PE NUMBER: 0604740F
PE TITLE: Integrated Command & Control Applications

Exhibit R-2, RDT&E Budget Item Justification									DATE February 2005	

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)					PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications					
Cost ($ in Millions)	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
Total Program Element (PE) Cost	10.772	21.904	0.161	0.010	0.110	0.055	0.018	0.000	Continuing	TBD
2523 Product Lines	0.237	0.258	0.161	0.010	0.110	0.055	0.018	0.000	Continuing	TBD
2524 Reuse and Component Support	10.535	21.646	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The goal of the Integrated Command & Control Applications (IC2A) program is to reduce the development time, costs, and risks associated with the acquisition and development of an enterprise oriented Command & Control (C2) capability by defining a reference architecture to enhance a common application use and reuse. Project 652523, Product Lines, minimizes development cost and time by defining a C2 architecture approach consistent with net-centric principles and guidance to ensure compliance and interoperability using standards based service oriented architecture components. The use of web services as a common product line on a C2 reference architecture improves software quality, interoperability and reliability while reducing fielding times and overall life cycle costs. Project 652524, Reuse and Component Support (RCS), identifies, tests, and provides reusable software components and products to the IC2A program. The RCS project developed a software reuse strategy for the Department of Defense (DoD) and is developing a Distributed Mission Interoperability Toolkit (DMIT) focused on research and development of interoperability in support of existing programs, a Congressional special interest item, based on primarily commercial off-the-shelf (COTS) products. The IC2A program has determined that over 80% of the functionality of any command center software is common to all command centers for programs using product line concepts based on a C2 reference architecture.

This program is categorized as Budget Activity (BA) 5 to reflect a program in System Demonstration and Development (SD&D).

(U) B. Program Change Summary ($ in Millions)

	FY 2004	FY 2005	FY 2006	FY 2007
(U) Previous President's Budget	11.105	0.258	0.161	0.264
(U) Current PBR/President's Budget	10.772	21.904	0.161	0.010
(U) Total Adjustments	-0.333	21.646		
(U) Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases		21.646		
Reprogrammings				
SBIR/STTR Transfer	-0.333			

(U) Significant Program Changes:

In FY05 Congress added $21.9M for JSTARS Net-Centric Enhancements using Web Services, Distributed Mission Interoperability Toolkit (DMIT), Net-Centric Information Visualization Services, Integration of Global Expeditionary Medical Services (IGAPS), Global Awareness Presentation System (GAPS), Asset Source for Software Engineering Technology eWing Program, and Air Force Electronic Systems Command/National Product Line Asset Center (NPLACE).

Exhibit R-2a, RDT&E Project Justification							DATE February 2005		

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)				PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications			PROJECT NUMBER AND TITLE 2523 Product Lines		

Cost ($ in Millions)	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
2523 Product Lines	0.237	0.258	0.161	0.010	0.110	0.055	0.018	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

The software architecture, developed by the Product Lines Project, forms a vital component of the Integrated Command and Control Applications (IC2A) program by providing pre-defined reference architecture as a foundation for a DoD enterprise C2 capability. Using rapid prototyping techniques, a contractor can quickly tailor a reference architecture-based C2 component to the warfighter's needs and deliver an integrated, combat-ready system. All product lines and components are based on net-centric principles, service oriented architecture and Core Enterprise Services to ensure joint compliance and interoperability; make maximum use of open system architectures, industry standards, Commercial off-the-shelf (COTS) products, and government furnished equipment; and incorporate multilevel security (MLS) features. This effort ensures that components and systems are developed with a view of operating within a C2 enterprise instead of stovepipe functionality. Contractors develop and maintain a common integrated infrastructure in a collaborative, synergistic environment using validated, mature software engineering processes to help ensure the quality of the designs and components. Reference architecture based designs and tested software components reduce development costs, risks and time for the user. New technologies, capabilities, and incremental developments are assessed and integrated into the architecture and components design as part of the product line development process to minimize any impact to the user.

