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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)								DATE February 2000	
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment					
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
Total Program Element (PE) Cost	50648	35958	43229	37087	37454	47180	51662	Continuing	Continuing
D253 Defense Satellite Communications Systems-Defense Communications Systems (DSCS-DCS)(Phase II)	15192	8916	9885	11318	11481	13528	13494	Continuing	Continuing
D384 SMART-T	23355	13828	17331	14960	14345	7141	6821	0	298852
D456 MILSATCOM System Engineering	4216	6250	8907	10809	11628	10938	9708	Continuing	Continuing
D559 Automated Communications Management System (ACMS)	7885	5963	6089	0	0	0	0	0	28848
D561 Military Individual Communicator (MIC)	0	1001	1017	0	0	0	0	0	2018
D562 Multiband Integrated Satellite Terminal (MIST)	0	0	0	0	0	9734	14844	Continuing	Continuing
D566 Transit Case MDR (TRAM)	0	0	0	0	0	5839	6795	Continuing	Continuing

A. Mission Description and Justification: Military Satellite Communications (MILSATCOM) systems are joint program/project efforts to satisfy ground mobile requirements for each Service, Joint Chiefs of Staff (JCS), National Command Authority, Commanders-In-Chief (CINCs), National Security Agency and Office of the Secretary of Defense and other governmental, non-DoD users. The worldwide MILSATCOM systems are the following: Ultra High Frequency (UHF) Fleet Satellite/Air Force Satellite (FLTSAT/AFSAT) system; the Super High Frequency (SHF) Defense Satellite Communications System (DSCS); the Extremely High Frequency (EHF) MILSTAR system; the UHF Follow-On Satellite system; and all MIL-STD-1582C compatible payloads. As the lead service for MILSATCOM Ground Subsystems, the Army is responsible for developing, and procuring satellite terminals; satellite control subsystems; communications subsystems and all related equipment. This also includes maintaining the life cycle logistics support, required to achieve end-to-end connectivity to satisfy JCS Command, Control, Communications, and Intelligence (C3I) supporting the President; JCS; CINCs; Military Departments; Department of State; and other Departments and Agencies of the government.

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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)	52447	36230	47743
Appropriated Value	53897	36230	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-1450		
b. SBIR / STTR	-1394		
c. Omnibus or Other Above Threshold Reductions		-148	
d. Below Threshold Reprogramming	-193		
e. Rescissions	-212	-124	
Adjustments to Budget Years Since <u>FY 2000/2001</u> PB			-4514
Current Budget Submit (<u>FY 2001</u> PB)	50648	35958	43229

Change Summary Explanation: Funding - FY 2001: The funding decreases to projects D456 MILSATCOM Systems Engineering (-3306) and D559 ACMS (-3102), and a funding increase to project D253 DSCS (+2003) are to realign project funding with current estimates and program priorities.

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment				PROJECT D253		
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	
D253 Defense Satellite Communications Systems-Defense Communications Systems (DSCS-DCS)(Phase II)	15192	8916	9885	11318	11481	13528	13494	Continuing	Continuing	
<p>A. <u>Mission Description and Budget Item Justification:</u> Project D253 - DSCS-DCS Phase II: This project provides funds required to develop strategic and tactical Ground Subsystem equipment to support JCS validated Command, Control, Communications and Intelligence (C3I) for the worldwide Super High Frequency (SHF) Defense Satellite Communications System (DSCS) program. Continuing upgrades for the DSCS are vital to support the emerging power projection and rapid deployment role of the Armed Forces. DSCS provides warfighters multiple channels of tactical connectivity as well as interface with strategic networks and national decision-makers.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 473 Completed the Replacement BATSON (RBATSON) program • 3610 Continued the DSCS Integrated Management System (DIMS) Interface Software program • 3700 Initiated the Common Network Planning Software (CNPS) program • 5554 Developed test bed, test link, and engineering and installation standards in support of the Defense Information System Network - Europe • 1855 Continued SATCOM Engineering Lab (SEL), PM Admin, and SETA efforts <p>Total 15192</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 3000 Continue the DIMS Interface Software program • 4278 Continue CNPS program • 1398 Continue SEL, PM Admin and SETA efforts • 240 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR) <p>Total 8916</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 3617 Continue the DIMS Interface Software program • 5001 Continue CNPS program • 1267 Continue SEL, PM Admin and SETA efforts <p>Total 9885</p>										
Project D253			<i>Page 3 of 21 Pages</i>			Exhibit R-2A (PE 0303142A)				

