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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1995		
BUDGET ACTIVITY <b>5 - Engineering And Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>						
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	47470	28065	24699	15302	19012	22016	29577	28533	Continuing	Continuing
D113 Joint Tactical Ground Station	21014	8851	0	0	0	0	0	0	0	29865
D909 Tactical Electronic Surveillance System - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This Program Element (PE) supports the engineering development directed at meeting the tactical commanders intelligence mission requirements for contingency force deployment and deep battle surveillance and targeting - as stated in Field Manual 100-5. Specific Signals Intelligence (SIGINT) and multi-spectral developments are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The scope of the program is directed towards advanced techniques and capabilities to exploit National and selected theater capabilities that uniquely meet stated Army tactical intelligence and targeting needs and deficiencies for near-real-time receipt, analysis, and dissemination to the appropriate tactical echelon. Further details may be found in the Tactical Intelligence and Related Activities (TIARA), Congressional Justification Book, Volume II and the TENCAP Master Plan. The projects in this PE support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

**Project D113 Joint Tactical Ground Station (JTAGS):** This project initiates development of two Engineering and Manufacturing Development (EMD) JTAGS units. The project is a follow-on to the Tactical Surveillance Demonstration (TSD) and Tactical Surveillance Demonstration Enhancement (TSDE) programs (Project D909). JTAGS is designed for in-theater receipt, processing and dissemination of warning and alerting data from Defense Support Program (DSP) sensors and follow-on space based sensors of major tactical events such as missile launches. JTAGS supports active defense, attack operations, and passive defense. By being located in-theater, the system improves the warning and alerting response time and eliminates several single-point-failure susceptible communications relay nodes. The warning and cueing information gathered will be disseminated via Tactical Information Broadcast System (TIBS), Tactical Related Application (TRAP) and other existing in-theater communications nets.

**FY 1994 Accomplishments:**

- Completed developmental and phase I operational testing of transportable TSDE unit. (470)
- Prepared for and conducted Milestone (MS) II decision review. (720)
- Developed EMD JTAGS ruggedization specifications. (1331)
- Awarded EMD contract for two JTAGS EMD units. (18493)

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<p><b>FY 1995 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• Develop and deliver two JTAGS EMD units. (6897)</li> <li>• Initiate developmental and operational testing of EMD units. (1081)</li> <li>• Initiate preparation for MS III decision review. (687)</li> <li>• Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (186)</li> </ul> <p><b>FY 1996 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• Project completed in FY 96. Effort moves to Procurement (BZ8410).</li> </ul> <p><b>Project D909 Tactical Exploitation of National Systems (TENCAP) Engineering Development:</b> This project supports the engineering development/enhancement of the Electronic Tactical User Terminal (ETUT), Mobile Integrated Tactical Terminal (MITT) (replaces the Tactical High Mobility Terminal (THMT)), Forward Area Support Terminal (FAST), Electronic Processing Dissemination System (EPDS) and Tactical Exploitation System (TES). The Army's emerging TES will incorporate the standards and protocols dictated by the Common Imagery Ground Surface System (CIGSS) program. TES brings all of the existing and emerging Army TENCAP capabilities (EPDS, MIES, and ETRAC) into an integrated common baseline; downsized, modular and scaleable to meet a wide range of contingency requirements. TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (DARP) (PE 0305154D)). Graphic Situation Display (GSD) is a jointly funded program to develop a means to computer generate, transmit, and display graphical representations of the battle space thereby saving communicating bandwidth, manpower and time. The beta software portion of the GSD effort was funded with FY 93 Military Exploitation of Reconnaissance and Intelligence Technology (MERIT) funds.</p> <p><b>FY 1994 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• Continued software upgrades and enhancements for the refinement of the TENCAP Common Baseline (including work done to modify Synthesized UHF Computer controlled Electronic Sub-System (SUCCESS) Radios to DAMA) to fully exploit National capabilities to meet emerging worldwide contingency scenarios. (14201)</li> <li>• Initiated the engineering development of five additional MITTs to replace the existing THMTs. (6200)</li> <li>• Continued to retrofit of ETUTs with MITT hardware and software (based on an open architecture baseline). (5149)</li> <li>• Continued support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), Army Research Laboratory (ARL) support, U.S. Army Space Program Office (ASPO) support and Contractor System Engineering and Technology Assistance (SETA) support. (906)</li> </ul>		

