

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development
--	---

COST <i>(In Thousands)</i>	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	77557	80019	61056	37121	56124	42796	67546	Continuing	Continuing
D2VT Advanced Threat Infrared Countermeasures (ATIRCM)/Common Missile Warning System (CMWS) Operational Test	1210	828	0	0	0	0	0	0	2184
DL12 Prophet	11668	21775	4985	1997	29764	19822	44575	Continuing	Continuing
DL15 Army Reprogramming and Analysis Team (ARAT) - TSS	3158	0	0	0	0	0	0	0	4247
DL16 Trojan Development	1258	0	0	0	0	0	0	0	2460
DL20 Advanced Threat Infrared Countermeasures/ Common Missile Warning Systems (ATIRCM/ CMWS) Development	0	49036	41340	32007	16382	10059	10046	Continuing	Continuing
D665 Aircraft Survivability Equipment Development	60263	8380	14731	3117	9978	12915	12925	Continuing	Continuing

A. Mission Description : 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 threat technical advancements. 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) requirements, attach/scout, and assault/cargo mission requirements. Prophet provides for development of multifunction ground based and airborne intelligence and electronic warfare systems. Trojan developments will complete Proof-of-Principle R&D for specific Trojan applications in advanced threat signals processing and prototype software upgrades; high frequency (HF) algorithms for compact antenna array technology (CAAT) configured into small aperture antenna arrays; 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.

UNCLASSIFIED

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

DATE
February 2000

BUDGET ACTIVITY
5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE
0604270A Electronic Warfare (EW) Development

B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (<u>FY 2000/2001</u> PB)	86258	78603	81037
Appropriated Value	86989	80603	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-731		
b. SBIR / STTR	-2897		
c. Omnibus or Other Above Threshold Reprogrammings	+250	-304	
d. Below Threshold Reprogramming	-5596		
e. Rescissions	-458	-280	
Adjustments to Budget Years Since <u>FY 2000/2001</u> PB			-19981
Current Budget Submit (<u>FY 2001</u> PB)	77557	80019	61056

Change Summary Explanation: Funding - FY 2001: Funding decrease in DL12 based on restructuring of program.

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	PROJECT D2VT
--	---	-------------------------------

COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D2VT Advanced Threat Infrared Countermeasures (ATIRCM)/Common Missile Warning System (CMWS) Operational Test	1210	828	0	0	0	0	0	0	2184

A. Mission Description and Justification: This project supports the operational testing for the Advanced Threat Infrared Countermeasures (ATIRCM)/ Common Missile Warning System (CMWS). This project will provide active and passive Infrared Countermeasure (IRCM) protection against infrared guided weapons. The system is designed to meet operational requirements for a modular IRCM system capable of providing awareness and self-protection jamming countermeasures. The system is applicable to the AH-64D, MH-47D/E, MH-60K/L, EH-60, UH-60, and CH-47D aircraft. The program has been designated a tri-service program, with application to the Air Force and Navy aircraft.

FY 1999 Accomplishments:

- 1210 Continue ATIRCM/CMWS operational test support
- Total 1210

FY 2000 Planned Program:

- 806 Continue ATIRCM/CMWS operational test support
 - 22 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
- Total 828

FY 2001 Planned Program: Project not funded in FY 2001

B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
APA, BA 4 AZ3507 ASE Infrared CM				26422	68495	112686	109967	Cont	Cont
APA, BA 2 AA0722 ATIRCM Modifications		4901		12015	11958	21087	31025	Cont	Cont

C. Acquisition Strategy: Not applicable

D. Schedule Profile	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Continue Operational testing for ATIRCM/CMWS	1Q-4Q	1Q-4Q					

