Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

3600: Research, Development, Test & Evaluation, Air Force

PE 0207449F: Command and Control (C2) Constellation

BA 7: Operational Systems Development

	•											
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	20.075	18.086	7.329	-	7.329	0.000	0.000	0.000	0.000	0.000	45.490
675078: Horizontal Integration	-	11.126	8.477	7.329	-	7.329	0.000	0.000	0.000	0.000	0.000	26.932
675140: Joint Expeditionary Force Experiments	-	8.949	9.609	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	18.558

^{*}FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

Note

Air Force

In FY 2014: Project 675140, Joint Expeditionary Force Experiments (JEFX), was terminated

A. Mission Description and Budget Item Justification

The Command and Control Constellation (C2C) is the sole Air Force program for defining, developing, and assessing integrated effects of global, theater and tactical level Air Force air, space, and cyber command and control (C2) capabilities in support of the joint warfighter. The Air Force faces a complex future where conflict will range across a broad spectrum of operations and lethality. The Air Force requires capabilities with the maximum possible flexibility to deal with the widest possible range of conflict.

The C2C is the enabling program element for C2 Integration/Modernization. The Air Force is working to establish a C2 framework and architecture to be used as a unifying vision of command and control for each of the services core functions. C2C will support the defense strategy through: integration of air, space cyber and intelligence, surveillance, and reconnaissance (ISR) C2, through architectural analysis, prototyping, experimentation and innovation to develop cross-cutting solutions, and enable an improved "sense-to-kill" cycle time. C2C innovations and experimentation provide strategic, operational, and tactical direction for Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) solutions to facilitate an integrated mission environment that supports C2 planning and execution for air, space, and cyberspace. In-depth development and analyses of C2 operational, systems, and technical architectures are geared towards identifying capability gaps, identifying required "to be" information services, and evaluating C2 program planned improvements. Through prototyping and experimentation, C2C integrates rapidly developing technologies to promote common standards, data sharing, and information services across Air Force and joint warfighting applications to support joint enterprise solutions.

Project 675078, Horizontal Integration (HI) conducts DOTMLPF analyses and assessments to guide cross-cutting, C2 sub-enterprise and cyberspace investment decisions that integrate USAF capabilities into joint and coalition operations. HI identifies, prioritizes, and develops requirements and horizontally integrated solution recommendations to ensure the latest technologies and information services are integrated into a cross cutting C2 system that enables integrated effects in all warfighter domains. The HI strategy will be validated by Headquarters, Air Force (HAF) to ensure that initiatives are harmonized with the most urgent warfighter needs described by the C2 Capability Assessment Team (CAT) and C2 Core Function Master Plan (CFMP) and supporting the 2012 Air Force, Joint and Defense Strategies

PE 0207449F: Command and Control (C2) Constellation

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^{##} The FY 2014 OCO Request will be submitted at a later date

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

3600: Research, Development, Test & Evaluation, Air Force

PE 0207449F: Command and Control (C2) Constellation

BA 7: Operational Systems Development

and Operational Concepts. Once validated, HI funds are applied toward identifying the most critical warfighter capabilities and ensuring they are horizontally integrated into both Air Force and joint C2 programs of record.

Project 675140, Joint Expeditionary Force Experiments (JEFX) are agile and frequent innovation-focused experiments which lead to pre-fielded operational and technical assessments. Constructive, live and virtual, operationally representative warfighter environments are created to support integration challenges which focus on critical C2 areas of interest that support the joint warfighter; including, C2 of ISR innovation that supports the air, space, and cyberspace domains. JEFX provides the infrastructure and integration initiatives for experimentation with emerging operational concepts and attendant new technologies that fill operational gaps in Air Force capabilities to meet emerging and rapidly changing real world threats. The JEFX strategy is validated and supported by the Commander, Air Combat Command (COMACC) and coordinated with Headquarters, Air Force (HAF) ensuring initiatives are harmonized with the most urgent warfighter needs and validated requirements described in the AF Core Function Master Plans (CFMP) and supported through MAJCOM Core function Lead Integrator (CFLI). JEFX initiatives are based on emerging CONOPS and warfighter challenges, important enablers of innovation and transformation, which are designed to support the themes and demonstrate emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power in support of the Joint Force.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or have approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	17.254	18.086	16.808	-	16.808
Current President's Budget	20.075	18.086	7.329	-	7.329
Total Adjustments	2.821	0.000	-9.479	-	-9.479
 Congressional General Reductions 	-	0.000			
 Congressional Directed Reductions 	-	0.000			
 Congressional Rescissions 	0.000	0.000			
 Congressional Adds 	-	0.000			
 Congressional Directed Transfers 	-	0.000			
 Reprogrammings 	3.346	0.000			
SBIR/STTR Transfer	-0.525	0.000			
Other Adjustments	0.000	0.000	-9.479	-	-9.479

Change Summary Explanation

In FY 2012: Project 675078, Horizontal Integration (HI), increased \$3.346M to support Air Force enterprise horizontal integration efforts.