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<b>EXHIBIT</b> ACTIVITY <b>5 - Engineering And Manufacturing Development</b>	PE NUMBER AND TITLE <b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>	
<p><b>FY 1995 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities to meet emerging worldwide contingency scenarios which includes major upgrade to communications component which is common to all TENCAP systems SUCCESS Radio. (9749)</li> <li>• Continue engineering development of five additional MITTs to replace existing THMT. (1500)</li> <li>• Continue the retrofit of ETUTs with enhanced MITT hardware and software. (1330)</li> <li>• Initiate effort to upgrade ETUT to include EPDS capabilities, which will allow for the defielding of the EPDS systems in FY 7. (4270)</li> <li>• Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support and Contractor SETA support. (1962)</li> <li>• Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (403)</li> </ul> <p><b>FY 1996 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities such as integration of communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational commander with enhanced battlefield intelligence products. (11114)</li> <li>• Complete the retrofit of ETUTs with enhanced MITT hardware and software. (2000)</li> <li>• Complete effort to upgrade ETUT to include EPDS capabilities. (5800)</li> <li>• Complete building/fielding of five additional MITTs. (1000)</li> <li>• Initiate engineering development of the TES. (1614)</li> <li>• Continue support to TENCAP Program management and administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support, SETA support, and U.S. Army Topographic Engineering Center (TEC). (3171)</li> </ul> <p><b>FY 1997 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities such as integration of communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational commander with enhanced battlefield intelligence products. (7008)</li> <li>• Continue engineering development of the TES. (4800)</li> <li>• Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace) and Contractor SETA support. (3494)</li> </ul>		

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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2)</b>		DATE <b>February 1995</b>		
<b>Exhibit</b> FUNCTIONALITY <b>5 - Engineering And Manufacturing Development</b>	PE NUMBER AND TITLE <b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>			
<b>B. Program Change Summary</b>				
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
Previous President's Budget	52279	28475	23664	14291
Appropriated Value	52279	28065	0	0
Adjustments to Appropriated Value	-4809	0	0	0
a. SBIR/STTR decrement (-810)				
b. Reprogrammed out of PE (-3999)				
Current Budget Submit/President's Budget	47470	28065	24699	15302
Change Summary Explanation (by Project):				
<b>Project D909, Tactical Electronics Surveillance System - Engineering Development</b>				
<p><b>Funding:</b> IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PEs SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL CAPABILITIES (TENCAP) PROGRAM. ALL EFFORTS FUNDED UNDER PE 0604740A/PROJECT D662 WERE CONSOLIDATED WITH PE 0604766A/ PROJECT D909 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION, PE 0603730A/PROJECT D560 WAS CONSOLIDATED WITH PE 0603766A/PROJECT D907 IN FY 96 AND BEYOND. These PEs/Projects were consolidated because in FY 95 all funds directly related to the development of MIES and ETRAC and support to JSIPS program that were funded in Project D560 and D662 in FY94 were moved to OSD PE 0305154D, DARP. Even though the funds have been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA, and certain studies) remained in this project and are still required. Therefore the increase to this PE in FY 96 and FY 97 is the result of consolidating the DARO support efforts that were previously funded under project D560 with project.</p>				
<b>Schedule:</b> None				
<b>Technical:</b> None				