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B. Other Program Funding Summary	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
OPA 2 - SSN: BB8500	93896	68489	72034	62733	55610	78708	79723	Cont	Cont

C. Acquisition Strategy: The Replacement BATSON (RBATSON) program will be followed by a competitive firm fixed price procurement program that contain a basic production year followed by one option year of production. The RBATSON provides security, authenticity, and anti-jam waveform protection to satellite commands generated by the RSCCE for transmission to DSCS III satellites. A total of 21 RBATSON units will be procured and fielded to DSCS Operations Centers and contingency sites worldwide. PM DCATS also developed a test bed, test link, and engineering and installation standards in support of the Defense Information System Network - Europe. The DSCS Integrated Management System (DIMS) and Common Network Planning Software (CNPS) programs are software development programs that are not planned to have follow-on production. DIMS provides the capability to electronically disseminate network plans to the monitoring and controlling DSCS Operations Control System (DOCS) subsystems and to retrieve and display subsystem monitoring data. It also provides a comprehensive view of network operations at DSCSOCs and DISA management sites. CNPS plans strategic and Ground Mobile Forces (GMF) satellite communications networks for DSCS and commercial satellites. DIMS and CNPS will be installed at DSCS Operations Centers and DISA Management Sites at worldwide locations.

D. Schedule Profile	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Complete RBATSON Testing	4Q						
Award CNPS Contract	3Q*						
Complete CNPS Testing					4Q		
Award Microwave Test Link Contract	2Q*						
DIMS Version 2.0 Software Testing	1Q*						
DIMS Version 3.0 Software Testing		3Q					
DIMS Version 4.0 Software Testing			4Q				

*Denotes Milestone Completion

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment						PROJECT D253		
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. DIMS Software	SS / CPFF	JHU/APL, Laurel, MD	4115	3152	Jan 99	2637	Feb 00	3142	Jan 01	14644	27690	
b. CNPS	C / FFP	Logicon, Winter Park, FL		3000	Apr 99	3654	Mar 00	4301	Mar 01	10704	21659	
c. Microwave Test Link	C / FFP	Alcatel, Plano, TX		5554	Feb 99						5554	
Subtotal Product Development:			4115	11706		6291		7443		25348	54903	
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	Fort Monmouth, NJ		1155		621		750		Cont	2526	
b. SETA Support	C / CPFF	Fort Monmouth, NJ		276		266		325		Cont	867	
c. Engineering Support	SS / CPFF	JHU/APL, Laurel, MD		200		100		100		Cont	400	
d. Core Support	Various	Fort Monmouth, NJ		300		300		300		Cont	900	
Subtotal Support Costs:				1931		1287		1475			4693	
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. Integrated Research Facility	MIPR	Fort Monmouth, NJ	750	741		325		193		Cont	2009	
Subtotal Test and Evaluation:			750	741		325		193			2009	

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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. PM Admin	Various	Fort Monmouth, NJ		814		773		774		Cont	2361		
b. SBIR/STTR						240					240		
Subtotal Management Services:				814		1013		774			2601		
Project Total Cost:				4865		15192		8916		9885		25348	64206

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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment	PROJECT D384
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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
D384 SMART-T	23355	13828	17331	14960	14345	7141	6821	0	298852

A. Mission Description and Budget Item Justification: Project D384 - SMART-T: The Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T) will provide a range extension capability for the Army's Mobile Subscriber Equipment (MSE) to support the Force Projection Army. Specifically, it will provide a satellite interface to permit uninterrupted communications as our advancing forces move beyond the line-of-sight capability of MSE as the Division front expands. This equipment will communicate at both low and medium data rates (LDR/MDR) over the MILSTAR satellite constellation. It will also be compatible with the UHF Follow-On (UFO) and the Navy Fleetsatcom EHF satellite packages and MIL-STD-1582C compatible payloads. It will provide the security, mobility, and anti-jam capability required to defeat the threat and satisfy the critical need as stated above. The SMART-T will also have Low Probability of Interception and Low Probability of Detection (LPI/LPD) to avoid being targeted for destruction, jamming or intercept. The prime mover will be a High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) configured with all the electronics and the self-erectable antenna. In order to maintain proficiency with the terminal given limited satellite access for training, a new EHF payload simulator is being developed for use at Fort Hood. The SMART-T provides mobile anti-jam reliable communications for the warfighter.

