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

February 2003

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
5 - System Development and Demonstration	**0604716A - TERRAIN INFORMATION - ENG DEV**	**579**

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
579 FIELD ARMY MAP SYS ED	7779	8096	6977	5965	5792	5777	6704	5748	0	59382

A. Mission Description and Budget Item Justification: This Project funds development of the DTSS-L (HMMWV), DTSS-H (5-ton), DTSS-D (COTS, Transportable), DTSS-B (COTS, Garrison) and HVMP. The current terrain analysis, topographic and reproduction support provided by Army Engineer Terrain Teams is a slow, labor intensive process that does not meet the needs of the digital battlefield on which the commander must have the ability to rapidly obtain terrain information and topographic products. The DTSS will provide digital maps and updates to commanders and weapons platforms in support of mission planning (e.g., imagery exploitation, Cover and Concealment, other IPB), rehearsal (e.g., 3D fly through, simulations) and execution (e.g., Common Tactical Picture, route planning). The DTSS automates terrain analysis and visualization, data base development/update/management/distribution, and graphics reproduction. The Combat Terrain Information Systems (CTIS) Modernization Plan emphasizes the development of a combined, integrated, tactically deployable, fully autonomous terrain analysis and graphics reproduction capability. These capabilities are being provided in 5-ton (DTSS-H) and HMMWV (DTSS-L) configurations. Fielding of the DTSS-H was completed in Dec 99. The DTSS-H systems will eventually be replaced by DTSS-Ls as part of a HQDA approved technology refreshment program. The DTSS-L is highly mobile and capable of supporting a full range of military operations, as well as peacetime stability and support operations. Both the DTSS-L and DTSS-H have been Type Classified-Standard. The DTSS-D provides a Commercial Off the Shelf (COTS) configuration that is capable of operating all of the terrain analysis software. The DTSS-D consists of transportable workstations and peripherals that can be set up to augment the tactical configurations. The DTSS-D does not include tactically deployable shelters and vehicles or tactical communications. The DTSS-D has been Type Classified-Standard. The DTSS-B was procured in response to a USAEUR initiative to develop the capability to generate terrain information over sparsely mapped areas to support training, mission rehearsal and contingency operations. The DTSS-B is designed to augment NIMA capabilities at the EAC level by providing quick response, special purpose mapping, terrain analysis and data base generation. The DTSS-B currently includes a Top Secret - SCI component that is capable of handling national technical means information in a secure environment. The DTSS-B has been Type Classified-Standard. The HVMP will provide a tactical capability to rapidly reproduce large volumes of topographic materiel. HVMP will be capable of reproducing information from a variety of digital and hardcopy sources via direct digital interfaces. CTIS systems will be deployed from Brigade through EAC. Additionally, an institutional training classroom environment has been developed and delivered to the National Geospatial/Intelligence School (NGS)(formerly Defense Mapping School). NGS provides critical MOS specific training on the operation and use of CTIS developed systems. Products developed as part of the CTIS RDT&E program (e.g., improved Army Battle Command Systems (ABCS) interoperability, migration to Joint Technical Architecture - Army (JTA-A) and Common Operating Environment (COE), improved data base management and distribution, automated feature extraction, improved tactical decision aid functionality, rapid terrain visualization, battlefield terrain reasoning, improved graphics reproduction) will be incorporated into all of the DTSS hardware and software architectures. Additionally, the Topographic Support System (TSS) is outdated and must be modernized to keep pace with Army digitization. The modernization initiatives associated with the TSS include updating the Operations, Distribution and Photomechanical Sections with computer workstations, copiers and printers. The Survey section will be downsized to a HMMWV configuration and the Drafting section will be updated to include digital cartographic equipment. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP).

Accomplishments/Planned Program	FY 2002	FY 2003	FY 2004	FY 2005
Continue P3I development for DTSS - TDA enhancements (integrated weather and mobility, terrain reasoning), terrain data model development, map server/data dissemination improvements	6179	0	0	0
Continue P3I development for DTSS - TDA enhancements (route/region LOS, terrain reasoning, mobility enhancements), map server/data dissemination improvements, semi-automated feature extraction, metadata standardization	0	7406	0	0
Continue System Design and Demonstration (SDD) of HVMP	1600	0	0	0
ABCS Systems Engineering & Integration (SE&I)	0	140	0	0
Complete SDD for HVMP	0	250	0	0
Initiate upgrade analysis for DTSS-L	0	300	0	0
Continue P3I development for DTSS - Enhanced 3-D terrain visualization, semi-automated feature extraction, data conflation, TDA enhancements (hydrology, Battlefield Terrain Reasoning and Assessment (BTRA) enhancements) improved data base design (seamless enterprise database)	0	0	5477	0
Initiate development of DTSS-Survey (S)	0	0	1500	0
Continue P3I development for DTSS - Semi-automated feature extraction, TDA/data quality assessments, web-based applications, TDA enhancements (urban/MOUT TDAs, new Mobility Models, temporal information)	0	0	0	3965
Continue development of DTSS-Survey	0	0	0	2000
Totals	7779	8096	6977	5965

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B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	8766	8232	7094	6066
Current Budget (FY 2004/2005 PB)	7779	8096	6977	5965
Total Adjustments	-987	-136	-117	-101
Congressional program reductions				
Congressional rescissions		-90		
Congressional increases				
Reprogrammings	-987	-46		
SBIR/STTR Transfer				
Adjustments to Budget Years			-117	-101

FY02 - (-987K) below threshold reprogamming to support higher Army priorities.

