing algorithms.	429	0	0
Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms.	0	500	500
Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput.	500	0	0
Develop prototype QRC Receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGA technologies.	0	560	713
Integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups (RRGs).	406	400	250

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							February 2004					
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT				
5 - System Development and Demonstration				0604270A - EW DEVELOPMENT				L16				
Accomplishments/Planned Program (continued)							FY 2003	FY 2004	FY 2005			
Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies.							0	0	0			
Totals							1335	1460	1463			
B. Other Program Funding Summary				FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA BA0331 Trojan				4873	5052	5186	5261	5365	0	0	0	30594
<p>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.</p>												

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L16		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop Prototype QRC Receiver packages	MIPR	CERDEC I2WD Ft Monmouth	106	206		760	2-3Q	863	2-3Q	Continue	1935	Continue
b . Develop DF Capabilities for TROJAN RRG	MIPR	CERDEC I2WD Ft Monmouth	150	100	2Q	0	2-3Q	0	1-2Q	Continue	250	Continue
c . Investigate Compression /processing technologies	MIPR	CERDEC I2WD Ft Monmouth	638	100		200		100		Continue	1038	Continue
Subtotal:			894	406		960		963		Continue	3223	Continue
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Aquire & Apply multi bandwidth compr Algorithm	MIPR	CECOM I2WD FT Monmouth	0	500	3Q	0		0		Continue	Continue	Continue
Subtotal:			0	500		0		0		Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L16		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Integrate/test hardware/software	MIPR	CECOM I2WD FT Monmouth	500	0		500	2-3Q	500	2-3Q	Continue	1500	Continue
b . Operational test/eval of enhanced SIG Processing	MIPR	CECOM I2WD Ft Monmouth	0	429	3Q	0		0		Continue	Continue	Continue
Subtotal:			500	429		500		500		Continue	Continue	Continue
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			1394	1335		1460		1463		Continue	Continue	Continue

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

February 2004

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

PROJECT

L20

COST (In Thousands)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
L20 ATIRCM/CMWS	0	7139	7137	10747	14490	14418	10862	Continuing	Continuing

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

The CMWS also functions as a stand-alone system with the capability to detect missiles and provide audible and visual warnings to the pilot(s), and, when installed with the ICMD, activates expendables to provide a degree of protection. This system supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

FY05 funding supports continued P3I efforts for multi-band laser/laser miniaturization.

<u>Accomplishments/Planned Program</u>	FY 2003	FY 2004	FY 2005
Contractor Built-in-Test (BIT)/Reliability Demo Testing (RDT)	0	1623	0
RDT support	0	720	0
Developmental Testing/Operational Testing	0	1623	0
User Test support	0	2884	0
Operational testing	0	0	3537
Multi-band laser/Laser miniaturization	0	0	3373
Project Management	0	221	227
Congressional Adjustments	0	68	0
Totals	0	7139	7137

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

February 2004

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

0604270A - EW DEVELOPMENT

PROJECT

L20

B. Other Program Funding Summary

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
APA, BA 4 AZ3507 ASE Infrared CM	0	75151	79226	100786	107853	148786	139734	2551068	3206169
OSD Procurement, PE 1160444BB	21474	0	0	0	0	0	0	0	21474

C. Acquisition Strategy: The EMD contract competitively awarded in FY 1995. The AAE approved the Limited Procurement Urgent (LPU) for acquisition of the CMWS capability for Special Operations Force (SOF) aircraft in March 02. 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 will be sole source, fixed price procurement. Funding supports an acquisition strategy of buying CMWS separately from ATIRCM, while installing A-kits on all modernized aircraft. FY05 RDTE funds support ATIRCM/CMWS P3I efforts.

