

## UNCLASSIFIED

## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0305208F Distributed Common Ground Systems

PROJECT

4826

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
4826 Common Imagery Ground / Surface Systems	19,903	30,674	27,107	26,198	52,282	180,128	150,063	174,518	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: AF DCGS received significant funding increases in FY 06 - FY 09 to support AF DCGS modernization. These funds will transform AF DCGS from its existing architecture based on proprietary and legacy systems to an open architecture integrated into the Network Centric Warfare environment.

(U) A. Mission Description

The DoD Distributed Common Ground/Surface System (DCGS) Program is a cooperative effort between the services and agencies to provide ground/service systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance sensors/platforms and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable (using the Common Data Link) with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer, and Intelligence (C4I) environment. The program integrates architectures and standards from Common Imagery Ground/Surface Systems (CIGSS) for Imagery Intelligence (IMINT), Joint Interoperable Operator Network (JION) for Signals Intelligence (SIGINT), and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT.

AF DCGS provides ground/surface systems capable of tasking intelligence sensors, and receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data streams between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has four core locations: two CONUS based and two OCONUS. Several other DCGS systems are distributed among Air Force operational units at numbered Air Force locations, to support the Joint Task Force commander and the Air Operations Center (AOC). The CONUS-based systems are deployable and capable of reachback operations via satellite.

AF DCGS provides significant support to Time Critical Targeting (TCT) operations. This support will be enhanced with the planned integration of software tools and closer integration to AOC tools. ISR management capability will provide the Joint Forces Air Component Commander (JFACC) the capability to:

- 1) dynamically visualize and command ISR assets and the information in the AOC
- 2) quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TCT process.

The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within CIGSS architecture. The function of

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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within CIGSS. Baseline capability includes F/A-18 and U-2 sensors. Efforts are underway to augment the CIP baseline to process data from upgraded/new sensors.</p> <p>Also included in this BPAC is a mobile CIGSS/DCGS testbed. The testbed is being used by service and agency program offices to test interfaces with new sensors, applications, and other modifications. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment.</p> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$1,553 Continued evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS Infrastructure Integrated Process Team (IPT) for ASD/C3I</p> <p>(U) \$1,227 Continued CIGSS/DCGS testbed development.</p> <p>(U) \$5,513 Continued development of improved command and control of ISR platforms/sensors to enhance DCGS support to the commander, improve integration with the AOC, and increase Time Critical Targeting (TCT) effectiveness. Developed additional spirals of ISR Manager.</p> <p>(U) \$4,955 Developed and integrated Network Centric Collaborative Targeting (NCCT) interfaces and functionality within DCGS. Supported ongoing modeling and exercise activities to assist processing and engagement of TCTs.</p> <p>(U) \$6,655 Continued evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continued investigation of and implementation of advanced processing tools.</p> <p>(U) \$19,903 Total</p> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$1,560 Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS Infrastructure Integrated Process Team (IPT) for ASD/C3I</p> <p>(U) \$1,314 Continue CIGSS/DCGS testbed development.</p> <p>(U) \$5,029 Continue development of improved command and control and visualization of ISR platforms/sensors (ISR management capability) to enhance DCGS support to the commander, improve integration with the AOC, and increase Time Critical Targeting (TCT) effectiveness. Continue development of NCCT and DCGS integration.</p> <p>(U) \$12,371 Continue evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continue investigation of and implementation of advanced processing tools.</p>		
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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <b><u>FY 2003 (\$ in Thousands) Continued</u></b></p> <p>(U) \$10,400 Continue the Adaptive Link Formatter (ALF) and commercial imagery integration started under Cost of War (COW) effort.</p> <p>(U) \$30,674 Total</p> <p>(U) <b><u>FY 2004 (\$ in Thousands)</u></b></p> <p>(U) \$0 Accomplishments/Planned Program</p> <p>(U) \$1,646 Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS Infrastructure Integrated Process Team (IPT) for ASD/C3I</p> <p>(U) \$1,351 Continue CIGSS/DCGS testbed development.</p> <p>(U) \$5,676 Continue ISR management capability development efforts further integrating this functionality into DCGS. Continue development of improved command and control of ISR platforms/sensors to enhance DCGS support to the commander, improve integration with the AOC, and to increase Time Critical Targeting (TCT) effectiveness. Continue development of NCCT and DCGS integration.</p> <p>(U) \$7,880 Continue evolving CIP and its associated architecture to keep pace with growing sensor baseline: new and upgraded sensors. Continue investigation of and implementation of advanced processing tools.</p> <p>(U) \$4,527 Integrate of MASINT exploitation capabilities into DCGS as an extension of the Cost of War (COW) effort.</p> <p>(U) \$3,527 Develop the geospatial effort in support of AF's and NIMA's transition to digital mapping technology and products as an extension of the COW effort.</p> <p>(U) \$2,500 Continue commercial imagery integration started under COW effort.</p> <p>(U) \$27,107 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>Program is in Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 15%; text-align: center;"><u>FY 2002</u></th> <th style="width: 15%; text-align: center;"><u>FY 2003</u></th> <th style="width: 15%; text-align: center;"><u>FY 2004</u></th> <th style="width: 15%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">16,280</td> <td style="text-align: center;">20,708</td> <td style="text-align: center;">17,052</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">16,429</td> <td style="text-align: center;">20,708</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: center;">-149</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;">b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>	(U) Previous President's Budget	16,280	20,708	17,052		(U) Appropriated Value	16,429	20,708			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-149				b. Small Business Innovative Research				
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(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>						
c. Omnibus or Other Above Threshold Reprogram													
d. Below Threshold Reprogram				3,720									
e. Rescissions				-97	-434								
(U) Adjustments to Budget Years Since FY 2003 PBR					10,400	10,055							
(U) Current Budget Submit/FY 2004 PBR				19,903	30,674	27,107	TBD						
(U) <b><u>Significant Program Changes:</u></b>													
- In FY03, AF DCGS received \$10.4M from the Cost of War Transfer Account for the development of increased/improved dissemination capabilities (\$8M) and commercial imagery integration (\$2.4M).													
- Adjustments in FY02:													
Added:													
- Time Critical Targeting funding (\$1.25M)													
- DCGS/Network Centric Collaborative Targeting and modelling and exercise support/integration (\$5.0M)													
Removed:													
- Eagle Vision funding transferred to PE 27277F (\$1.95M)													
- Joint Services Imagery Processing System funding (\$3.0M)													
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
				<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Other APPN													
Procurement line is classified.													
(U) <b><u>E. Acquisition Strategy</u></b>													
DCGS uses a spiral development program to field and upgrade the common ground station architecture. Systems and technology will be contracted for under a competitive Request for Proposal (RFP) process where possible.													
(U) <b><u>F. Schedule Profile</u></b>													
				<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>							

