

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems (JMIP)

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	36995	53911	91587	118891	82182	74251	17614	10168	0	529111
956 DISTRIBUTED COMMON GROUND SYSTEM (DCGS) (JMIP)	13515	9644	9901	10625	11204	11593	2052	2006	0	115345
D06 DCGS-A FUSION INTEGRATION (JMIP)	1310	8966	17201	24582	24726	22969	4410	1088	0	105252
D07 DCGS-A COMMON MODULES (JMIP)	21147	27786	56803	75485	34649	28081	6490	4443	0	254884
D08 DCGS-A SENSOR INTEGRATION (JMIP)	1023	6877	7037	7539	10942	10950	4008	1979	0	50355
D15 MUSE & TES TADSS (IARA)	0	638	645	660	661	658	654	652	0	3275

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms defined as Future Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support) to See First, Understand First, Act First and Finish Decisively. The core functions of DCGS-A are: receipt and processing of space, airborne, ground and maritime ISR sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. DCGS-A draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

Project 956 provides the DCGS-A enterprise system level design, net-centric architecture and infrastructure, to include integration of the U.S. Air Force developed DCGS Integrated Backbone (DIB). Project D06 provides single source sensor fusion, migration of Current Force all-source production capability and automated fusion. Project D07 is the primary System Development and Demonstration (SDD) project, providing design, development, integration and test of the DCGS-A system of systems at all echelons. D07 also provides a common set of ISR analysis tools and a Federated System Integration Lab (SIL). D08 provides sensor integration to include sensor control, tasking and interoperability.

DCGS-A includes hardware for multiple configurations (Fixed, Mobile, and Embedded) and common software that is interoperable with sensors, other Battlefield Operating Systems (BOS), and the DoD Distributed Common Ground/Surface System (DCG/SS) Family of Systems (FoS). The DCGS-A hardware and software are scaleable and tailored by echelon and to the requirements of each mission, task, and purpose. Within the Unit of Action (UA), DCGS-A provides the ISR capability to the Brigade Intelligence and Communications Company (BICC) as well as an embedded software application on the Future

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Combat System (FCS) FoS and other select platforms. At the Unit of Employment (UE) and above, DCGS-A is composed of hardware and software in Mobile and Fixed site configurations. As a system of systems, DCGS-A will consolidate and replace the capabilities found in the following Current Force systems: All Source Analysis System (ASAS), CI/HUMINT Single Source Workstation, Tactical Exploitation System (TES), Guardrail Information Node (GRIFN), Guardrail Common Sensor (GRCS) Intelligence Processing Facility (IPF), Prophet Control, and Common Ground Station (CGS). DCGS-A will also contain Digital Topographic Support System (DTSS) and Integrated Meteorological System (IMETS) like capabilities, sensor control and processing capabilities of select DCGS baseline and Army organic UAVs and Enhanced Trackwolf processing capabilities. DCGS-A will migrate these capabilities into an integrated system of systems that is modular and scaleable, while reducing overall footprint. It is a key component of Transformation and a top Army priority.

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	43254	87329	111247
Current Budget (FY 2006/2007 PB)	53911	91587	118891
Total Adjustments	10657	4258	7644
Net of Program/Database Changes			
Congressional Program Reductions	-993		
Congressional Rescissions			
Congressional Increases	11650		
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		4258	7644

FY2006/FY2007 adjustments to Budget Years were funds realigned from the IMETS and DTSS program for execution within the DCGS-A program.

FY2005 Congressional Increases:

\$1.4M approved out of requested \$11.5M for ASAS Lite to support joint requirements, higher echelon interoperability and additional data feeds to

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provide advanced predictive fusion in support of DCGS-A. (Project D□6 - Austin Information Systems)

+6.□5M for Intelligence Data Exchange for Execution and Planning: I-DEEP will allow planners and operators to share intelligence data across systems and echelons by facilitating quick and intuitive access to large quantities of intelligence for time critical planning, situational awareness, force protection, and homeland defense. (Project 956 - Battle Lab)