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development				PROJECT DL12		
COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
DL12 Prophet		11668	21775	4985	1997	29764	19822	44575	Continuing	Continuing
<p>A. <u>Mission Description and Budget Item Justification:</u> This project provides for replacement of the legacy systems Trailblazer, Traffic Jam and Teammate. These systems are currently deployed as divisional assets and will be replaced with the Prophet Ground system. Prophet will be the Division and Armored Cavalry Regiment Commanders principal SIGINT and Electronic Warfare (EW) System. It will be designed to support Army XXI and beyond. Prophet will provide the Tactical Commander with an enhanced capability for situational awareness, electronic Intelligence Preparation of the Battlefield (IPB), battlespace visualization, target development, and force protection throughout the division's width and depths as defined in Army XXI. The Prophet system will interface with the division and armored cavalry Analysis Control Element's (ACE) All Source Analysis System (ASAS) as well as the maneuver brigade Analysis Control Team's (ACT) Common Ground Station (CGS) and/or ASAS-Remote Work Stations (ASAS-RWS) providing near-real-time (NRT) digital inputs to the common operating picture (COP). Tactical Commanders will receive added force protection through Prophets' capability of providing reports of intercepted voice communications to the supported units from the Prophet Ground assets. The Prophet System is needed to counter the communications technology revolution and the current worldwide threat; to support the current Army mission, doctrine, priorities, and requirements.</p> <p>The Prophet Air program was redirected to a TUAV based platform as part of the new Army Transformation. The Prophet System components will include a ground-sensor, an unmanned aerial vehicle (UAV) and a control facility. They will be developed as two separate contract actions; Prophet Ground and Prophet UAV. Prophet Ground will be developed prior to Prophet UAV. In FY01, the Teammate, Traffic Jam and Trailblazer systems will begin to defield and be replaced by Prophet Ground, due to escalating Operation and Sustainment (O&S) costs and reliability concerns. Prophet Ground will include Electronic Attack (EA) and Low Probability of Intercept (LPI) capabilities. The Prophet Ground system is an integral part of the Army transformation strategy. Prophet UAV will include the remote control of airborne sensors and electronically map the enemy's communications and radar systems in the Divisions' Area of Operations. The Prophet System is required to detect, locate and identify critical enemy nodes (emitters), by EW or by divisional assets.</p> <p>This PE/Project funds the Prophet Ground EMD efforts through and including FY03. FY04 and beyond, provides for the Prophet UAV EMD phase. The Prophet UAV Program Definition and Risk Reduction (PDRR) phase is covered under PE/Project 63774/131.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 1155 Refurbished HMWWV for Prophet Ground • 502 Conducted analysis of Electronic Attack (EA) and COMINT Integration into a HMMWV for Prophet Ground • 6171 Prophet Ground Block I (COMINT) Development and Support • 965 Conducted Threat Analyses Study for Prophet Ground and Prophet Heliborne • 638 Conducted EA Characterization Analyses of NDI solutions for Prophet Heliborne 										
Project DL12		Page 4 of 15 Pages				Exhibit R-2A (PE 0604270A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	PROJECT DL12
---	--	------------------------

- 774 Prepared for and Conduct Demonstration of COMINT subsystem for Prophet Heliborne

FY 1999 Accomplishments: (continued)

- 207 Prepared Prophet Milestone documentation.
 - 857 Integration and technical tests required for participation in the Joint Contingency Force (JCF) Army Warfighting Experiment (AWE)
 - 399 Y2K fixes for GBCS/MEWSS
- Total 11668

FY 2000 Planned Program:

- 6900 Award EMD contract for Prophet Ground Block II Electronic Attack (EA)
 - 5531 Prepare for and conduct Prophet Ground Block I/II Developmental Test (DT) and IOT&E
 - 400 Conduct Risk Mitigation for Prophet Ground Block III Low Probability of Intercept (LPI)
 - 1300 Participate in JCF AWE with Prophet Ground Block I (COMINT)
 - 3094 Integration and technical tests required for Prophet Ground Block I/II in support of the Army Transformation Strategy
 - 3999 Support the JCF AWE
 - 551 Small Business Innovative Research/Small Business Technology Transfer Programs
- Total 21775

FY 2001 Planned Program:

- 1210 Complete Prophet Ground Block I/II IOT&E
 - 2000 Incorporate fixes as a result of Prophet Ground Block I/II IOT&E
 - 275 Continue Risk Mitigation for Prophet Ground Block III (LPI)
 - 1500 Continue Prophet Ground Blocks I/II support for the Army Transformation Strategy
- Total 4985

B. Other Program Funding Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To Complete	Total Cost
OPA (SSN BZ9750)	14034	9048	224	227	142	964	963	Continue	Continue
APA (SSN AB3000)	0	4872	0	0	0	0	0	0	4872
OPA (SSN BZ7326)	11969	0	9571	14871	0	14839	14823	Continue	Continue
RDTE (PE 63774 131) – Prophet UAV only	0	0	7000	8000	7000	0	0	0	22000
RDTE Budget Activity 7 DCP PE 030885G, Prophet	13523	11804	11578	14381	11475	10184	10572	Continue	Continue

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	PROJECT DL12
---	--	------------------------

C. Acquisition Strategy: The Prophet Ground Acquisition Strategy is structured to optimize system capability while reducing risk and streamlining business and engineering processes. Prophet Ground consists of three Blocks: Block I, COMINT; Block II, Electronic Attack (EA); and Block III Low Probability of Intercept (LPI). Block I (COMINT) was a sole source effort which leveraged off existing COTS equipment. Block II (EA) will be awarded as a separate contract action in 2Q FY00. Block III (LPI), is expected to be a competitive award.

D. Schedule Profile	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Begin Prophet Ground Block I EMD		4Q					
Begin Prophet Ground Block II EMD			2Q				
Prophet Ground Blocks I/II DT/IOT&E		4Q	1Q				
Milestone III Decision for Prophet Ground Blocks I/II			2Q				
Award Prophet Ground Blocks I/II Production Contract			3Q				
Milestone II Decision for Prophet Ground Block III				4Q			
Begin Prophet Ground Block III EMD					1Q		
Begin Prophet UAV EMD						1Q	

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development					PROJECT DL12		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Y2K for GBCS/MEWSS	CPFF	LMFS, Owego, NY	0	250	2Q					0	250	250
b. Refurbish HMMWV for Prophet Ground (PG)	MIPR	Tobyhanna Army Depot, PA	0	724	3Q					0	724	724
c. EA Study for PG	CPFF	Rockwell Collins, Cedar Rapids, IA	0	315	4Q					0	315	315
d. Prophet Ground Blocks I/II integration efforts to support the Army Transformation Strategy	TBD	TBD	0			1300	3Q	1345	1Q	Continue	Continue	Continue
e. Prophet Ground Block I	CPFF	Delfin Sys Corp, Santa Clara, CA	0	1087	3Q	2500	2Q	290	1Q	Continue	Continue	Continue
f. Prophet Ground Block II	TBD	TBD	0			6224	2Q	565	1Q	Continue	Continue	Continue
g. Prophet Ground Training	MIPR	NSTO, Fort Huachuca AZ	0			500	3Q			0	500	500
h. Prophet Ground/Prophet Heliborne studies & analysis	MIPR	EPG/I2WD	0	1490	2Q					0	1490	1490
i. OSD Withhold				4353						0	4353	4353
j. JCF AWE						3999				0	3999	3999
k. SBIR/STTR						551					551	551
Subtotal Product Development:				8219		15074		2200		Continue	Continue	Continue
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Matrix Support	MIPR	HQ, CECOM		985	2Q	800	2Q	800	1Q	Continue	Continue	Continue
b. Contractor Eng & Spt (Risk Mitigation)	FFP	MITRE; McLean, VA						275	1Q	0	275	275
c. Contractor Eng & Spt	FFP	Sytex; Doylestown PA		224	2Q	370	2Q	110	1Q	Continue	Continue	Continue
d. Contractor Eng & Spt	FFP	CACI; Falls Church VA		325	4Q					Continue	Continue	Continue
Subtotal Support Costs:				1534		1170		1185		Continue	Continue	Continue