C. Other Program Funding Summary	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA - KA2550 - DTSS	19889	13708	13003	9442	6562	21997	21467	19997	Continue	Continue

D. Acquisition Strategy: The Acquisition Strategy for the DTSS - Light EMD phase was to utilize Army standard equipment and the Common Hardware/Software (CHS) computer workstations in conjunction with non-development item (NDI) components to develop an integrated baseline hardware configuration. The previous Combat Terrain Information Systems (CTIS) System Engineering and Integration (SE&I) contractor (Lockheed Martin Corp) executed the EMD phase, performing system integration, and provided units for formal test and evaluation. Milestone III for the DTSS-L was successfully completed in Jan 98. Production of the DTSS-L commenced in February 1999. Previously existing DTSS units have been upgraded to a 5-ton ISO 20-foot shelter configuration (DTSS-H). Funding to support technology refreshment of the DTSS-H (DTSS-H will be replaced by DTSS-L in FY02/03 timeframe) and DTSS-L has been programmed on a 5-yr. cycle. Acquisition of the DTSS-D and DTSS-B was completed in FY 1995 and FY 1996, respectively. Based upon CINC, TRADOC and PEO C3S User Evaluation approvals, the DTSS-D was Type Classified - Standard and added to the gaining unit's Table of Organization and Equipment. Funding to support a 5-yr. technology refreshment program for the DTSS-D commenced in FY 2000 and for the DTSS-B commenced in FY 2002. The DTSS-B has also been Type Classified-Standard. The acquisition of the DTSS-D and DTSS-B relied upon existing contracts and commercial-off-the-shelf to the fullest extent possible. The Project Office will continue with this strategy for all technology refreshment programs. The Acquisition Strategy for the HVMP is to utilize COTS and NDI components integrated with Army standard hardware (e.g., trucks, shelters, power equipment) to develop an integrated baseline. The pre-planned product improvement program (P3I) will be executed with the current SE&I contractor (Northrup Grumman, Inc.). The contracting strategy for the DTSS-Light program was to execute the EMD phase through the previous SE&I contractor, Lockheed Martin Corporation. A Competitive Cost Plus Fixed Fee (CPFF) contract was awarded for both the previous and existing CTIS SE&I contracts. A competitively awarded, Firm Fixed Price (FFP) contract was awarded to Sechan Electronics, Inc. for the Full Rate Production of the DTSS-Light. Production of the DTSS-H was accomplished through FFP production contracts with Lockheed Martin Corporation and SFA Inc. The contracting strategy for the HVMP is to execute the System Design and Demonstration (SDD) phase through the current SE&I contractor. A competitively awarded FFP contract is anticipated for the Full Rate Production of the HVMP. The computer workstations for CTIS programs are being procured through the project manager for CHS.

ARMY RDT&E COST ANALYSIS(R-3)

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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 . Primary Hardware Development	C/CPFF C/CPFF	Loral Corp, OH Lockheed Martin, PA	23280	0		0		0		0	23280	23280
b . Primary Hardware Development	C/CPFF	Northrup Grumman, Chantilly, VA	3295	700	1Q	2383	1-2Q	1899	1-2Q	Continue	Continue	Continue
c . ABCS SE&I	MIPR	PEO C3S, Ft. Monmouth, NJ	150	140	1Q	0		0		0	290	290
Subtotal:			26725	840		2383		1899		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 . Software Development	C/CPFF	Loral Corp, OH Lockheed Martin, PA	34919	0		0		0		0	34919	34919
b . Software Development	C/CPFF	Northrup Grumman, Chantilly, VA	14070	4367		0		0		0	18437	18461
c . Software Development	C/CPFF	TBS	0	1500	3Q	3200	1-2Q	2591	1-2Q	Continue	Continue	Continue

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BUDGET ACTIVITY
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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
Subtotal:			48989	5867		3200		2591		Continue	Continue	Continue

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 . Acceptance Testing	MIPR	TECOM	755	0		0		100	2Q	Continue	Continue	Continue
Subtotal:			755	0		0		100		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
a . Contractor Eng Support	MIPR	MITRE, McLean, VA	5217	0	1Q	0		0		Continue	Continue	Continue
b . Government Eng Support	MIPR	Various	16728	100	1Q	100	1Q	100	1Q	Continue	Continue	Continue
c . Program Mgmt Support*	Delivery Orders	Various	2855	171	1Q	175	1Q	175	1Q	Continue	Continue	Continue
d . Program Mgmt Personnel	MIPR	TEC, Ft. Belvoir, VA	11780	1118	1-4Q	1119	1-4Q	1100	1-4Q	Continue	Continue	Continue

ARMY RDT&E COST ANALYSIS(R-3)

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IV. Management Services (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
Subtotal:			36580	1389		1394		1375		Continue	Continue	Continue

Remarks: *This category primarily covers Office Automation

Project Total Cost:			113049	8096		6977		5965		Continue	Continue	Continue

Schedule Profile Detail (R-4a Exhibit)

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Schedule Detail	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Award DTSS-L Production Contract/Options	2Q	1Q						
DTSS-L Production	1-4Q	1-4Q						
Continue DTSS P3I Program	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Field DTSS-L	1-4Q	1-4Q	1-4Q					
Technology Refreshment and Fielding of DTSS-D				3-4Q	1-2Q			
Field DTSS Build 7.0 Software	2Q							
Technology Refreshment and Fielding of DTSS-B	1-3Q					1-3Q		
Continue EMD for HVMP (initiated in FY01)	1-4Q	1Q						
Milestone III for HVMP		2Q						
Production of HVMP		2-4Q	1-4Q					
Field DTSS Build 8.0 Software		2Q						
Field DTSS Build X.X Software			2Q	2Q	2Q	2Q	2Q	2Q
Technology Refreshment of DTSS-L			2-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Conduct Technology Refreshment of Institutional Training Classroom	1-2Q					1-3Q		
Technology Refreshment of HVMP							1-4Q	1-4Q