+1.7M for Joint Visualization System (JVS): (JVS) enables operators/analysts to access needed information from large quantities of distributed, static, and dynamic intelligence by employing a service based architecture (SBA) solution set. JVS integrates commercialized joint mapping tool kit (C/JMTK) technology with the prototype DITSCAP and common operating environment (COE)-compliant Distributed Data Visualization and System (DDVM) capability developed at the Fort Huachuca Battle Lab. (Project 956 - Battle Lab)

\$2.5M for Automatic Target Cueing System: Enables Image processing, Multisource analysis, and Geospatial Information System (IMaG) integrated into one system. IMaG is a breakthrough image programming language environment focused on target/feature detection, extraction, and cueing for recognition and geolocating for broad area search for time sensitive targets with appropriate sensors/sources. Using plain English, IMaG captures, composes, compiles, tests, modifies, preserves, and reuses the knowledge and experience of the experts on the fly. This rule set can then be applied to new imagery of a large geographic region of the same sensor and resolution, and similar climate and environment, independently or in support of a less experienced image analyst (IA). (Project D□8 - Susquehanna Resources and Environment, Inc.)

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
956 DISTRIBUTED COMMON GROUND SYSTEM (DCGS) (JMIP)	13515	9644	9901	10625	11204	11593	2052	2006	0	115345

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for Army airborne and ground sensor platforms defined as Future Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: receipt and processing of space, airborne, ground and maritime ISR sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize, analyze and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project establishes the DCGS-A Federated Network Centric Enterprise, facilitating system integration and network-enabled capability of existing and future intelligence, surveillance and reconnaissance (ISR) ground stations, eventually consolidating these capabilities into a single system of systems. An enterprise level approach based on a Service Oriented Architecture (SOA) will provide Commanders' and Staffs' access to various ISR ground station information from any ground station, and data exchange between Army ISR ground stations for improved intelligence sharing and understanding. DCGS-A will achieve joint, allied and coalition interoperability through implementation of the 102 DCGS Integration Backbone (DIB) to access other Services data and information that is critical to the Land Component Commander.

FY06/07 funds design, development and test of the DCGS-A enterprise level architecture.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Asymmetric Warfare Intelligence Analysis Advanced Tool Set (AW-IAATS)	1500	0	0	0
Distributed Data Visualization and Management	2800	0	0	0
National Defense Imagery Processing (NDIP) Program	1200	0	0	0

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Joint interoperability test and evaluation.	0	1099	1200	1500
Design and development of DCGS-A enterprise level net-centric architecture in support of ACS and other Future Force systems.	0	8545	8701	9125
SAIP prototype single vehicle development, fielding, integration, and evaluation. Starting in FY03 shared funding with PE 0604766, Project D957.	1000	0	0	0
DTES Production, Interoperability and Upgrade Spirals. Starting in FY03 DTES costs shared with PE, 0604766, Project D957, and SSNs BZ7316 and BZ7317. FY04 and beyond funded by BZ7316 and this Project.	69	0	0	0
Field Motivated Fixes, Baseline Builds, and Configuration Control Boards. FYs 03 and 04 funding supplemented within 0305208, D957. FY 05 supplemented with BZ7316. FY 06 and beyond covered by this PE only.	2000	0	0	0
TES Forward or MAIN Systems' upgrades and interoperability builds.	4006	0	0	0
Ensure data link interoperability across Services and other programs.	940	0	0	0
Totals	13515	9644	9901	10625

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
BZ7317 Tactical Exploitation System (TIARA)	0	14094	0	0	0	0	0	0	0	14094
APA AZ2000 Guardrail Mods (TIARA) (DCGS-A GRIFN MDEP FPDP Only)	3152	2195	0	0	0	0	0	0	0	5347
PE 0604766A Tactical Exploitation System (TES) / DCGS-A 957	26022	21821	0	0	0	0	0	0	0	47843
PE 0604770 Army Common Ground Station (CGS) (202)	4656	0	0	0	0	0	0	0	0	4656
BA1080, Army Common Ground Station (CGS)	8200	0	0	0	0	0	0	0	0	8200
PE 0604321 CI/HUMINT Software Products (B41) (TIARA)	2103	928	933	3172	1603	1666	2916	3115	Continuing	Continuing
BK5275 CI HUMINT Info Management System	14543	2924	730	6549	4996	5786	10005	12166	Continuing	Continuing

