

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

DATE

February 2000

BUDGET ACTIVITY

PE NUMBER AND TITLE

07 - Operational System Development

0305208F Distributed Common Ground Systems

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
Total Program Element (PE) Cost	20,602	24,205	21,330	15,146	21,009	16,280	14,939	Continuing	TBD
674821 Distributed Common Ground System Interoperability	2,242	1,592	1,593	1,609	1,658	1,695	1,732	Continuing	TBD
674826 Common Imagery Ground / Surface Systems	18,360	22,613	19,737	13,537	19,351	14,585	13,207	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Distributed Common Ground System (DCGS) Program is a cooperative effort between the services and agencies to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance 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 Signal Intelligence (SIGINT); and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT.

(U) B. Budget Activity Justification

Program is in Budget Activity 7 because it provides for development of technologies and capabilities in support of operational system development.

(U) C. Program Change Summary (\$ in Thousands)

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2000 PBR)	20,906	12,820	14,018	TBD
(U) Appropriated Value	21,159	24,820		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-253			
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram		-133		
d. Below Threshold Reprogram	-189			
e. Rescissions	-115	-482		

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(U)	<u>C. Program Change Summary (\$ in Thousands) Continued</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
	f. Other				TBD
(U)	Adjustments to Budget Years Since FY 2000 PBR			7,312	
(U)	Current Budget Submit/FY 2001 PBR	20,602	24,205	21,330	TBD
(U)	<u>Significant Program Changes:</u>				
	- Congress added \$12M in FY00 for Eagle Vision				
	- USAF added \$21.5M in the FY01-05 budget for Common Imagery Processor				

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems				PROJECT 674821	
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
674821 Distributed Common Ground System Interoperability	2,242	1,592	1,593	1,609	1,658	1,695	1,732	Continuing	TBD
<p>(U) <u>A. Mission Description</u> The Distributed Common Ground System (DCGS) Program is a cooperative effort between the services and agencies to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance 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 C4I environment. The interoperability program integrates architectures and standards from Common Imagery Ground/Surface Systems (CIGSS) for IMINT; Joint Interoperable Operator Network (JION) for SIGINT; and Joint Airborne MASINT Architecture (JAMA) for MASINT.</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u> (U) \$1,654 Continued evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines. (U) \$338 Continued engineering development of NATO interoperability standards. (U) \$250 Managed DCGS Infrastructure Integrated Product Team (IPT) for ASD/C3I. (U) \$2,242 Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u> (U) \$1,092 Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines. (U) \$250 Continue engineering development of NATO interoperability standards. (U) \$250 Manage DCGS Infrastructure Integrated Product Team (IPT) for ASD/C3I. (U) \$1,592 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$1,093 Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines. (U) \$250 Continue engineering development of NATO interoperability standards. (U) \$250 Manage DCGS Infrastructure IPT for ASD/C3I. (U) \$1,593 Total</p> <p>(U) <u>B. Project Change Summary</u></p>									
Project 674821			Page 3 of 11 Pages				Exhibit R-2A (PE 0305208F)		

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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<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>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>Complete</u>	

(U) Other APPN
Procurement line is classified. See PEM for details.

(U) **D. Acquisition Strategy**
DCGS interoperability program will use FFRDC, GSA contracts, and competitive processes where possible.

(U) **E. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) DCGS commonality and Interoperability standards		*										
(U) NATO Interoperability Standards		*										
(U) DCGS Infrastructure IPT		*										
(U) DCGS commonality and Interoperability standards												X
(U) NATO Interoperability Standards												X
(U) DCGS Infrastructure IPT												X
(U) DCGS commonality and Interoperability standards												X
(U) NATO Interoperability Standards												X
(U) DCGS Infrastructure IPT												X