In FY 2014: Project 675140, Joint Expeditionary Force Experiments (JEFX), was terminated, Horizontal Integration was reduced \$1.126M due to higher Air priorities.

PE 0207449F: Command and Control (C2) Constellation

Air Force

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DATE: April 2013

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APPROPRIATION/BUDGET ACTIV	/ITY			R-1 ITEM I	NOMENCL	ATURE		PROJECT				Ī
3600: Research, Development, Test	t & Evaluation, Air Fo	rce		PE 020744	9F: Comm	and and Co	ntrol (C2)	675078: H	orizontal In	tegration		
BA 7: Operational Systems Develop	oment			Constellation	on							
COST (\$ in Millions)	All Prior Years FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To	Total Cost	

COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
675078: Horizontal Integration	-	11.126	8.477	7.329	-	7.329	0.000	0.000	0.000	0.000	0.000	26.932
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

^{*}FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

Exhibit R-24 RDT&F Project Justification: PR 2014 Air Force

A. Mission Description and Budget Item Justification

Horizontal Integration (HI) develops an integrated mission environment that supports cross-cutting solutions across the air, space, and cyberspace command and control (C2) warfighter domain. HI activities include: requirements, architecture, systems engineering, technology development, risk reduction, prototyping, and transition. These activities are required to: identify, design, develop, experiment, and implement C2 solutions supporting operational requirements for warfighting integration and interoperability needs which are not the sole responsibility of a specific program of record.

The nature of integrated and interoperable C2 warfighting capabilities span multiple platforms and domains. These capabilities are routinely being adjusted to meet the changing requirements from the warfighting communities. The HI project is uniquely designed to look across platforms and domains enabling the Air Force to respond to operator needs across the seams of individual systems. These horizontal integration initiatives will be prototyped, assessed, appropriately captured in requirements documents and then transitioned to programs of record for production, fielding and sustainment.

Systems Engineering and analysis is the 'glue' that holds command and control constellation (C2C) elements together and closes the seams in the C2 architectures. Capability analysis identifies areas where interoperability can be improved within the Air Force, as well as among joint services, and coalition partners. Once capability issues are identified, they are prioritized and pilot initiatives are developed to provide solutions to the warfighter challenges to resolve the capability gaps. The HI project also helps to competitively prototype integrated solutions against validated program requirements.

The benefits of these activities are two-fold: the operational community is able to weigh the cost, risk, and performance trade-offs between enterprise solutions versus program centric solutions, and it supports competitive prototyping of all acquisition programs. The synchronization of HI prototyping and program milestone requirements offers an effective environment for increasing interoperability while reducing the impact of this policy on multiple programs. An infrastructure environment manages a continuous distributed operational environment that supports air, space, and cyberspace C2 and rapid acquisition, prototyping, development, integration, and fielding. C2 initiatives may use this infrastructure to mature their development status prior to entry into JEFX for operational and technical suitability assessment.

The HI prototype performances are assessed for operational utility, and the most promising initiatives/technologies will be matured and transitioned into weapon system configuration control baselines. Requirement documents will be published and revised, and a requirements database and implementation plan identifying the most significant C2C net-centric integration issues will be updated to catalog the activities necessary to accomplish this integration.

PE 0207449F: Command and Control (C2) Constellation

Air Force

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^{##} The FY 2014 OCO Request will be submitted at a later date

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	·
3600: Research, Development, Test & Evaluation, Air Force	PE 0207449F: Command and Control (C2)	675078: H	orizontal Integration
BA 7: Operational Systems Development	Constellation		