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development					PROJECT DL12		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Demonstrate COMINT & EA subsystems for Prophet Heliborne	MIPR	EPG/other Gov		1015	3Q					0	1015	1015
b. Participate in JCF AWE	MIPR	Various				1000	3Q			0	1000	1000
c. Conduct Prophet Ground DT/IOT&E	MIPR	Various				4031	3Q	1100	1Q	0	5131	5241
Subtotal Test and Evaluation:				1015		5031		1100			7146	4835
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Program Management		PM, Signals Warfare		900	2Q	500	2Q	500	1Q	Continue	Continue	Continue
Subtotal Management Services:				900		500		500		Continue	Continue	Continue
Project Total Cost:				11668		21775		4985		Continue	Continue	Continue

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	PROJECT DL20
--	---	-------------------------------

COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
DL20 Advanced Threat Infrared Countermeasures/ Common Missile Warning Systems (ATIRCM/ CMWS) Development	0	49036	41340	32007	16382	10059	10046	Continuing	Continuing

A. Mission Description and Budget Item Justification: The ATIRCM/CMWS is a U. S. Army program to develop, test and integrate defensive infrared (IR) countermeasures capabilities into existing, current generation host platforms for more effective protection against a greater number of IR guided missile threats than afforded by currently fielded IR countermeasures. The CMWS component systems is a joint U. S. Navy, U. S. Marine Corps, and U. S. Air Force program to develop, test, and integrate common missile warning on tactical aircraft and rotorcraft for IR guided missile threat warning. The ATIRCM/CMWS is the core systems of the U. S. Army's modular Suite of Integrated Infrared Countermeasures (SIIRCM). For the Army, the current IRCM configuration for the fleet helicopters consist of the AN/ALQ-144A for the AH-64 and the UH/MH-60 and the AN/ALQ-156 missile detector and M-130 flare/chaff dispenser for the CH/MH-47. The ATIRCM/CMWS will selectively replace the AN/ALQ-144A, AN/ALQ-156 or AN/AAR-47, and the M-130. For the Navy and the Air Force, no existing equivalent systems exist.

FY 1999 Accomplishments: Project not funded in FY 1999. Funds reside in Project D665 – Aircraft Survivability Equipment Development.

FY 2000 Planned Program:

- 20720 Continue EMD contract for ATIRCM/CMWS
 - 11631 Continue Development Testing for ATIRCM/CMWS
 - 1300 Complete EMD for Advanced Infrared Countermeasures Munitions (AIRCMM)
 - 665 Complete EMD for Advanced Visual Electro-optical Signature Suppression & Analysis (AVESSA)
 - 4194 Continue Modeling & Simulation efforts for ATIRCM/CMWS
 - 6864 Continue Support costs for ATIRCM/CMWS
 - 2371 Continue in-house and program management administration
 - 1291 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
- Total 49036

FY 2001 Planned Program:

- 11164 Continue EMD contract for ATIRCM/CMWS
- 3000 Continue Modeling & Simulation efforts for ATIRCM/CMWS
- 1000 Initiate AVESSA P3I
- 400 Initiate AIRCMM P3I
- 14680 Complete development testing for the ATIRCM/CMWS

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	PROJECT DL20
---	--	------------------------

FY 2001 Planned Program: (continued)

- 9017 Continue Support costs for ATIRCM/CMWS
 - 2079 Continue in-house and program management administration
- Total 41340

B. Other Program Funding Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To <u>Compl</u>	Total <u>Cost</u>
APA, BA 4 AZ3507 ASE Infrared CM				26422	68495	112686	109967	Cont	Cont
APA, BA 2 AA0722 ATIRCM Modifications		4901		12015	11958	21087	31025	Cont	Cont

C. Acquisition Strategy: EMD contract competitively awarded in FY 1995 with a LRIP decision and procurement scheduled FY 2000.