*- Denotes Completed Event
X-Denotes planned event

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2000	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems				PROJECT 674826	
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
674826 Common Imagery Ground / Surface Systems	18,360	22,613	19,737	13,537	19,351	14,585	13,207	Continuing	TBD
<p>(U) <u>A. Mission Description</u></p> <p>DCGS provides systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms, and commercial sources. DCGS is a system of systems that does not need to be collocated but must be interconnected by a robust communications structure to provide data streams between intelligence collector, exploiters, producers, disseminators, and users. DCGS has four core locations: two CONUS based and two OCONUS. Other DCGS systems are distributed among Air Force operational units at numbered Air Force level, to support the Joint Task Force commander and the Air Operations Center. The CONUS based systems are deployable and capable of reachback operations via satellite. Eagle Vision is a deployable ground station for programming and collecting panchromatic, multispectral, and synthetic aperture radar broad-area imagery from commercial earth remote sensing satellites and processing/merging it with national imagery for mission planning, topographic analysis, and intelligence-gathering purposes. The AF has an operational Eagle Vision system at Ramstein AFB, GE. The Reno ANGB, NV National Eagle (commercial imagery post processing capability) is being upgraded with direct downlink capability along with direct downlink being procured for South Carolina ANG. Reno ANGB, NV also has a processing and exploitation system (networked with other DCGS sites) that supports the Theater Airborne Reconnaissance System (TARS) in addition to other DCGS missions.</p> <p>A mobile CIGSS/DCGS testbed is used by Program Offices to test interfaces with new sensors, applications, and other modifications, and to support the integration and test of DCGS components prior to introduction into the operational environment.</p> <p>The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within CIGSS architecture. The function of 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 and to investigate CIP as a multi-intelligence processor.</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u></p> <p>(U) \$6,470 Continued CIGSS/DCGS sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces. Completes JSIPS Block III upgrade (national DTS).</p> <p>(U) \$2,500 Continued CIGSS/DCGS testbed development.</p> <p>(U) \$2,572 Continued system engineering and technical support.</p> <p>(U) \$1,450 Continued USMC Tactical Exploitation Group (TEG) development efforts.</p>									
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0305208F Distributed Common Ground Systems	674826
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 1999 (\$ in Thousands) Continued</u>		
(U) \$2,000	Continued sustaining engineering for commercial satellite imagery. Begin integration of 5 meter and prepare architecture for 1 meter commercial satellites.	
(U) \$3,368	Continued evolving CIP to keep pace with new sensors and projected sensor modification programs.	
(U) \$18,360	Total	
(U) <u>FY 2000 (\$ in Thousands)</u>		
(U) \$2,663	Continue CIGSS/DCGS sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national and tactical interfaces.	
(U) \$900	Continue CIGSS/DCGS testbed development.	
(U) \$450	Continue system engineering and technical support.	
(U) \$1,950	Continue to provide sustaining engineering for commercial satellite imagery to ensure operational usability. Continue integration of 5 m and architecture preparation for 1 meter commercial satellites.	
(U) \$4,650	Continue evolving CIP to keep pace with new sensors and projected sensor modification programs. Investigate multi-int processing.	
(U) \$12,000	Upgrade and procure Eagle Vision commercial imagery direct downlink capabilities. Integrate with National Eagle. (Congressional add to FY00)	
(U) \$22,613	Total	
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$2,440	Continue CIGSS/DCGS sustaining engineering to implement software upgrades and enhancements to maintain compatibility with changing national/tactical interfaces and to increase interoperability with expanding ISR platform/sensor baseline.	
(U) \$1,500	Continue CIGSS/DCGS testbed development.	
(U) \$360	Continue system engineering and technical support.	
(U) \$1,950	Continue to provide sustaining engineering for commercial satellite imagery to ensure operational usability. Continue integration of new/upgraded commercial imaging satellites.	
(U) \$13,487	Continue evolving CIP to keep pace with growing sensor baseline: new and upgraded sensors. Implement initial multi-int processing upgrades.	
(U) \$19,737	Total	
(U) <u>B. Project Change Summary</u>		