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BUDGET ACTIVITY <b>5 - Engineering And Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>					PROJECT <b>D113</b>			
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost		
D113 Joint Tactical Ground Station	21014	8851	0	0	0	0	0	0	0	29865		
<b>C. Other Program Funding Summary</b>												
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To Compl</u>	<u>Total Cost</u>		
Other Procurement Army, OPA-2												
BZ 8410 Joint Tactical Ground Station (JTAGS)	0	0	30914	0	0	0	0	0	0	30914		
<b>D. Schedule Profile</b>												
	1	2	3	4	1	2	3	4	1	2	3	4
Milestone II IPR		X*										
EMD Contract Award			X*									
Technical Review Complete			X*									
Del 1st EMD Prototype				X								
Developmental Test Begin					X							
Del 2nd EMD Prototype					X							
Operational Tests Begin					X							
Milestone III IPR						X						
*Completed												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-					DATE						
BUDGET ACTIVITY					February 1995						
5 - Engineering And Manufacturing Development					0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)						
PROJECT					D113						
<b>A. Project Cost Breakdown</b>											
				<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>				
Prime Contractor				14195	2894	0	0				
Contract Engr Support				3313	2070	0	0				
Program Management Support				1549	1708	0	0				
Government Engineering Support				984	2055	0	0				
Government Furnished Equipment				973	124	0	0				
Total				21014	8851	0	0				
<b>B. Budget Acquisition History and Planning Information</b>											
<b>Performing Organizations</b>											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
<b>Product Development Organizations</b>											
Aerojet (Prime)	C/CPFF	8 Jul 94	16441	16968	0	13934	2894	0	0	0	16828
Aerojet (TSDE)						261	0	0	0	0	261
<b>Support and Management Organizations</b>											
Proj Mgt/Matrix	N/A	N/A	N/A	N/A	0	1743	2475	0	0	0	4218
SETA	C/CPIF	2 Oct 90	N/A	N/A	0	2064	1369	0	0	0	3433
Contract Eng Spt			N/A	N/A	0	1249	701	0	0	0	1950
<b>Test and Evaluation Organizations</b>											
WSMR					0	405	888	0	0	0	1293
OTEA/Other					0	385	400	0	0	0	785

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE					
BUDGET ACTIVITY					February 1995					
5 - Engineering And Manufacturing Development				PE NUMBER AND TITLE						
				0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)						
<b>Government Furnished Property</b>										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
<b>Product Development Property</b>										
Radios, Comms, (Generator, etc.)	Various	2Q94 - 2Q95	4Q94-3Q95	0	973	124	0	0	0	1097
<b>Support and Management Property</b>										
None										
<b>Test and Evaluation Property</b>										
None										
				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development					14195	2894				17089
Subtotal Support and Management					5056	4545				9601
Subtotal Test and Evaluation					790	1288				2078
Subtotal Government Furnished Property					973	124				1097
Total					21014	8851				29865

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BUDGET ACTIVITY <b>5 - Engineering And Manufacturing Development</b>			PE NUMBER AND TITLE <b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>						PROJECT <b>D909</b>	
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D909 Tactical Electronic Surveillance System - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Continuing	Continuing
<b>C. Other Program Funding Summary</b>										
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	To Compl	Total Cost
RDTE, A Budget Activity 4 PE 0603730A Project D560 Tact Surv Sys - Adv Dev	15140	11717	0	0	0	0	0	0	N/A	N/A
PE 0603766A Project D907 TENCAP-Adv Dev	15069	14815	28693	26913	23935	28057	29377	34319	Cont	Cont
RDTE, A Budget Activity 5 PE 0604740A Project D662 Tact Surv Sys - Eng Dev	37534	2093	0	0	0	0	0	0	N/A	N/A
RDTE, D Budget Activity 7 PE 0305154D Project P531 DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement Army, OPA-2 BZ7315 TENCAP	7729	4636	4617	1807	1784	1853	4971	14916	Cont	Cont
BA0329 DARP	1927	2411	0	0	0	0	0	0	Cont	Cont
Procurement, Defense Wide PE 0305154D	0	0	88700	123400	77900	69100	71400	73300	Cont	Cont