C. Acquisition Strategy: DCGS-A will be executed via an evolutionary acquisition approach, providing incremental development throughout the System Development and Demonstration (SDD) phase. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline. The program emphasizes migration of current force capabilities into a common baseline, multiple prototype deliveries, integrated testing and continuous evaluation opportunities.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . System Integration and Test for Spirals 1-3	CPAF	Northrup Grumman, Linthicum, MD	7700	0		0		0		0	7700	0
b . SETA Support, Visualization/Data Sharing Studies, Analysis and M&S	T&M	Booz-Allen, Eatontown, NJ	5523	3088	1Q	0		0		0	8611	0
c . TES DCGS-A Interoperability	CPFF	Northrup Grumman, Linthicum, MD	33639	0		0		0		0	33639	0
d . DCGS-A Product Selection and Integration	CP	Various	0	4607	2Q	6015	1Q	6278	1Q	0	16900	Continue
e . AWIAATS	MIPR	Battlelabs, Ft. Huachuca	1500	0		0		0		0	1500	0
f . Distributed Data Vis	MIPR	Battlelabs, Ft. Huachuca	2800	0		0		0		0	2800	0
g . NDIP	MIPR	Battlelabs, Ft. Huachuca	1200	0		0		0		0	1200	0
Subtotal:			52362	7695		6015		6278		0	72350	Continue

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Objective Doctrine/TTP Development To Support a Milestone B for ODCGS-A	MIPR	Ft. Huachuca, AZ	5623	0		0		0		0	5623	0
b . Matrix Support	MIPR	CECOM, Fort Monmouth NJ	3774	600	1Q	600	1Q	600	1Q	Continue	5574	Continue
Subtotal:			9397	600		600		600		Continue	11197	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Joint Interoperability Test and Evaluation	MIPR	INSCOM	1938	1099	1-2Q	1200	1-2Q	1500	1-2Q	0	5737	0
b . Test support for DCGS-A development	MIPR	TBD	0	0		1836	1Q	1997	1Q	0	3833	0
Subtotal:			1938	1099		3036		3497		0	9570	0

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In-House	PM, DCGS-A	4682	250	1Q	250	1Q	250	1Q	Continue	5432	Continue
Subtotal:			4682	250		250		250		Continue	5432	Continue
Project Total Cost:			68379	9644		9901		10625		Continue	98549	Continue

Schedule Profile (R4 Exhibit)

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Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Spirals 2 & 3 (Mobile Configurations)	[Red Bar]				Spirals 2 & 3 (Mobile Configurations)																											
Spiral 1 Fixed					[Red Bar]				Spiral 1 Fixed Sites																							
(1) System Integration Lab (SIL) Standup	[Red Bar]								▲ 1 SIL Standup																							
Spiral 4 SW/DIB Integration					[Red Bar]				Spiral 4 SW/DIB Integration																							
(2) Milestone B	[Red Bar]								▲ 2 Milestone B																							
Spiral 5 SDD					[Red Bar]				Spiral 5 SDD																							
DCGS-A Participation in FCS UA Exp	[Red Bar]								FCS UA Exp																							
DT / LUT					[Red Bar]				DT / LUT																							
(3) Milestone C LRIP (Spiral 4 SW)	[Red Bar]								▲ 3 MS C LRIP (Spiral 4 SW)																							
DT 2					[Red Bar]				DT 2																							
IOT&E	[Red Bar]								IOT&E																							
(4) FRP Decision					[Red Bar]				▲ 4 FRP (Spiral 5 Configuration)																							
(5) Initial Operational Capability	[Red Bar]								▲ 5 IOC																							
P3I					[Red Bar]				P3I																							

Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Spirals 2 & 3 Mobile	1-4Q	1-2Q						
Spiral 1 Fixed	1-4Q	1-4Q						
System Integration Lab (SIL) Standup		2Q						
Spiral 4 SW/DIB Integration		2-4Q	1-4Q					
Milestone B			2Q					
Spiral 5 SDD			2-4Q	1-4Q	1-4Q			
DCGS-A Participation in FCS UA Exp			1-3Q					
DT/ LUT			3Q					
Milestone C LRIP			4Q					
DT 2					3Q			
IOT&E					4Q			
Full Rate Production Decision						1Q		
Initial Operational Capability						2Q		
Pre Planned Product Improvement (P3I)							2-4Q	1-4Q

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PROJECT
D06

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
D06 DCGS-A FUSION INTEGRATION (JMIP)	1310	8966	17201	24582	24726	22969	4410	1088	0	105252

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms defined as Future Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: collection and processing of space, airborne, ground and maritime ISR sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project establishes DCGS-A sensor fusion and all source production capabilities, leveraging previously completed algorithm, on-going Future Combat System (FCS) and Science and Technology (S&T) developmental efforts to meet the requirements for battle management and situational awareness, intelligence preparation of the battlespace (battle damage assessments, course of action/predictive analysis, wargaming), target development (deliberate, time critical, high value/high payoff), collection/ISR management (requirement and mission), electronic warfare/countermeasures, force protection, indications and warnings, operational security, and battlefield visualization and presentation. The Sensor Fusion capability will address both traditional intelligence disciplines (signals intelligence, imagery intelligence, human intelligence, measurements and signatures intelligence) from organic, Theater, and National assets (systems and databases), and non-traditional sources (open source intelligence, fire support) to achieve a complete and universal understanding of the situation in support of the commander/warfighter, battle command databases, and the Common Operational Picture (COP). The sensor fusion capability will support all types of units of employment/action across a broad spectrum of both traditional and non-traditional (e.g., SASO, SSC, NEO) operations, and improved interoperable with Joint, Allied, and Coalition forces.

FY06/07 funds the development and integration of traditional and non-traditional multi-intelligence sensor fusion products and technologies into the DCGS-A baseline to produce a fully automated fusion capability.

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Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Enhance interface between sensor fusion process and SIGINT single sources for design and prototype development.	200	1750	3500	5500
Enhance interface between sensor fusion process and CI/HUMINT single source for design and prototype development.	200	1000	1500	3500
Enhance sensor fusion processing of MASINT for design and prototype development.	200	1250	1500	3500
Enhance controlled interface technology for improved product distribution at multiple security levels.	277	1000	2000	3283
Studies, analysis, and prototyping for porting sensor fusion mission applications to FCS environment.	248	1156	1500	1899
Transition of sensor fusion processes and Current Force systems capabilities to DCGS-A.	185	2810	7201	6900
Totals	1310	8966	17201	24582

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 654321, ASAS Evolutionary Acquisition	17856	4094	6891	3358	3363	3367	3371	3376	0	45676

C. Acquisition Strategy: DCGS-A will be executed via an evolutionary acquisition approach, providing incremental development throughout the System Development and Demonstration (SDD) phase. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline. The program emphasizes migration of current force capabilities into a common baseline, multiple prototype deliveries, integrated testing and continuous evaluation opportunities.

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prototype Development and Transition of Current Force systems	Competitive CPFF	Austin Information Systems, Austin TX	910	0		0		0		0	910	Continue
b . Development and Integration of Sensor Fusion Products and Technologies	TBD	TBD	0	7848	1Q	14851	2-3Q	21882	1Q	44000	88581	0
Subtotal:			910	7848		14851		21882		44000	89491	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM/RDCOM, Ft. Monmouth, NJ	100	168	1Q	800	1Q	900	1Q	Continue	1968	Continue
b . SETA Support	Competitive T&M	Sytex, Vienna, VA	150	0		0		0		0	150	0
Subtotal:			250	168		800		900		Continue	2118	Continue

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prototype Test & Evaluation	MIPR	ATEC/EPG	0	500	1Q	1000	1Q	1000	1Q	Continue	2500	Continue
Subtotal:			0	500		1000		1000		Continue	2500	Continue