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

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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0305208F Distributed Common Ground Systems	PROJECT 674826
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(U) C. Other Program Funding Summary (\$ in Thousands)

	<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>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>Complete</u>	
(U) Other APPN Procurement line is classified. See PEM for details.									TBD

(U) D. Acquisition Strategy

DCGS will use 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) E. Schedule Profile

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Assess national and tactical interface changes to DCGS				*								
(U) Integrate new sensors and sensor modifications into CIP		*										
(U) Integrate/Test changes in testbed		*										
(U) Complete JSIPS Block III Upgrade						X						
(U) Integrate national and tactical interface changes to DCGS							X					
(U) Integrate new sensors and sensor modifications into CIP					*							
(U) Integrate/Test changes in testbed						X						
(U) Update commercial imagery interface					*							
(U) Assess/integrate national and tactical interface changes to DCGS									X			
(U) Integrate new sensors and sensor modifications into CIP									X			
(U) Integrate/Test changes in testbed										X		
(U) Update commercial imagery interface									X			
(U) Release DCGS Spiral 00B RFP						X						
(U) Award DCGS Spiral 00B contracts							X					
(U) Field DCGS Spiral 00B upgrades									X			
(U) Release DCGS Spiral 01A RFP								X				
(U) Award DCGS Spiral 01A contracts									X			
(U) Eagle Vision Direct Downlink Award (NV & SC ANG)							X					
(U) Eagle Vision Direct Downlink Delivery (NV ANG)												X

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(U) E. Schedule Profile Continued

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4

*- Denotes Completed Event / X-Denotes planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
07 - Operational System Development				0305208F Distributed Common Ground Systems				674826		
(U) A. Project Cost Breakdown (\$ in Thousands)										
						<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>		
(U)	Hardware/Software Development					4,343	1,387	8,515		
(U)	System Engineering					8,367	5,969	7,322		
(U)	System Integration					2,250	13,657	1,800		
(U)	Ancillary Hardware Development					2,000	600	1,100		
(U)	Program Management					1,400	1,000	1,000		
(U)	Total					18,360	22,613	19,737		
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<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 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Raytheon, Garland, TX	Multiple	2Q99	N/A	N/A	0	1,665	500	300	Continuing	TBD
Northrop Grumman, Baltimore, MD	C, CPFF	2Q99	N/A	N/A	0	3,765	4,896	13,487	Continuing	TBD
Lockheed Martin, San Jose, CA	Multiple	2Q99	N/A	N/A	0	164	300	300	Continuing	TBD
TBD for DCGS Upgrades and Migration		TBD	N/A	N/A	0	0	1,069	1,600	Continuing	TBD
Matra, Velizy, FR	Multiple	1Q00	N/A	N/A	0	1,674	1,384	1,384	Continuing	TBD
Matra	SS, TBD	3Q00	N/A	N/A	0	0	11,886	0	Continuing	TBD
Other Non-Prime Gov't Contracts	TBD	TBD	N/A	N/A	0	4,995	1,122	0	Continuing	TBD
MITRE	SS, IDIQ	2Q99	N/A	N/A	0	2,572	456	566	Continuing	TBD
SAIC	SS, IDIQ	2Q99	N/A	N/A	0	2,125	0	1,100	Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2000	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0305208F Distributed Common Ground Systems					674826	
(U) Performing Organizations Continued:											
<u>Support and Management Organizations</u>											
Other Non-Prime Gov't	TBD	TBD	N/A	N/A	0	1,400	1,000	1,000	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>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>	
<u>Subtotals</u>											
Subtotal Product Development					0	16,960	21,613	18,737	TBD	TBD	
Subtotal Support and Management					0	1,400	1,000	1,000	TBD	TBD	
Subtotal Test and Evaluation											
Total Project					0	18,360	22,613	19,737	TBD	TBD	