In addition, this project supports concept exploration, program definition/risk reduction efforts, and studies that support continuous improvements in C2. Guided by the MAJCOM-validated C2 capability gaps developed by the HI Capability Assessment Team annual process and the defense strategy to meet the evolving Anti-Access/Area Denial (A2/AD) threats to air, space and cyber C2 operations, these improvements include but are not limited to: integration of airspace and cross-domain synchronized operations, C2 of integrated air and missile defense, C2 of Air Force Forces and agile combat support, dynamic aerial network capabilities, and non-traditional ISR (NTISR), from 4th and 5th generation aircraft through processing and assessment, and interoperability with joint service, allied and coalition systems, C2 of personnel recovery, and air-sea battle. Activities also include studies and analysis to support both current program planning and execution, as well as future program planning.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Title: Reqmts/ CBP/ Integrated Ops/ C2 Framework Description: Requirements/Capabilities Based Planning (CBP) FY 2012 Accomplishments: Refined integrated air and missile defense (IAMD) C2 requirements. Continued future C2 integration/modernization strategy. FY 2013 Plans: Analyze, develop, and document emerging Air Force (AF) integrated Command and Control (C2) requirements. Continue future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Continue refining IAMD C2 requirements. Develop concepts and capabilities in support of air sea battle concepts of operation. FY 2014 Plans: Will analyze, develop, and document emerging Air Force (AF) integrated command and control (C2) requirements. Will continue future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Will continue to refine IAMD C2 requirements. Title: Arch and SE	FY 2012	FY 2013	FY 2014
FY 2012 Accomplishments: Refined integrated air and missile defense (IAMD) C2 requirements. Continued future C2 integration/modernization strategy. FY 2013 Plans: Analyze, develop, and document emerging Air Force (AF) integrated Command and Control (C2) requirements. Continue future C2 integration/ modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Continue refining IAMD C2 requirements. Develop concepts and capabilities in support of air sea battle concepts of operation. FY 2014 Plans: Will analyze, develop, and document emerging Air Force (AF) integrated command and control (C2) requirements. Will continue future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Will continue to refine IAMD C2 requirements. Title: Arch and SE	2.700	2.000	2.006
Refined integrated air and missile defense (IAMD) C2 requirements. Continued future C2 integration/modernization strategy. FY 2013 Plans: Analyze, develop, and document emerging Air Force (AF) integrated Command and Control (C2) requirements. Continue future C2 integration/ modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Continue refining IAMD C2 requirements. Develop concepts and capabilities in support of air sea battle concepts of operation. FY 2014 Plans: Will analyze, develop, and document emerging Air Force (AF) integrated command and control (C2) requirements. Will continue future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Will continue to refine IAMD C2 requirements. Title: Arch and SE			
Analyze, develop, and document emerging Air Force (AF) integrated Command and Control (C2) requirements. Continue future C2 integration/ modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Continue refining IAMD C2 requirements. Develop concepts and capabilities in support of air sea battle concepts of operation. FY 2014 Plans: Will analyze, develop, and document emerging Air Force (AF) integrated command and control (C2) requirements. Will continue future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Will continue to refine IAMD C2 requirements. Title: Arch and SE			
Will analyze, develop, and document emerging Air Force (AF) integrated command and control (C2) requirements. Will continue future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Will continue to refine IAMD C2 requirements. Title: Arch and SE			
	1.900	2.596	1.605
Description: Architecture Development and Systems Engineering			
FY 2012 Accomplishments:			

PE 0207449F: Command and Control (C2) Constellation

Air Force

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		1		April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207449F: Command and Control (C2) Constellation	PROJI 675078	ECT 8: <i>Horizontal</i>	Integration	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2012	FY 2013	FY 2014
Continued technical expertise support of functional and engineering an air-ground modernization and C2 of ISR Integration.	alyses within the C2 community. Specific emphasis w	as on			
FY 2013 Plans: Continue functional and systems engineering analysis within the C2 co relationships to operational architectures within the warfighting environmeds, C2 enterprise and C2 of cyber requirements with emphasis on a 5th - 4th Generation Fighter Interoperability, Dynamic Aerial Networks,	ment. Specific focus areas and efforts depend on real airspace and C2 integration, NTISR, C2 of AFFOR, IA				
FY 2014 Plans: Will continue functional and systems engineering analyses within the C relationships to operational architectures within the warfighting environ world needs, C2 enterprise and C2 of cyber requirements, with emphasism IAMD, 5th - 4th Generation Fighter Interoperability, Dynamic Aerial Net	ment. Specific focus areas and efforts will depend on sis on airspace and C2 integration, NTISR, C2 of AFF	real			
Title: Analysis Integ and SE			0.212	0.000	0.000
Description: Analysis Integration and Systems Engineering					
FY 2012 Accomplishments: Completed analysis and integration efforts. Specific focus areas were to cyber requirements. Completed the analysis and transition of prototype		of			
FY 2013 Plans: [This effort incorporated into other efforts.]					
FY 2014 Plans: [This effort incorporated into other efforts.]					
Title: Ops-Tech Analysis-Concept Dev't			1.151	0.000	0.000
Description: Ops/Tech Analysis and Concept Development					
FY 2012 Accomplishments: Completed the modernization of the Command and Control (C2) progra environment (IOE) to present, plan, and execute AF capabilities in supplinformation exchange through the planning and execution phases.		time			
FY 2013 Plans:					