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Govt In House		PM I&E/DCGS-A	150	450		550		800		Continue	1950	Continue
Subtotal:			150	450		550		800		Continue	1950	Continue

Project Total Cost:			1310	8966		17201		24582		Continue	96059	Continue
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Schedule Profile (R4 Exhibit)

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PROJECT
D06

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Spirals 2 & 3 (Mobile Configurations)	[Red Bar]				Spirals 2 & 3 (Mobile Configurations)																											
Spiral 1 Fixed					[Red Bar]				Spiral 1 Fixed Sites																							
(1) System Integration Lab (SIL) Standup	[Red Bar]								▲ 1 SIL Standup																							
Spiral 4 SW/DIB Integration					[Red Bar]				Spiral 4 SW/DIB Integration																							
(2) Milestone B	[Red Bar]								▲ 2 Milestone B																							
Spiral 5 SDD					[Red Bar]				Spiral 5 SDD																							
DCGS-A Participation in FCS UA Exp	[Red Bar]								FCS UA Exp																							
DT / LUT					[Red Bar]				DT / LUT																							
(3) Milestone C LRIP (Spiral 4 SW)	[Red Bar]								▲ 3 MS C LRIP (Spiral 4 SW)																							
DT 2					[Red Bar]				DT 2																							
IOT&E	[Red Bar]								IOT&E																							
(4) FRP Decision					[Red Bar]				▲ 4 FRP (Spiral 5 Configuration)																							
(5) Initial Operational Capability	[Red Bar]								▲ 5 IOC																							
P3I					[Red Bar]																								P3I			

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
**0305208A - Distributed Common Ground/Surface
 Systems (JMIP)**

PROJECT
D06

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Spirals 2 & 3 Mobile	1-4Q	1-2Q						
Spiral 1 Fixed	1-4Q	1-4Q						
System Integration Lab (SIL) Standup		2Q						
Spiral 4 SW/DIB Integration		2-4Q	1-4Q					
Milestone B			2Q					
Spiral 5 SDD			2-4Q	1-4Q	1-4Q			
DCGS-A Participation in FCS UA Exp			1-3Q					
DT / LUT			3Q					
Milestone C LRIP			4Q					
DT 2					3Q			
IOT&E					4Q			
Full Rate Production Decision						1Q		
Initial Operational Capability						2Q		
Pre Planned Product Improvement (P3I)							2-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems (JMIP)

PROJECT
D07

COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to Complete	Total Cost
	Actual	Estimate								
D07 DCGS-A COMMON MODULES (JMIP)	21147	27786	56803	75485	34649	28081	6490	4443	0	254884

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms defined as Objective Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: collection and processing of space, airborne, ground and maritime ISR sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project provides for the design, development, integration and test of the DCGS-A system of systems at all echelons, from embedded DCGS-A at the UA up to Fixed Site operations. The effort includes system engineering, software integration and development, test & evaluation, and use of M&S to develop DCGS-A Mobile prototypes with common multi-function hardware and software combinations (i.e. user workstations) capable of performing all DCGS-A functions. Development will focus on common module hardware and software that is scalable to allow commanders increased flexibility in the intelligence force package deployed such that it can be tailored to the echelon, location, and mission that DCGS-A will be required to support. Included in the development will be the stand-up of a Federated Systems Integration Lab (SIL) to assess and implement existing and new candidate software applications and components into the DCGS-A baseline design. A common set of ISR Analysis Tools to support collaboration, exploitation, fusion and collection management will developed that operate within the construct of distributed, reach operations within the DCGS-A enterprise in order to maximize data access and minimize forward footprint. This will ultimately result in a DCGS-A design that reduces physical and logistics footprint, eases training burden, and decreases sustainability requirements.