FY 1999 Accomplishments:

- 10503 Continued development of Demand Assigned Multiple Access (DAMA), and begin development of Packet DAMA
 - 8030 Completed Network Control development efforts and complete Advanced Extremely High Frequency (AEHF) test bed feasibility efforts
 - 4822 Continued payload specification change development work
- Total 23355

FY 2000 Planned Program:

- 4781 Complete development of DAMA and continue development of Packet DAMA
 - 3650 Begin EHF satellite payload simulator development efforts for a new simulator at Fort Hood
 - 2731 Continue payload specification change development work
 - 1300 Operate interim EHF "lab configured" payload simulator at Fort Hood
 - 1000 Begin initial AEHF component efforts
 - 366 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
- Total 13828

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FY 2001 Planned Program:

- 8397 Continue AEHF development efforts and continue payload specification change development work
 - 4950 Continue Packet DAMA development efforts
 - 3984 Complete development of satellite payload simulator at Fort Hood
- Total 17331

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 Compl	Total Cost
Other Procurement Army 2 - SSN: BC 4002	56128	31761	48594	19606	12675	32832	20140	12305	33280
Other Procurement Army 4 - SSN: BS 9720	1726	0	5196	2553	1967	1363	1167	0	16356

C. Acquisition Strategy: The SMART-T program employed a competitive development strategy. The development phase included two contractors performing under Cost-Plus-Incentive-Fee (CPIF) contracts. The contracts were awarded on 9 November 1992 to Raytheon Company (Marlborough, MA) and Rockwell International (Richardson, TX). Twelve Engineering Development Model (EDM) terminals (6 from each contractor) were developed under the two contracts. The streamlining features of this phase included a reliability growth plan to achieve the required reliability by Follow-On Test and Evaluation (FOT&E). The Low Rate Initial Production (LRIP) and Full Rate Production (FRP) contract was competitively awarded to Raytheon Company on 7 February 1996. SMART-T Milestone III Decision was successfully completed Nov 98. Award of the first FRP Option occurred in Jan 99. The FRP contract will include a block implementation of RDTE-funded terminal Baseline modifications for Demand Assigned Multiple Access (DAMA), Packet DAMA, and Advanced EHF Waveform. Development efforts for these modifications will be conducted in accordance with the schedule provided in this submission. The total Army terminal requirement is 209, of which 43 were procured during LRIP (base year plus one option). The Air Force procured 9 terminals during LRIP. The Full Rate Production (FRP) quantities (166 Army terminals) are awarded as fixed price options to the LRIP/FRP contract. Additional quantities (i.e., 100) will be procured for the Air Force, Marine Corps, JCSE, and other DoD.

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>
MS III	1Q*						
FRP Award	2Q*						
FOT&E			1Q				
Complete DAMA Development		2Q					
Begin Development of Remaining Block Mods for Packet DAMA and Advanced EHF	2Q*						
IOC			2Q				
Complete Network Control Development Efforts	4Q*						

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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 New EHF Simulator (Fort Hood)		2Q*						
Complete New EHF Simulator			4Q					
Complete Development of Remaining Block Mods						2Q		
Complete Payload Specification Change Development							4Q	
*Denotes Milestone Completion								
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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment						PROJECT D384		
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. Dual Development	C / CPIF	Rockwell Richardson, TX	117173								117173	
b. Contracts		Raytheon Marlborough, MA										
c. Baseline Mods	SS / CPAF	Raytheon Marlborough, MA	26852	17825	Jan 99	6762	Jan 00	11397	Jan 01	39367	102203	
d. Govt Support	MIPR	Various	12239	450		450		550		1500	15189	
e. GFP	MIPR	Various	149								149	
Subtotal Product Development:			156413	18275		7212		11947		40867	234714	
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. Other Contracts	MIPR	Various	11290								11290	
b. Core Support	N/A	PM Milsatcom, NJ	4152	300		300		400		1400	6552	
c. Lab Activities	MIPR	Various	3406	1800		1000		1000		1000	8206	
Subtotal Support Costs:			18848	2100		1300		1400		2400	26048	
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. Simulator Development	MIPR	Lincoln Labs Lexington, MA	12510			3650	Feb 00	3984	Jan 01		20144	
b. DT&OT Test Support	MIPR	Lincoln Labs Lexington, MA	6700								6700	
c. Test Bed Development	MIPR	Lincoln Labs Lexington, MA		2980	Feb 99						2980	
Subtotal Test and Evaluation:			19210	2980		3650		3984			29824	