PE 0207449F: Command and Control (C2) Constellation Air Force

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force			DATE:	April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207449F: Command and Control (C2) Constellation	PROJEC 675078: <i>F</i>		Integration	
B. Accomplishments/Planned Programs (\$ in Millions)		F'	Y 2012	FY 2013	FY 2014
[This effort incorporated into other efforts.]					
FY 2014 Plans:					
[This effort incorporated into other efforts.]					
Title: HI Solutions Assessments			4.816	3.299	3.11
Description: Horizontal Integration Solutions Assessment					
FY 2012 Accomplishments: Continued the selection of HI initiatives for execution that fostered e and supported the DoDI 5000.02 requirement for competitive prototy evaluated, and the selected initiatives were funded for execution.					
FY 2013 Plans: Continue to conduct annual selection of HI initiatives for new execut across C2 and extend an IOE, b. support the DoDI 5000.02 requirer requirements. Key criteria are near-term warfighter impact and likelil selected initiatives will be funded for execution.	ments for competitive prototyping and c. aid in refining				
FY 2014 Plans: Will continue to conduct an annual selection of HI initiatives for new integration across C2 and extend an IOE, b. support the DoDI 5000 refining requirements. Key criteria will continue to be near-term warf will be evaluated, and the selected initiatives will be funded for exec	.02 requirements for competitive prototyping and c. aid in ighter impact and likelihood of transition. Potential initiat				
Title: Program Management Administration (PMA)			0.347	0.582	0.59
Description: Program Support Administration costs support manag implementation	ement with engineering and technical for development a	nd			
FY 2012 Accomplishments: Supported the acquisition program with engineering and technical se	upport.				
FY 2013 Plans: Continue to support the acquisition program with engineering and te	echnical support.				
FY 2014 Plans:					

PE 0207449F: Command and Control (C2) Constellation Air Force

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
3600: Research, Development, Test & Evaluation, Air Force	PE 0207449F: Command and Control (C2)	675078: H	orizontal Integration
BA 7: Operational Systems Development	Constellation		

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
Will continue to support the acquisition program with engineering and technical support.			
Accomplishments/Planned Programs Subtotals	11.126	8.477	7.329

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

N/A

Remarks

D. Acquisition Strategy

This project uses full and open competition for operational requirements document creation, systems engineering & architecture development, modeling & simulation and experimentation, joint interoperability/integration, and horizontal integration approaches.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

PE 0207449F: Command and Control (C2) Constellation

Air Force

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207449F: Command and Control (C2)

Constellation

PROJECT

675078: Horizontal Integration

DATE: April 2013

Product Developmen	it (\$ in Mi	illions)		FY 2	2012	FY 2	2013		2014 ase	FY 2	2014 CO	FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Requirements/Capability Based Planning (CBP)	C/CPFF	Northrop Grumman:Langley AFB, VA	-	2.700	Nov 2011	1.800	Dec 2012	1.884	Dec 2013	-		1.884	0.000	6.384	ТВГ
Requirements/Capability Based Planning (CBP)(2)	C/CPFF	BAE:Rome, NY	-	0.000		0.200	Oct 2012	0.122	Oct 2013	-		0.122	0.000	0.322	ТВІ
Architecture Development and Systems Engineering/ GAPS/AWS Horizontal Integration	C/FFP	MITRE:Hanscom AFB, MA	-	0.150	Nov 2011	0.466	Nov 2012	0.152	Nov 2013	-		0.152	0.000	0.768	ТВС
Architecture Development and Systems Engineering/ GAPS/AWS Horizontal Integration (2)	C/FFP	Northrop Grumman:Langley AFB, VA	-	0.000		0.740	Dec 2012	0.501	Dec 2013	-		0.501	0.000	1.241	ТВІ
Architecture Development and Systems Engineering/ GAPS/AWS Horizontal Integration (3)	C/CPFF	Northrup Grumman:Rome, NY	-	0.000		1.390	Oct 2012	0.952	Oct 2013	-		0.952	0.000	2.342	ТВС
Analysis, Integration, and SE/Capability Roadmaps (2)	C/FFP	MITRE:Hanscom AFB, MA	-	0.212	Jan 2012	0.000		0.000		-		0.000	0.000	0.212	ТВІ
Tech Analysis and Concept Development	C/CPFF	Northrup Grumman:Rome, NY	-	1.107	Nov 2011	0.000		0.000		-		0.000	0.000	1.107	ТВІ
Tech Analysis and Concept Development (1)	C/CPFF	BAE:Rome, NY	-	0.044	Oct 2011	0.000		0.000		-		0.000	0.000	0.044	ТВГ
Horizontal Integration Solution Assessment (1)	C/FFP	MITRE:Hanscom AFB, MA	-	1.972	Oct 2011	1.100	Oct 2012	1.631	Oct 2013	-		1.631	0.000	4.703	ТВЕ
Horizontal Integration Solution Assessment (2)	C/FFP	Jacobs ETASS:Hanscom AFB, MA	-	0.098	Jan 2012	0.061	Jan 2013	0.086	Jan 2014	-		0.086	0.000	0.245	ТВІ
Horizontal Integration Solution Assessment	C/Various	Various:Hanscom AFB, MA	-	4.049	Oct 2011	2.138	Dec 2012	1.402	Dec 2013	-		1.402	0.000	7.589	ТВГ
		Subtotal	0.000	10.332		7.895		6.730		0.000		6.730	0.000	24.957	