FY 06/07 funds DCGS-A System Development and Demonstration (SDD), integration of DCGS-A Mobile prototypes, common module multi-function hardware, and the initial DCGS-A software configuration baseline for Operational Test. A System Integration Lab (SIL) will evaluate and integrate candidate software applications and implement the DoD mandated 102 DCGS Integration Backbone (DIB) for integration of Joint common components and interoperability amongst the Services.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
**0305208A - Distributed Common
 Ground/Surface Systems (JMIP)**

PROJECT
D07

Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
System integration and test support for Spirals 1, 2 & 3.	3700	0	0	0
SIL design and planning/implementation for 10.2 DIB.	0	5000	5000	1500
Embedded DCGS-A scalability study and FCS support.	2500	2500	2500	2500
Evaluate, integrate and test existing and new software applications and components for incorporation into the DCGS-A baseline.	5347	13086	49303	71485
FIA/Migration of TES-M to DCGS-A Fixed Site.	9600	7200	0	0
Totals	21147	27786	56803	75485

B. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE (PE 35208, Proj 956) DCGS-A JMIP	13654	9751	10236	10747	11213	11716	2116	2120	Continuing	Continuing
RDTE (PE 35208, Proj D08) DCGS-A JMIP	1034	6995	7090	7452	10803	10829	4000	2000	Continuing	Continuing
RDTE (PE 35208, Proj D06) DCGS-A JMIP	1323	7719	17332	24299	24410	22717	4400	1100	Continuing	Continuing
BZ7316 DCGS-A Unit of Employment	2667	9575	43543	67841	92012	96080	150252	161346	Continuing	Continuing

C. Acquisition Strategy: DCGS-A will be executed via an evolutionary acquisition approach, providing incremental development throughout the System Development and Demonstration (SDD) phase. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline. The program emphasizes migration of current force capabilities into a common baseline, multiple prototype deliveries, integrated testing and continuous evaluation opportunities.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
**0305208A - Distributed Common Ground/Surface
 Systems (JMIP)**

PROJECT
D07

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Embedded DCGS-A scalability study and FCS support	Competitive CPIF/CPAF	Boeing Corp, CA	3500	2500	2Q	2500	2Q	2500	2Q	Continue	11000	Continue
b . System integration and test support for Spirals 1, 2 & 3	Sole Source CPIF/CPAF	Northrup Grumman, Linthicum, MD	3700	0		0		0		Continue	3700	Continue
c . Evaluate, integrate and test existing and new software applications and components into DCGS-A SOA.	Multiple FFP/CPFF	TBD	3767	6794	3Q	41003	1Q	63685	1Q	0	115249	0
d . SIL design and planning/implementation for 10.2 DIB	Sole Source	CERDEC, Ft. Monmouth	0	5000	2Q	5000	1Q	1500	1Q	Continue	11500	Continue
e . FIA/TES-M Migration to Fixed Site	Sole Source	ASPO/Northrop Grumman	9600	7200	2Q	0		0		0	16800	0
Subtotal:			20567	21494		48503		67685		Continue	158249	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
**0305208A - Distributed Common Ground/Surface
 Systems (JMIP)**

PROJECT
D07

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	RDCOM/CECOM, Ft. Monmouth, NJ	532	592	1Q	1000	1Q	1000	1Q	Continue	3124	Continue
Subtotal:			532	592		1000		1000		Continue	3124	Continue

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Test support	MIPR	ATEC	0	4700	2Q	4500	2Q	4000	2Q	0	13200	0
Subtotal:			0	4700		4500		4000		0	13200	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
**0305208A - Distributed Common Ground/Surface
 Systems (JMIP)**

PROJECT
D07

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Project Management	In House	PM DCGS-A	1048	1000	1Q	2800	1Q	2800	1Q	Continue	7648	Continue
Subtotal:			1048	1000		2800		2800		Continue	7648	Continue
Project Total Cost:			22147	27786		56803		75485		Continue	182221	Continue

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface
Systems (JMIP)