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(U) F. Schedule Profile Continued

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Integrate/Test changes in testbed		*				X			X	X		
(U) Assess/integrate national and tactical interface changes to DCGS							X	X				
(U) Integrate new sensors and sensor modifications into CIP	*				*				X			
(U) DCGS technology/software upgrade										X		
(U) DCGS commonality and Interoperability standards	*										X	
(U) NATO Interoperability Standards	*					X						
(U) DCGS Infrastructure IPT		*	*	*		*	X	X		X	X	X
(U) Develop improved C2 of ISR platforms/sensors		*				X						

\*- Denotes Completed Event / X-Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0305208F Distributed Common Ground Systems				4826	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
						<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>
(U)	Hardware/Software Development					10,592		10,887		5,676
(U)	System Engineering					6,202		3,234		8,880
(U)	System Integration					2,109		15,553		11,650
(U)	Program Management					1,000		1,000		901
(U)	Total					19,903		30,674		27,107
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon, Garland, TX	Multiple	2Q99	N/A	N/A	1,318	0	0		0	1,318
Northrop Grumman, Baltimore, MD	C, CPFF	2Q99	N/A	N/A	4,896	6,655	12,371	7,880	Continuing	TBD
Lockheed Martin, San Jose, CA	Multiple	2Q99	N/A	N/A	300	0	0	0	0	300
TBD for DCGS Upgrades and Migration		TBD	N/A	N/A	0	10,748	15,343	16,217	Continuing	TBD
Matra, Velizy, FR	Multiple	1Q00	N/A	N/A	1,384	0	0	0	0	1,384
Matra	SS, TBD	3Q00	N/A	N/A	11,886	0	0	0	0	11,886
Other Non-Prime Gov't Contracts	TBD	TBD	N/A	N/A	1,122	0	0	0	0	1,122
MITRE	SS,CPAF	2Q99	N/A	N/A	456	0	300	0	0	756
SAIC	SS, IDIQ	2Q99	N/A	N/A	535	1,000	700	1,000	0	3,235
Veridian	C,CPAF	4Q01	N/A	N/A	0	500	700	750	Continuing	TBD
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(U) <u>Performing Organizations Continued:</u>										
<u>Support and Management Organizations</u>										
Other Non-Prime Gov't	TBD	TBD	N/A	N/A	0	1,000	1,260	1,260	Continuing	TBD
Contracts										
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					21,897	18,903	29,414	25,847	TBD	TBD
Subtotal Support and Management					0	1,000	1,260	1,260	TBD	TBD
Subtotal Test and Evaluation										
Total Project					21,897	19,903	30,674	27,107	TBD	TBD

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