PE 0207449F: Command and Control (C2) Constellation

Air Force

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DATE: April 2013 Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE PROJECT** 3600: Research, Development, Test & Evaluation, Air Force PE 0207449F: Command and Control (C2) 675078: Horizontal Integration BA 7: Operational Systems Development Constellation FY 2014 FY 2014 FY 2014 Support (\$ in Millions) oco FY 2012 FY 2013 Base Total Contract Target Method Performing All Prior Award Award Award Award **Cost To** Total Value of **Cost Category Item** & Type **Activity & Location** Years Cost Date Cost Date Cost Date Cost Date Complete Cost Contract Cost Support Assessment C/CPFF Spectrum:Rome, NY 0.447 Nov 2011 0.000 0.000 0.000 0.000 0.447 TBD Subtotal 0.000 0.447 0.000 0.000 0.000 0.000 0.000 0.447 FY 2014 FY 2014 FY 2014 Test and Evaluation (\$ in Millions) FY 2012 FY 2013 oco Total Base Contract Target Method All Prior Cost To Value of Performing Award Award Award Award Total **Cost Category Item** & Type **Activity & Location** Years Cost Date Cost Date Cost Date Cost Date Cost Complete Cost Contract Subtotal 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 FY 2014 FY 2014 FY 2014 Management Services (\$ in Millions) oco FY 2012 FY 2013 Base Total Contract Target All Prior **Cost To** Method Performing Award Award Award Award Total Value of **Cost Category Item** & Type **Activity & Location** Years Cost Date Cost Date Cost Date Cost Date Cost Complete Cost Contract Quantech Program Management C/FFP PASS:Hanscom 0.247 Jan 2012 0.247 Jan 2013 0.248 Jan 2014 0.248 0.000 0.742 TBD Support/PMA-1 AFB, MA Jacobs Program Management C/FFP 0.100 Jan 2012 0.100 Jan 2013 0.100 Jan 2014 0.100 0.000 0.300 TBD ETASS:Hanscom Support/PMA-2 AFB, MA Program Management Various:Hanscom Various 0.000 0.235 Jan 2013 0.251 Jan 2014 0.251 0.000 0.486 TBD Support/PMA-3 AFB MA Subtotal 0.347 0.582 0.599 0.599 0.000 0.000 0.000 1.528 Target All Prior FY 2014 FY 2014 FY 2014 **Cost To** Value of Total Years FY 2012 FY 2013 Base oco Total Complete Cost Contract 0.000 11.126 8.477 7.329 0.000 7 329 26 932 **Project Cost Totals** 0.000

Remarks

PE 0207449F: Command and Control (C2) Constellation Air Force

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Exhibit R-4. RDT&E Schedule Profile: PB 2014 Air Force DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207449F: Command and Control (C2)

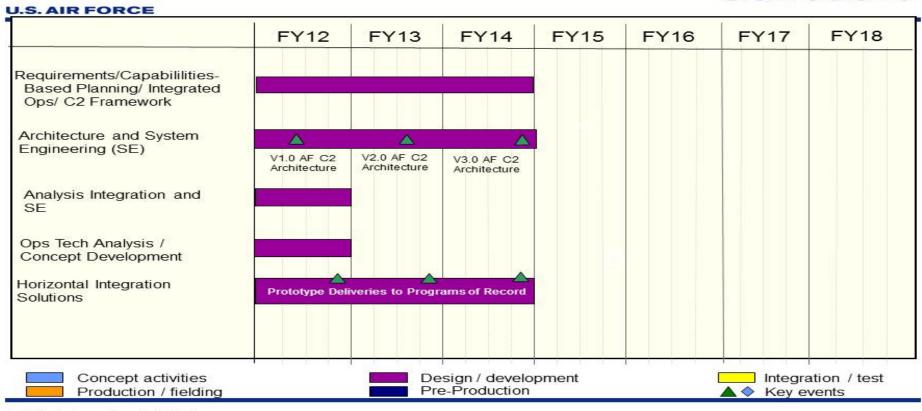
Constellation

PROJECT

675078: Horizontal Integration



Horizontal Integration (HI) Schedule



FY14 Staffer Brief

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE PROJECT

3600: Research, Development, Test & Evaluation, Air Force PE 0207449F: Command and Control (C2) 675078: Horizontal Integration