PROJECT
D07

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Spirals 2 & 3 (Mobile Configurations)	[Red Bar]				Spirals 2 & 3 (Mobile Configurations)																											
Spiral 1 Fixed					[Red Bar]				Spiral 1 Fixed Sites																							
(1) System Integration Lab (SIL) Standup	[Red Bar]								▲ 1 SIL Standup																							
Spiral 4 SW/DIB Integration					[Red Bar]				Spiral 4 SW/DIB Integration																							
(2) Milestone B	[Red Bar]								▲ 2 Milestone B																							
Spiral 5 SDD					[Red Bar]				Spiral 5 SDD																							
DCGS-A Participation in FCS UA Exp	[Red Bar]								FCS UA Exp																							
DT / LUT					[Red Bar]				DT / LUT																							
(3) Milestone C LRIP (Spiral 4 SW)	[Red Bar]								▲ 3 MS C LRIP (Spiral 4 SW)																							
DT 2					[Red Bar]				DT 2																							
IOT&E	[Red Bar]								IOT&E																							
(4) FRP Decision					[Red Bar]				▲ 4 FRP (Spiral 5 Configuration)																							
(5) Initial Operational Capability	[Red Bar]								▲ 5 IOC																							
P3I					[Red Bar]																				P3I							

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
**0305208A - Distributed Common Ground/Surface
 Systems (JMIP)**

PROJECT
D07

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Spirals 2 & 3 Mobile	1-4Q	1-2Q						
Spiral 1 Fixed	1-4Q	1-4Q						
System Integration Lab (SIL) Standup		2Q						
Spiral 4 SW/DIB Integration		2-4Q	1-4Q					
Milestone B			2Q					
Spiral 5 SDD			2-4Q	1-4Q	1-4Q			
DCGS-A Participation in FCS UA Exp			3Q					
DT / LUT			3Q					
Milestone C LRIP			4Q					
DT 2					3Q			
IOT&E					4Q			
Full Rate Production Decision						1Q		
Initial Operational Capability						2Q		
Pre Planned Product Improvement (P3I)							2-4Q	1-4Q

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems (JMIP)

PROJECT
D08

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
D08 DCGS-A SENSOR INTEGRATION (JMIP)	1023	6877	7037	7539	10942	10950	4008	1979	0	50355

A. Mission Description and Budget Item Justification: Distributed Common Ground System - Army (DCGS-A) will serve as the primary ground system of systems for airborne and ground sensor platforms defined as Future Force systems. DCGS-A enables the commander to achieve situational understanding by leveraging multiple sources of data, information, and intelligence to synchronize the elements of Joint and Combined Arms combat power (maneuver, maneuver support and maneuver sustainment support). The core functions of DCGS-A are: collection and processing of space, airborne, ground and maritime ISR sensor data; control of select Army and joint ISR sensor systems; intelligence synchronization; ISR planning, reconnaissance and surveillance (R&S) integration; fusion of sensor information, and direction and distribution/dissemination of sensor information. It draws information from a wide variety of automated and manual sources; on-board sensors, space platforms, unattended air and ground vehicles, existing and new ISR capabilities, and an assortment of databases to enable the land component commander to execute battle command, synchronize fires and effects, rapidly shift battle focus, achieve situational understanding, protect the force, and employ his forces more effectively. DCGS-A allows commanders at all levels to visualize and understand the threat and environment, predict threat intentions, execute targeting through targeting support, conduct ISR integration and support Information Operations.

This project addresses ISR sensor integration and interoperability with existing and new platforms and sensors to include a common data link solution.

FY 06/07 funds transition, test and integration of new and Current Force sensors into the DCGS-A system design and architecture.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Integrate Current Force Multi-INT sensor (HUMINT, IMINT, SIGINT, MASINT) modules into the DCGS-A network.	0	3069	3140	3300
Integrate Future Force Multi-Int sensor modules into the DCGS-A network.	0	926	950	3152
Integrate common data link solution into DCGS-A mobile prototypes.	1023	2882	2947	1087
Totals	1023	6877	7037	7539

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
**0305208A - Distributed Common
 Ground/Surface Systems (JMIP)**

PROJECT
D08

B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE (PE 35208, Proj 956) DCGS-A JMIP	13654	9751	10236	10747	11213	11716	2116	2120	Continuing	Continuing
RDTE (PE 35208, Proj D07) DCGS-A JMIP	21364	18140	57239	74616	34208	27773	6476	4489	Continuing	Continuing
RDTE (PE 35208, Proj D06) DCGS-A JMIP	1323	7719	17332	24299	24410	22717	4400	1100	Continuing	Continuing
BZ7316 DCGS-A Unit of Employment	2667	9575	43543	67841	92012	96080	150252	161346	Continuing	Continuing
AZ2000 GRCS Mods (DCGS-A GRIFIN only)	3152	2195	0	0	0	0	0	0	0	5347