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
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 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Thiokol (AIRCMM)	C/CPIF	Brigham City, UT	1563	0		0		0		0	1563	1563
b . BAE Systems (ATIRCM) EMD basic contract	C/CPAF	Nashua, NH	23574	0		0		0		0	23574	171784
c . BAE Systems (ATIRCM) T&M efforts-Reliability Demonstration Testing	C/CPFF	Nashua, NH	40412	0		1623	3Q	0		0	42035	42050
d . BAE Systems (ATIRCM) 6 ATIRCM	SS/CPFF	Nashua, NH	14640	0		0		0		0	14640	14640
e . Cowley (ATIRCM)	C/CPFF	Chantilly, VA	100	0		0		0		0	100	100
f . Test Facility - Amherst	C/CPFF	Huntsville, AL	1300	0		0		0		0	1300	1300
g . Other	Various	Various	1062	0		0		0		0	1062	1062
h . BAE Systems ATIRCM Multi-band laser & Miniaturization	SS/CPFF	Nashua, NH	0	0		0		3373	2Q	0	3373	3373
Subtotal:			82651	0		1623		3373		0	87647	235872
Remarks: FY99 & Prior funding in Project 665												

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L20		
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Modeling & Simulation Contractor Support	C/FFP	Huntsville, AL	600	0		0		0		0	600	600
b . Contractor Support	C/FFP	Huntsville, AL	9554	0		0		0		0	9554	9554
c . Matrix Support	MIPR	CECOM, Fort Monmouth NJ; AMCOM, Huntsville, AL	3055	0		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 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . EPG support	MIPR	Ft. Huachuca, AZ	5925	0		1623	2-4Q	0		0	7548	0
b . Operational Test Center User test	MIPR	Various	6732	0		2884	1-4Q	3537	1-4Q	0	13153	0
c . ATTC test support	MIPR	Fort Rucker, AL	2504	0		0		0		0	2504	0
d . Neer/Thomsen/O2K contractor test support	C/FFP	Huntsville, AL	2663	0		0		0		0	2663	2663

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY 5 - System Development and Demonstration					PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT					PROJECT L20		
III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
e . Westar test support	C/FFP	Huntsville, AL	559	0		0		0		0	559	559
f . PM ITTS/46TH Test Wing (Eglin AFB)	MIPR	Eglin AFB, FL	2800	0		0		0		0	2800	0
g . RTTC	MIPR	Redstone Arsenal, AL	400	0		720	3-4Q	0		0	1120	0
h . Other	MIPR		105	0		0		0		0	105	0
Subtotal:			21688	0		5227		3537		0	30452	3222
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In house support	PM AES, Huntsville, AL	5336	0		221	2Q	227	1Q	0	5784	0
b . Congressional Adjustments			0	0		68	1Q	0		0	68	0
Subtotal:			5336	0		289		227		0	5852	0

Schedule Profile (R4 Exhibit)																				February 2004												
BUDGET ACTIVITY 5 - System Development and Demonstration										PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT																		PROJECT L20				
Event Name	FY 02				FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) CMWS Limited Production Urgent		▲1																														
(2) LPU CMWS contract award		▲2																														
(3) ATIRCM MS C Decision												▲3																				
(4) LRIP contract award												▲4																				
(5) First Unit Equipped - CMWS												▲5																				
(6) ATIRCM - FRP																▲6																
(7) First Unit Equipped - ATIRCM																▲7																
CMWS Integration Testing																																
IOT&E																																
P3I Incrementally (Multi-band laser/Laser Miniaturization)																																

Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604270A - EW DEVELOPMENT				PROJECT L20
<u>Schedule Detail</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
CMWS Limited Production Urgent							
LPU CMWS Contract Award							
ATIRCM Milestone C Decision		1Q					
LRIP contract award		2Q					
First Unit Equipped - ATIRCM		2Q					
ATIRCM - FRP			4Q				
First Unit Equipped - ATIRCM			4Q				
CMWS Integration Testing	1-4Q						
IOTE			2Q				
P3I Incrementally 9Multi-band laser/Laser Miniaturization)			1-4Q	1-4Q	1-4Q	1-3Q	