BA 7: Operational Systems Development Constellation

Schedule Details

	St	art	E	nd
Events	Quarter	Year	Quarter	Year
Requirements/Capability Based Planning/Integrated Ops/C2 Framework	1	2012	4	2014
Architecture and Systems Engineering (Arch and SE)	1	2012	4	2014
Analysis Integration and Systems Engineering	1	2012	4	2012
Ops-Tech Analysis and Concept Development	1	2012	4	2012
Horizontal Integration (HI) Solutions	1	2012	4	2014

PE 0207449F: Command and Control (C2) Constellation

Air Force

Exhibit R-2A, RDT&E Project J	lustification	: PB 2014 <i>P</i>	Air Force							DATE : Apı	ril 2013	
APPROPRIATION/BUDGET AC 3600: Research, Development, BA 7: Operational Systems Deve	Test & Evalu	ation, Air Fo	orce			NOMENCLA 19F: Comma ion		ntrol (C2)	PROJECT 675140: Jo Experimen	oint Expedit	ionary Force	e
COST (\$ in Millions)	All Prior Years		FY 2013 [#]	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
675140: Joint Expeditionary Force Experiments	-	8.949	9.609	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	18.558
Quantity of RDT&F Articles		0	0	0		0	0	0	0	0		

^{*}FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

Note

In FY 2013, Project 675140, Joint Expeditionary Force Experiments, was terminated in order to meet higher Air Force priorities.

A. Mission Description and Budget Item Justification

The Joint Expeditionary Force Experiments (JEFX) and supporting Limited Objective Experiments (LOEs) are warfighter integration and validation experiments that address operational challenges and are part of the Air Force (AF) command and control (C2) integration and experimentation enterprise. Activities include: evaluation of innovative solutions for C2 aspects of the AF integrated air and missile defense (IAMD) mission, Anti-Access/Area Denial (A2/AD) threats, dynamic aerial layer networking, 5th to 4th generation aircraft and 5th to 5th generation aircraft disparate tactical datalink (TDL) data translation capabilities Non-Traditional ISR (NTISR), Airspace Integration, Unit Level Agile Combat Support communication processes, as well as C2 Integration and Modernization for existing AF programs of record. JEFX provides continued integration and experimentation efforts across the AF C2 seams and programs in air, space and cyber domains as defined by CORONA, HQ AF, and the AF Command and Control Integration Center (AFC2IC).

JEFX/LOE activities explore significant capability gaps across the range of Air Force command and control (C2) by means of assessing Concept of Operations (CONOPS), tactics, techniques and procedures (TTPs) and materiel solutions. The activities address critical lessons learned from recent operations and the validated requirements described in the 2012 Air Force, Joint and Defense Strategies and Operational Concepts, the AF Core Function Master Plans (CFMP) and supported through MAJCOM Core Function Lead Integrator (CFLI). JEFX creates or leverages operationally representative-experiment enterprise warfighter environments to address joint and coalition warfighter gaps and shortfalls that demonstrate existing and emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power for the joint force commander and enable innovation and transformation. These unique missions are the major reason JEFX is an experiment and not simply a demonstration or exercise. Activities also include studies and analyses to support current program planning and execution, as well as future program planning.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
Title: Requirements Identification and SE	1.927	2.159	0.000

PE 0207449F: Command and Control (C2) Constellation

Air Force

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^{##} The FY 2014 OCO Request will be submitted at a later date

Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE:	April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	PE 0207449F: Command and Control (C2)	PROJECT 675140: Joint Expe Experiments	:e	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Description: Spiral develop systems architecture, systems engineer systems process	ing, and integration of initiatives into a cohesive system of	f		
FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs foodirection: 1) Lack AF-wide IAMD knowledge and emphasis on strated deficiencies; 3) Lack exercise, experimentation & wargame oversight systems lack integration with joint partners. To address these issues technology, and process initiatives into the AOC weapons system with capabilities. Initiated air sea battle concept as relevant operational so	gic to tactical; 2) Significant C-NAF organization & persor t & fidelity; and 4) Obsolete C2 radars / sensors and C2 , JEFX initiated integration of the BMD systems, other th the goal of full integration into the joint counter air miss			
FY 2013 Plans: Continue integration and experimentation across Air Force (AF) C2 s defined by CORONA, HAF, and AFC2IC. JEFX 2013 (JEFX 13) com and begins providing some support for dynamic aerial layer networki (NTISR) and other C2 integration/modernization activities to include and LOEs focusing on the integration of C2 services. Requirements connecting warfighter needs to initiative identification. The experiment technical assessment feeding final experimentation products.	pletes Integrated Air and Missile Defense (IAMD) efforts ng, non-traditional intelligence, surveillance, reconnaissa requirements identification, systems engineering of initiat validation established in MAJCOM-directed CFMP proces	ves sses		
FY 2014 Plans: N/A				
Title: Plan and Design		2.193	2.610	0.000
Description: Plan, design, coordinate, assess and report the JEFX e acquisition, program management, communications and systems plants		ion,		
FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs foodirection: 1) Lack AF-wide IAMD knowledge and emphasis on strated deficiencies; 3) Lack exercise, experimentation & wargame oversight	gic to tactical; 2) Significant C-NAF organization & persor	nel		