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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. Tech Support of SMART-T Development	MIPR	Lincoln Labs Lexington, MA	6600			1300					7900	
b. SBIR/STTR						366					366	
Subtotal Management Services:			6600			1666					8266	
Project Total Cost:			201071	23355		13828		17331		43267	298852	

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BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment				PROJECT D456				
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
D456 MILSATCOM System Engineering				4216	6250	8907	10809	11628	10938	9708	Continuing	Continuing
<p>A. <u>Mission Description and Budget Item Justification:</u> Project D456 - MILSATCOM System Engineering: The Army is responsible for developing, procuring, and maintaining the life cycle logistics support for satellite terminals; satellite control subsystems; communications subsystems; and all related equipment required to achieve end-to-end connectivity to satisfy JCS Command, Control, Communications, and Intelligence (C3I) supporting the President; JCS; CINCs; Military Departments; Department of State; and other Departments and Agencies of the government. This project provides centralized funding for advanced systems engineering, analysis, research, development, test, and evaluation of new and emerging technologies that optimize terminal performance and interoperability on the digitized battlefield.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 1437 Conducted various development efforts or analysis to provide enhanced terminal capability • 750 Continued Battlefield Digitization architecture efforts for 4ID • 1036 Advanced SATCOM architecture development (Advanced EHF (AEHF) and Wideband Gap Filler System (WGS))) • 993 AEHF waveform development <p>Total 4216</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 2174 Conduct various development efforts or analysis to provide enhanced terminal capability • 1743 Continue Battlefield Digitization architecture efforts for 4ID and IIICorps • 1200 Advanced SATCOM architecture development and System Engineering Support (AEHF and WGS) • 964 AEHF waveform development • 169 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR) <p>Total 6250</p>												
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FY 2001 Planned Program:

- 3706 Conduct various development efforts or analysis to provide enhanced terminal capability (EHF, SHF and Commercial Bands)
 - 2560 Continue Battlefield Digitization architecture efforts for III Corps
 - 1100 Advanced SATCOM architecture development and System Engineering Support (AEHF and AWB)
 - 941 AEHF waveform development
 - 600 Initial Ka Band (STAR-T)
- Total 8907

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>	<u>To Compl</u>	<u>Total Cost</u>
Other Procurement Army 2 - SSN: K77200	2887	6547	3475	499	2298	599	0	0	13907
Other Procurement Army 2 - SSN: BB8417	6896	498	1489	1486	5019	4848	4842	Cont	Cont
Other Procurement Army 2 - SSN BA9350	25034	13936	38307	76566	65681	56003	55944	Cont	Cont
Other Procurement Army 2 - SSN BC4002	56128	31761	48594	19606	12675	32832	20140	Cont	Cont

C. Acquisition Strategy: This project funds advanced systems engineering, research, development, test and evaluation of new and emerging technologies to optimize terminal performance and communications control. Once the technologies are mature and deemed feasible, funding and management responsibility for implementation of the technology is transitioned to cognizant MILSATCOM programs.