C. Acquisition Strategy: DCGS-A will be executed via an evolutionary acquisition approach, providing incremental development throughout the System Development and Demonstration (SDD) phase. Each increment will incorporate and validate select DCGS-A capabilities into the overall DCGS-A system baseline. The program emphasizes migration of current force capabilities into a common baseline, multiple prototype deliveries, integrated testing and continuous evaluation opportunities.

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems (JMIP)

PROJECT
D08

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Develop and Integrate DCGS-A Multi-INT Sensor Modules	Competitive CPIF/CPAF	TBD	0	3275	1Q	3600	1Q	3650	1Q	Continue	10525	Continue
b . Develop and Integrate components for sensor data distribution in DCGS-A	Competitive CPIF/CPAF	TBD	0	3052	1Q	2887	1Q	3339	1Q	Continue	9278	Continue
Subtotal:			0	6327		6487		6989		Continue	19803	Continue

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	CECOM	75	150	1Q	150	1Q	150	1Q	Continue	525	Continue
Subtotal:			75	150		150		150		Continue	525	Continue

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems (JMIP)

PROJECT
D08

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Integration and test of Current Force sensor modules into DCGS-A Spirals.	Competitive CPIF/CPAF	Northrop Grumman, Linthicum, MD	833	0		0		0		0	833	0
Subtotal:			833	0		0		0		0	833	0

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In House	PM DCGS-A	115	400	1Q	400	1Q	400	1Q	Continue	1315	Continue
Subtotal:			115	400		400		400		Continue	1315	Continue

Project Total Cost:			1023	6877		7037		7539		Continue	22476	Continue
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Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems (JMIP)

PROJECT
D08

Event Name	FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Spirals 2 & 3 (Mobile Configurations)	[Red]				Spirals 2 & 3 (Mobile Configurations)																											
Spiral 1 Fixed	[Red]				Spiral 1 Fixed Sites																											
(1) System Integration Lab (SIL) Standup	[Red]				▲ 1 SIL Standup																											
Spiral 4 SW/DIB Integration	[Red]				Spiral 4 SW/DIB Integration																											
(2) Milestone B	[Red]				▲ 2 Milestone B																											
Spiral 5 SDD	[Red]				Spiral 5 SDD																											
DCGS-A Participation in FCS UA Exp	[Red]				FCS UA Exp																											
DT / LUT	[Red]				DT / LUT																											
(3) Milestone C LRIP (Spiral 4 SW)	[Red]				▲ 3 MS C LRIP (Spiral 4 SW)																											
DT 2	[Red]				DT 2																											
IOT&E	[Red]				IOT&E																											
(4) FRP Decision	[Red]				▲ 4 FRP (Spiral 5 Configuration)																											
(5) Initial Operational Capability	[Red]				▲ 5 IOC																											
P3I	[Red]				P3I																											

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
7 - Operational system development

PE NUMBER AND TITLE
0305208A - Distributed Common Ground/Surface Systems (JMIP)

PROJECT
D08

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Spirals 2 & 3 Mobile	1-4Q	1-2Q						
Spiral 1 UE Fixed	1-4Q	1-4Q						
System Integration Lab (SIL) Standup		2Q						
Spiral 4 SW/DIB Integration		2-4Q	1-4Q					
Milestone B			2Q					
Spiral 5 SDD			2-4Q	1-4Q	1-4Q			
DCGS-A Participation in FCS UA Exp			1-3Q					
DT/ LUT			3Q					
Milestone C LRIP			4Q					
DT 2					3Q			
IOT&E					4Q			
Full Rate Production Decision						1Q		
Initial Operational Capability						2Q		
Pre Planned Product Improvement (P3I)							2-4Q	1-4Q