PE 0207449F: Command and Control (C2) Constellation Air Force

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE	April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	PROPRIES ACTIVITY R-1 ITEM NOMENCLATURE PE 0207449F: Command and Control (C2) PE 0207449F: Command and Control (C2)					
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014		
technology, and process initiatives into the AOC Weapons System with the goa capabilities. Initiated air sea battle concept as relevant operational scenario for		ssion				
FY 2013 Plans: Developing internally-generated, stand-alone events employing simulation facil for C2 aspects of the AF Integrated Air and Missile Defense (IAMD) mission, Ar aerial layer networking, 5th to 4th generation aircraft and 5th to 5th generation translation capabilities NTISR, airspace integration, unit level agile combat supintegration and modernization for existing AF programs of record. Leverages A AGILE Fire, Trident Warrior, etc.) when and where feasible.	nti-Access/Area Denial (A2/AD) threats, dynar aircraft disparate tactical datalink (TDL) data port communication processes, as well as C2	mic				
FY 2014 Plans: N/A						
Title: Develop Initiatives		2.281	2.197	0.000		
Description: Develop initiatives to introduce new technologies and operational Force (AEF) Concept of Operations (CONOPS)	capabilities into the Aerospace Expeditionary	,				
FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs focused on the direction: 1) Lack AF-wide IAMD knowledge and emphasis on strategic to tactic deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; systems lack integration with joint partners. To address these issues, JEFX inititechnology, and process initiatives into the AOC weapons system with the goal capabilities. Initiated air sea battle concept as relevant operational scenario for	cal; 2) Significant C-NAF organization & perso and 4) Obsolete C2 radars/sensors and C2 iated integration of the BMD systems, other of full integration into the joint counter air mis	nnel				
FY 2013 Plans: Leveraging existing government and commercial technologies that address a s developed by the HI portion of this program with specific interest in operational experiments supporting the programs of record by integrating incremental prog program selection, and field integration and other transition efforts.	and/or technical utility. Their requirements dri	ve				
FY 2014 Plans:						
N/A Title: Define and Build Events		2.209	2.057	0.000		
True. Define and Dulid Events		2.208	2.007	0.00		

PE 0207449F: Command and Control (C2) Constellation Air Force

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force			DATE:	April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207449F: Command and Control (C2) Constellation	JRE PROJECT					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2012	FY 2013	FY 2014		
Description: Implement architectural configuration, conduct M&S, insthe experiment.	stall and test the communications infrastructure and exe	ecute					
FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs focudirection: 1) Lack AF-wide IAMD knowledge and emphasis on strateg deficiencies; 3) Lack exercise, experimentation & wargame oversight systems lack integration with joint partners. To address these issues, technology, and process initiatives into the AOC weapons system wit capabilities. Initiated the air sea battle concept as the relevant operations.	gic to tactical; 2) Significant C-NAF organization & persor & fidelity; and 4) Obsolete C2 radars / sensors and C2 JEFX initiated integration of the BMD systems, other h the goal of full integration into the joint counter air mis	onnel					
FY 2013 Plans: Migrating JEFX program from a major venue to a series of LOE venuengineering. Combining initiatives with Air Force and joint sponsored							
FY 2014 Plans: N/A							
Title: Assessment and Transition			0.100	0.120	0.000		
Description: Transition successful JEFX-assessed, and Air Force ap C2 baseline.	oproved, warfighting capabilities for fielding into an integ	grated					
FY 2012 Accomplishments: Continued support for plan and design activities. The JEFX 2012 LO 2009 direction: 1) Lack AF-wide IAMD knowledge and emphasis on spersonnel deficiencies; 3) Lack exercise, experimentation & wargame and C2 systems lack integration with joint partners. To address these technology, and processed initiatives into the AOC weapons system capabilities. Initiated the air sea battle concept as relevant operational	strategic to tactical; 2) Significant C-NAF organization & e oversight & fidelity; and 4) Obsolete C2 radars/sensor issues, JEFX initiated integrated BMD systems, other that allowed the integration into the joint counter air mis	s					
FY 2013 Plans: Continuing program transition under the JEFX Limited Objective Experimental and technical assessments.							
FY 2014 Plans:							
		1	'	1			

PE 0207449F: Command and Control (C2) Constellation Air Force

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE:	April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207449F: Command and Control (C2) Constellation		editionary For	ce
B. Accomplishments/Planned Programs (\$ in Millions) N/A		FY 2012	FY 2013	FY 2014
Title: Program Management Administration (PMA)		0.239	0.466	0.000

Description: Program Management Administration costs support management with engineering and technical for development

FY 2012 Accomplishments:

Supported the acquisition program with engineering and technical support.