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>
Comm-On-The-Move (COTM) Integration for 4ID	2Q*						
Intersegment Post Launch Verification (Flight 4)		4Q					
Intersegment Post Launch Verification (Flight 5)			4Q				
Intersegment Post Launch Verification (Flight 6)				4Q			
Begin UHF/EHF Terminal Integration with Tactical Internet	1Q*						
Complete UHF/EHF Terminal Integration with Tactical Internet		4Q					
Conduct Advanced EHF and Wideband System		1Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
Complete Advanced EHF and Wideband System							4Q

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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>
Initiate Design of Ka Band into STAR-T			1Q				
Conduct Integration of SATCOM Systems into Digitized Architecture	1Q - 4Q*	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	
*Denotes Milestone Completion							
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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
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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. Terminal Upgrades	Various	Various	174	450	Jan 99	900	Jan 00	3125	Jan 01	Cont	4649	
Subtotal Product Development:			174	450		900		3125			4649	
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. Engineering (In-House)	MIPR	Various	571	1140	Jan 99	1323	Jan 00	2009	Jan 01	Cont	5043	
b. Engineering (Contract)	Various	Various	747	797	Jan 99	1266	Jan 00	1228	Jan 01	Cont	4038	
Subtotal Support Costs:			1318	1937		2589		3237			9081	
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. Test Support	MIPR	Lincoln Labs, Lexington, MA	800	600	Jan 99	650	Jan 00	658	Jan 01	Cont	2708	
b. Test Support	Various	Various	343	336		642		628		Cont	1949	
Subtotal Test and Evaluation:			1143	936		1292		1286			4657	
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. Advanced EHF & Architecture	MIPR	Lincoln Labs Lexington, MA	1200	893	Jan 99	1300	Jan 00	1259	Jan 01	Cont	4652	
b. SBIR/STTR						169					169	
Subtotal Management Services:			1200	893		1469		1259			4821	
Project Total Cost:			3835	4216		6250		8907			23208	

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment				PROJECT D559	
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
D559 Automated Communications Management System (ACMS)	7885	5963	6089	0	0	0	0	0	28848
<p>A. <u>Mission Description and Budget Item Justification:</u> Project D559 - ACMS: ACMS is critical to the dynamic and efficient operation of battlefield command and control networks using Air Force developed MILSTAR satellites and Army developed MILSTAR terminals. ACMS enables Army users to take advantage of advanced features of the MILSTAR system, to include directly tasking the satellite constellation, repointing payload antennas, and rapidly changing network configurations. The ACMS is the joint network planning and control tool for MILSTAR and UFO/E satellite communication. The Army will integrate the ACMS into the WIN SYSCON environment to provide EHF planning and network control capabilities to the tactical users. All Services (USAF, Army, and Navy) are funding for their unique software and hardware requirements.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 6473 Continued development, integration, test and fielding of incremental control capability (includes Interim Control System) • 576 Participated in MILSTAR Intersegment Testing • 836 Participated in Joint Technical Reviews, System Requirement Reviews, Management Reviews, Technical Interchange Meetings, and Technical Demonstrations <p>Total 7885</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 5040 Continue development, integration, test and fielding of incremental control capability (includes Interim Control System) • 463 Support terminal test programs • 300 Participate in Joint Technical Reviews, Management Reviews, Technical Interchange Meetings, and Technical Demonstrations • 160 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR) <p>Total 5963</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 5350 Complete development, integration, test and fielding of incremental control capability • 412 Support terminal test programs • 327 Participate in Joint Technical Reviews, Management Reviews, Technical Interchange Meetings, and Technical Demonstrations <p>Total 6089</p>									
Project D559			Page 16 of 21 Pages				Exhibit R-2A (PE 0303142A)		

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment	PROJECT D559
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B. Other Program Funding Summary: Not applicable

C. Acquisition Strategy: Development efforts for ACMS were initiated in FY 1996 under Projects D384 and D386. Project D559 ACMS Development funding line was created in FY 1998. ACMS is a Joint Service MILSTAR community initiative which is an integral part of the MILSATCOM Architecture. The MILSTAR Joint Program Office (MJPO) is managing the overall development effort. Input and interaction with the terminal offices is required to ensure a comprehensive system solution is achieved. Development work began in FY 1996 and will continue through FY 2001, as ACMS is phased in and tested incrementally.