This program is categorized as Budget Activity (BA) 5 to reflect a program in System Demonstration and Development (SD&D).

(U) **B. Accomplishments/Planned Program ($ in Millions)**

	FY 2004	FY 2005	FY 2006	FY 2007
(U) Qualify components for product lines	0.237	0.258	0.161	0.010
(U) Total Cost	0.237	0.258	0.161	0.010

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

	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
(U) Not applicable										

(U) **D. Acquisition Strategy**

All major contracts within PE 0604740F were awarded after full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis	DATE February 2005

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604740F Integrated Command & Control Applications**	PROJECT NUMBER AND TITLE **2523 Product Lines**

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2004 Cost	FY 2004 Cost	FY 2004 Award Date	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
(U) Product Development													0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Support													0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Test & Evaluation													0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Management														
Program Office Support/ITSP	Various	ESC Hanscom AFB, MA	0.000	0.237	Oct-03	0.258	Oct-04	0.161	Oct-05	0.010	Oct-06	Continuing	TBD	TBD
Subtotal Management			0.000	0.237		0.258		0.161		0.010		Continuing	TBD	TBD
Remarks:														
(U) Total Cost			0.000	0.237		0.258		0.161		0.010		Continuing	TBD	TBD

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Exhibit R-4, RDT&E Schedule Profile	DATE February 2005

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications	PROJECT NUMBER AND TITLE 2523 Product Lines

Project 2523

R-1 Shopping List - Item No. 86-5 of 86-11

Exhibit R-4 (PE 0604740F)

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Exhibit R-4a, RDT&E Schedule Detail	DATE **February 2005**

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604740F Integrated Command & Control Applications**	PROJECT NUMBER AND TITLE **2523 Product Lines**

(U) **Schedule Profile**

	FY 2004	FY 2005	FY 2006	FY 2007

(U)

Exhibit R-2a, RDT&E Project Justification		DATE February 2005

BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0604740F Integrated Command & Control Applications	PROJECT NUMBER AND TITLE 2524 Reuse and Component Support

Cost ($ in Millions)	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
2524 Reuse and Component Support	10.535	21.646	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Reuse and Component Support project identifies, tests, and provides a set of common integrated infrastructure products for use by Air Force and Department of Defense program offices. This requires industry involvement for technology development and knowledge of direct and indirect impact to DoD missions in order to provide a skillful technical transition to fully state-of-the-art enterprise C2-based warfighting capability. Reuse and component architecture builds on the AF technical architecture and provides those pre-defined product line architectures with standards based architecture components. A software reuse strategy for DoD was developed as part of this effort. Efforts are continuing with development of a Distributed Mission Interoperability Toolkit focused on research and development of interoperability in support of existing programs.

The Distributed Mission Interoperability Toolkit (DMIT) funding enables on-demand, trusted, interoperability among and between Command, Control, Communications, Computers, & Intelligence (C4I) systems and simulation models. Air Tasking Interoperability Service (ATIS) (formerly Asset Source for Software Engineering Technology (ASSET)/eWing funding enables single point access to Air Force Command & Control (C2) legacy data sources through standard Web browsing technologies. Visual Computing for Productive Collateral Damage Congressional funds enables blast visualization and blast effects modeling tool development. Interactive 3-D Human Interface Congressional funding enables the development of a 3-D visualization (3-D Viz) toolkit with an interactive human interface capability. Specifically, 3-D Viz enables concept exploration and development of interactive 3-D human interface tools, such as: VROOM, STK and PowerScene to be incorporated into the toolkit. National Product Line Asset Center (NPLACE) funding enables the Air Force to continue the development of the NPLACE Software Reuse Repository.

This program is categorized as Budget Activity (BA) 5 to reflect a program in System Demonstration and Development (SD&D).