D. Schedule Profile	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Continue ATIRCMWS EMD contract		1Q-4Q	1Q-4Q				
Complete ATIRCM/CMWS EMD contract				4Q			
Continue ATIRCM/CMWS development testing		1Q-4Q	4Q				
Complete ATIRCM/CMWS modeling & simulation		1Q-4Q	1Q-4Q				
Complete AVESSA EMD phase		4Q					
Complete AIRCMM EMD phase		4Q					
Continue Project Management Administration		1Q-4Q	1Q-4Q				
Initiate AIRCMM P3I effort			1Q-4Q				
Continue AIRCMM P3I effort				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q
Initiate AVESSA P3I effort			1Q-4Q				
Continue AVESSA P3I effort				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	PROJECT DL20
---	--	------------------------

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Thiokol (AIRCMM)	C/CPIF	Picatinny Arsenal, NJ				1300	Mar 00	1000	Jan 01	Cont	2300	Cont
b. Thiokol (AVESSA)	C/CPIF	Picatinny Arsenal, NJ				665	Feb 00	400	Jan 01	Cont	1065	Cont
c. Sanders (ATIRCM)	C/CPAF	CECOM, NJ				20720	Apr 00	11164	Jan 01	Cont	31884	Cont
Subtotal Product Development:						22685		12564			35249	

Remark: FY99 and prior funding included in Project D665

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Contractor Support	C/FFP	AMCOM, AL				6129	Mar 00	5000	Jan 01	Cont	11129	Cont
b. Matrix Support	MIPR	Various				4929	Quarterly	7017	Quarterly	Cont	11946	Cont
Subtotal Support Costs:						11058		12017			23075	

Remark: FY99 and prior funding included in Project D665

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. EPG support	MIPR	Ft. Huachuca, AZ				500	Quarterly	500	Quarterly	Cont	1000	Cont
b. TECOM support	MIPR	Various				2640	Quarterly	2640	Quarterly	Cont	5280	Cont
c. ATTC test support	MIPR	Fort Rucker, AL				560	Quarterly	560	Quarterly	Cont	1120	Cont
d. Sanders test support	T&M	Nashua, NH				7731	May 00	10780	Nov 00	Cont	18511	Cont
e. Neer test support	C/FFP	AMCOM, AL				200	Dec 99	200	Dec 00	Cont	400	Cont
Subtotal Test and Evaluation:						11631		14680			26311	

Project DL20 Page 11 of 15 Pages Exhibit R-3 (PE 0604270A)

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development					PROJECT DL20		
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Project Management		In-House AMCOM				2371	Quarterly	2079	Quarterly	Cont	4450	Cont
b. SBIR/STR						1291					1291	
Subtotal Project Management:						3662		2079			5741	
Project Total Cost:						49036		41340			90376	