D. Schedule Profile	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2004	FY 2005
Complete ACMS Build 2 INC 1		4Q						
Complete ACMS Build 2 INC 2			4Q					
Initiate Interim Support of Terminal Deployments	1Q*							
Participate in MST-8000		4Q	1Q					
Complete SYSCON Integration / ACMS Build 2 Capability			4Q					
Fielding of Interim Capability in Progress			3-4Q					

*Denotes Milestone Completion

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment						PROJECT D559		
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. Terminal Control	MIPR	JHU/APL Laurel, MD	1000	1000	Dec 98	750	Nov 99	750	Nov 00	0	3500	
b. ACMS Development	MIPR	NRAD San Diego, CA	2000	0		2000	Jan 00	2000	Jan 01	0	6000	
c. ACMS Development	Various	Ft. Monmouth, NJ	0	800	Jul 99						800	
d. MCPT-I Development and Training	SS / CPAF	CSC/Lincom Eatontown, NJ	2977	3173	Dec 98	1044	Jan 00	663	Jan 01	0	7857	
Subtotal Product Development:			5977	4973		3794		3413			18157	
Remark: ACMS Development (NRAD, San Diego): NRAD manages all contract activity associated with ACMS development. US Army provides funds for Army-unique control requirements; NRAD distributes funds provided over multiple contracts.												
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. Program Management	Various	Various	374	565	Jan 99	454	Jan 00	404	Jan 01	0	1797	
Subtotal Support Costs:			374	565		454		404			1797	
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. Test Support	MIPR	Lincoln Labs Lexington, MA	800	600	Jan 99					0	1400	
b. Test Support	Various	Various	560	847	Jan 99	805	Jan 00	772	Jan 01	0	2984	
c. Test Support	MIPR	APL, Laurel, MD				300	Jan 00	600	Jan 01		900	
Subtotal Test and Evaluation:			1360	1447		1105		1372			5284	
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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment					PROJECT D559		
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. Systems Engineering and Test Support	MIPR	Lincoln Labs Lexington, MA	1200	900	Jan 99	450	Jan 00	900	Jan 01	0	3450	
b. SBIR/STTR						160					160	
Subtotal Management Services:			1200	900		610		900			3610	
Project Total Cost:			8911	7885		5963		6089			28848	

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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
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BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment	PROJECT D561
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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
D561 Military Individual Communicator (MIC)	0	1001	1017	0	0	0	0	0	2018

A. Mission Description and Budget Item Justification: Project D561 – MIC: The Military Individual Communicator (MIC) will satisfy a critical joint warfighter requirement for limited, one-way communications capability in a hand-held configuration. The army anticipates initial market analysis and limited initial investments of RDTE will yield miniaturized technologies that can then be inexpensively procured on a large scale to satisfy joint service requirements.

FY 1999 Accomplishments: Project not funded in FY 1999

FY 2000 Planned Program:

- 428 Conduct market survey to identify/assess industry interest and capability for development/production of MIC
 - 546 Conduct engineering analysis to determine feasibility of achieving miniaturization to hand-held configuration
 - 27 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
- Total 1001

FY 2001 Planned Program:

- 812 Conduct equipment demonstrations for industry participants with existing or emerging MIC capabilities
 - 205 Conclude engineering analysis and feasibility study
- Total 1017

B. Other Program Funding Summary: Not applicable

C. Acquisition Strategy: This project funds advanced systems engineering, research, development, test and evaluation of commercial technologies for the realization of one-way miniaturized communications capability in a hand-held configuration. The initial feasibility analysis will include market survey and industry equipment demonstrations.

D. <u>Schedule Profile</u>	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Initiate Market Survey and Studies		1Q - 4Q					
Test & Evaluation			1Q – 4Q				

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 7 - Operational System Development					PE NUMBER AND TITLE 0303142A Satellite Command (SATCOM) Ground Environment					PROJECT D561		
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. MIC	C / CPFF	TBD	0	0		770	Feb 00	812	Dec 00	Cont	1582	
Subtotal Product Development:						770		812			1582	
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. Systems Engineering	Various	Ft Monmouth, NJ	0	0		81	Dec 99	80	Dec 00	Cont	161	
Subtotal Support Costs:						81		80			161	
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. Test Support	MIPR	Ft Monmouth, NJ	0	0		50	Mar 00	50	Mar 00	Cont	100	
Subtotal Test and Evaluation:						50		50			100	
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
a. Core Support	MIPR	Ft Monmouth, NJ	0	0		73	Feb 00	75	Feb 00	Cont	148	
b. SBIR/STTR						27					27	
Subtotal Management Services:						100		75			175	
Project Total Cost:						1001		1017			2018	