(U) B. Accomplishments/Planned Program ($ in Millions)

	FY 2004	FY 2005	FY 2006	FY 2007
(U) NPLACE	5.738	2.571		
(U) ATIS eWING, JSTARS, C2 Mgr for AFSOC		6.635		
(U) 3D Viz Services, IGEMS, GAPS		6.929		
(U) Distributed Mission Interoperability Toolkit (DMIT)	3.292	5.511		
(U) Visual Computional Predictive Collateral Damage	1.505			
(U) Total Cost	10.535	21.646	0.000	0.000

(U) C. Other Program Funding Summary ($ in Millions)

	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

(U) Not applicable

Project 2524	R-1 Shopping List - Item No. 86-7 of 86-11	Exhibit R-2a (PE 0604740F)

Exhibit R-2a, RDT&E Project Justification	DATE **February 2005**

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604740F Integrated Command & Control Applications**	PROJECT NUMBER AND TITLE **2524 Reuse and Component Support**

(U)   **D. Acquisition Strategy**

All major contracts for Reuse and Component Support development will be awarded after full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis	DATE **February 2005**

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604740F Integrated Command & Control Applications**	PROJECT NUMBER AND TITLE **2524 Reuse and Component Support**

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2004 Cost	FY 2004 Cost	FY 2004 Award Date	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
(U) Product Development														
NPLACE	C/FFP	West Virginia High Technology Center, West Virginia	0.000	2.220	Dec-03	2.365	Feb-05					Continuing	TBD	TBD
ATIS eWING, JSTARS, C2 Manager for AFSOC	C/FFP	SAIC, West Virginia	0.000	2.130	May-04	6.072	Feb-05					Continuing	TBD	TBD
3-D Viz Services, IGEMS, GAPS	C/FFP	ProLogic, West Virginia	0.000	1.310	Apr-04	6.375	Apr-05					Continuing	TBD	TBD
DMIT	C/FFP	Gestalt, Camden, New Jersey	0.000	2.900	Apr-04	4.960	Mar-05					Continuing	TBD	TBD
Visual Computing for Productive Collateral Damage	MIPR	ProLogic West Virginia	0.000	0.940	May-04							Continuing	TBD	TBD
Subtotal Product Development			0.000	9.500		19.772		0.000		0.000		Continuing	TBD	TBD
Remarks:														
(U) Support														
Contractor Support	T&M	ESC Hanscom AFB, MA	0.000	1.035	Dec-03	0.937	Feb-05					Continuing	TBD	TBD
Subtotal Support			0.000	1.035		0.937		0.000		0.000		Continuing	TBD	TBD
Remarks:														
(U) Test & Evaluation													0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Management														
Program Management Support						0.937	Feb-05						0.937	
Subtotal Management			0.000	0.000		0.937		0.000		0.000		0.000	0.937	0.000
Remarks:														
(U) Not applicable.														
(U) Total Cost			0.000	10.535		21.646		0.000		0.000		Continuing	TBD	TBD
Remarks:														

Exhibit R-4, RDT&E Schedule Profile	DATE **February 2005**

BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604740F Integrated Command & Control Applications**	PROJECT NUMBER AND TITLE **2524 Reuse and Component Support**

Exhibit R-4a, RDT&E Schedule Detail		DATE **February 2005**
BUDGET ACTIVITY **05 System Development and Demonstration (SDD)**	PE NUMBER AND TITLE **0604740F Integrated Command & Control Applications**	PROJECT NUMBER AND TITLE **2524 Reuse and Component Support**

(U) **Schedule Profile**	FY 2004	FY 2005	FY 2006	FY 2007
(U) NPLACE	1-4Q	1-4Q		
(U) ATIS, JSTARS, C2 Manager for AFSOC	4Q	2-4Q		
(U) 3-D Viz Services, IGEMS, GAPS	4Q	3-4Q		
(U) DMIT	4Q	2-4Q		
(U) Visual Computing for PCD	4Q			

Project 2524   R-1 Shopping List - Item No. 86-11 of 86-11   Exhibit R-4a (PE 0604740F)