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BUDGET ACTIVITY					PE NUMBER AND TITLE											PROJECT	
5 - Engineering And Manufacturing Development					0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)											D909	
<b>D. Schedule Profile</b>																	
						FY 1995				FY 1996				FY 1997			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Completed and Fielded Initial six MITTs		X															
Awarded Contract of five Additional MITTs				X													
Completed Eng Dev and Field FASTs			X														
Initiate upgrade to ETUT with EPDS Functionality						X											
Completed Dev and Fielded five Additional MITTs										X							
Completed Retrofit and Refield ETUTs										X							
Complete and Field DAMA Appliqué into SUCCESS Radios													X				
Initiate Engineering Development of TES										X							
Install GSD in FAST Systems												X					

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RTD&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-		DATE		
BUDGET ACTIVITY <b>5 - Engineering And Manufacturing Development</b>		<b>February 1995</b>		
PE NUMBER AND TITLE <b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>		PROJECT <b>D909</b>		
<b>A. Project Cost Breakdown D909</b>				
	<u>FY 1994</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>
System Development:				
MITT	6200	1500	1000	0
ETUT	5149	5600	7800	0
TES	0	0	1614	4800
Common Baseline (*1)	14201	9749	11114	7008
Subtotal System Development	25550	16849	21528	11808
Program Management:				
FFRDC (*2)	426	995	1323	1326
System Engineering (Contractor) (*2)	480	1370	1848	2168
Subtotal Program Support (*2)	906	2365	3171	3494
<b>Total</b>	<b>26456</b>	<b>19214</b>	<b>24699</b>	<b>15302</b>
(*1) TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the DARP (PE 0305154D).				
(*2) In FY 96 and beyond, the support efforts previously funded under PE 0604740A, Project D662 (which support efforts developed under PE 0305154 (DARP)) are consolidated into this project.				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE February 1995					
BUDGET ACTIVITY				PE NUMBER AND TITLE						PROJECT	
<b>5 - Engineering And Manufacturing Development</b>				<b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>						<b>D909</b>	
<b>B. Budget Acquisition History and Planning Information</b>											
<b>Performing Organizations</b>											
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
<b>Product Development Organizations</b>											
	MIPR	4Q94	N/A	N/A	N/A	6200	1500	1000	0		
	MIPR	2Q94	N/A	N/A	N/A	5149	5600	7800	0		
	MIPR	N/A	N/A	N/A	N/A	12931	9179	11039	6933		
	TBD	TBD	N/A	N/A	0	0	0	1614	4800		
<b>Support and Management Organizations</b>											
SSD/FDEA (FFRDC)	MIPR	1Q EA FY	N/A	N/A	N/A	426	995	1323	1326		
Classified (Sys Eng Cont)	MIPR	1Q EA FY	N/A	N/A	N/A	480	1370	1848	2168		
<b>Test and Evaluation Organizations</b>											
TEXCOM (Cmn Bsln)	MIPR	1Q94	N/A	N/A	N/A	70	70	75	75		

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<b>5 - Engineering And Manufacturing Development</b>				<b>0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)</b>			<b>D909</b>			
<b>Government Furnished Property</b>										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
ROTERMs/ CHARIOTs (Cmn Bsln)	MIPR	3Q94	3Q95	N/A	1200	500	0	0		
<b>Support and Management Property</b>										
<b>Test and Evaluation Property</b>										
				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development				N/A	24280	16279	21453	11733		
Subtotal Support and Management				N/A	906	2365	3171	3494		
Subtotal Test and Evaluation				N/A	70	70	75	75		
Subtotal Government Furnished Property				N/A	1200	500	0	0		
Total Program				N/A	26456	19214	24699	15302		