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000					
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development				PROJECT D665				
COST (In Thousands)				FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D665 Aircraft Survivability Equipment Development				60263	8380	14731	3117	9978	12915	12925	Continuing	Continuing
<p>A. <u>Mission Description and Budget Item Justification:</u> Aircraft Survivability Equipment Development provides for the development and system integration of Aircraft Survivability Equipment (ASE) to achieve survivability, reduce vulnerability, and enhance combat effectiveness required to fulfill all Army aircraft mission requirements. Equipment developed will increase combat effectiveness and potential for mission accomplishment by reducing or eliminating the ability of threat air defense systems to detect, hit, track, damage or destroy Army aircraft. Developments respond to the approved requirement documents, test and type classification for production and fielding of ASE systems to address infrared, radar, laser and optical/electro-optical directed air defense threats. Efforts in development include new or upgraded systems to counter monopulse, millimeter wave, frequency agile, pulse doppler and continuous wave radars, passive infrared missile seekers and laser directed weapon systems. Continual adjustments are made to this program to meet the changing and evolutionary nature of technology and threat. This program has joint service applications that are coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTTCG/AS), as well as NATO applications coordinated through DOD. This project also provides the technical base for electronic warfare equipment for Apache, Blackhawk, Chinook, Comanche and Special Operations Aircraft. The Suite of Integrated Radio Frequency Countermeasures (SIRFC) and Advanced Threat Infrared Countermeasures (ATIRCM) systems are necessary to the survival of the AH-64, MH-47E, MH-60K, RC-12K, EH-60, UH-60 and CH-47D aircraft. The ATIRCM program has been designated a Tri-service program. The SIRFC is an Office of the Secretary of Defense (OSD) oversight program with high joint interest. Air Force Special Operations Command (AFSOC) selected SIRFC as CV-22 EW bus controller and sensor fusion processor. SIRFC EMD schedule is connected to the CV-22 development and test schedule and is monitored closely by US Special Operations Command (SOCOM). Both SIRFC and ATIRCM have application to the Air Force and Navy aircraft. The SIRFC system key capabilities include advanced threat radar warning advanced threat radar jammer, sensor data fusion and lightweight modular design. ATIRCM/CMWS is an integrated Infrared (IR) countermeasure system designed to bring the latest and most sophisticated state of the art technologies available for US Army aircraft to survive on the modern digital battlefield.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 34448 Continued EMD of ATIRCM/CMWS • 1438 Continued EMD of the AIRCMM • 348 Continued EMD of the AVESSA • 21054 Continued EMD of the SIRFC • 2975 Continued in-house and program management administration <p>Total 60263</p>												
Project D665				Page 13 of 15 Pages				Exhibit R-2A (PE 0604270A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development	PROJECT D665
---	--	------------------------

- FY 2000 Planned Program:**
- 7900 Continue EMD of SIRFC
 - 356 Continue in-house and program management administration
 - 124 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
- Total 8380

- FY 2001 Planned Program:**
- 920 Continue in-house and program management administration
 - 13811 Complete EMD of SIRFC
- Total 14731

B. <u>Other Program Funding Summary</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To Compl	Total Cost
APA, BA 4 AZ3508 ASE	3036	86	0	32292	13256	13238	16021	Cont	Cont
APA, BA 2 AA0720 ASE Modifications	5419	11693	4487	14295	4755	4939	2222	Cont	Cont

C. Acquisition Strategy: Project is comprised of multiple programs, which have been competitively awarded.

D. <u>Schedule Profile</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2004</u>	<u>FY 2005</u>
Continued EMD of ATIRCM/CMWS	1Q-4Q							
Continued EMD of AIRCMM	1Q-4Q							
Continued EMD contract of SIRFC	1Q-4Q							
Continued EMD of AVESSA	1Q-4Q							
Continue EMD of SIRFC		1Q-4Q						
Complete EMD of SIRFC			1Q-3Q					
Start Electro Countermeasures Enhancements				1Q-4Q	1Q-3Q	1Q-4Q	1Q-4Q	1Q-4Q

UNCLASSIFIED

ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604270A Electronic Warfare (EW) Development					PROJECT D665		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Thiokol (AIRCMM)	C/CPIF	Picatinny Arsenal, NJ	6182	1438	2Q FY99						7620	
a. ITT Corp (SIRFC)	C/CPAF	CECOM	43659	18900	2Q FY99	7900	1Q FY00	13811	2Q FY01		84270	
b. Sanders (ATIRCM)	C/CPAF	CECOM	41569	23606	2Q FY99						65175	
c. Various Contracts		CECOM	15364								15364	
Subtotal Product Development:			106774	43944		7900		13811			172429	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Support Cost	MIPR	CAS	2082	2082							4164	
b. Modeling & Sim	MIPR			2458							2458	
Subtotal Support Costs:			2082	4540							6622	
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. TECOM	MIPR		4312	2471							6783	
b. EPG	MIPR		6025	4344							10369	
c. MISC	MIPR		1521	1989							3510	
Subtotal Test and Evaluation:			11858	8804							20662	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
c. Project Management	MIPR	Various		2975		356		920			4251	
d. SBIR/STTR						124					124	
Subtotal Management Svs:				2975		480		920			4375	
Project Total Cost:			120714	60263		8380		14731			204088	