FY 2013 Plans:

and implementation.

Continue to support the acquisition program with engineering and technical support.

FY 2014 Plans:

N/A

Accomplishments/Planned Programs Subtotals 8.949 9.609 0.000

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

N/A

Remarks

D. Acquisition Strategy

JEFX supports evolutionary acquisition of multiple programs by providing venues and initiatives to experiment new and emerging technologies to be integrated into other systems-of-record. All contracts awarded through full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

PE 0207449F: Command and Control (C2) Constellation

Air Force

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207449F: Command and Control (C2)

Constellation

DATE: April 2013
PROJECT

675140: Joint Expeditionary Force

Experiments

Product Development (\$ in Millions)			FY 2	2012	FY 2013		FY 2014 Base				-		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract	
Requirements Identification and SE	C/CPAF	MITRE:Hanscom AFB, MA	-	0.518	Oct 2011	0.854	Oct 2012	0.000		-		0.000	0.000	1.372	ТВІ	
Requirements Identification and SE (1)	C/Various	Various:Hanscom AFB, MA	-	0.051	Nov 2011	0.061	Oct 2012	0.000		-		0.000	0.000	0.112	ТВІ	
Requirements Identification and SE (2)	C/CPFF	Spectrum:Rome, NY	-	1.358	Nov 2011	1.244	Oct 2012	0.000		-		0.000	0.000	2.602	ТВІ	
Plan and Design	C/CPAF	MITRE:Hanscom AFB, MA	-	0.300	Nov 2011	0.350	Oct 2012	0.000		-		0.000	0.000	0.650	ТВІ	
Plan and Design (1)	C/Various	Various:Hanscom AFB, MA	-	0.050	Nov 2011	0.060	Oct 2012	0.000		-		0.000	0.000	0.110	ТВІ	
Plan and Design (2)	C/CPAF	L-3 Services:Hurlburt Field, FL	-	1.843	Nov 2011	2.200	Oct 2012	0.000		-		0.000	0.000	4.043	ТВІ	
Develop Initiatives	C/Various	Various:Hanscom AFB, MA	-	0.639	Nov 2011	0.743	Oct 2012	0.000		-		0.000	0.000	1.382	ТВІ	
Develop Initiatives (1)	C/CPFF	Northrup Grumman:Rome, NY	-	1.367	Oct 2011	1.202	Nov 2012	0.000		-		0.000	0.000	2.569	ТВГ	
Develop Initiatives (2)	C/CPFF	SAIC:San Diego, CA	-	0.275	Oct 2011	0.252	Nov 2012	0.000		-		0.000	0.000	0.527	TBI	
Define and Build Events	C/CPAF	MITRE:Hanscom AFB, MA	-	0.150	Nov 2011	0.170	Oct 2012	0.000		-		0.000	0.000	0.320	ТВС	
Define and Build Events (1)	C/Various	Various:Hanscom AFB, MA	-	0.180	Oct 2011	0.215	Oct 2012	0.000		-		0.000	0.000	0.395	ТВС	
Define and Build Events (2)	MIPR	98 RANWG:Nellis AFB, NV	-	0.125	Oct 2011	0.115	Oct 2012	0.000		-		0.000	0.000	0.240	ТВГ	
Define and Build Events (3)	C/CPFF	Northrup Grumman:Rome, NY	-	1.504	Oct 2011	1.328	Oct 2012	0.000		-		0.000	0.000	2.832	ТВІ	
Define and Build Events (4)	MIPR	46TS:Eglin AFB, FL	-	0.250	Nov 2011	0.229	Oct 2012	0.000		-		0.000	0.000	0.479	ТВГ	
Assessment and Transition	C/CPAF	MITRE:Hanscom AFB, MA	-	0.050	Nov 2011	0.060	Nov 2012	0.000		-		0.000	0.000	0.110	ТВГ	
Assessment and Transition (1)	C/Various	Various:Hanscom AFB, MA	-	0.050	Oct 2011	0.060	Oct 2012	0.000		-		0.000	0.000	0.110	ТВГ	
		Subtotal	0.000	8.710		9.143		0.000		0.000		0.000	0.000	17.853		

PE 0207449F: Command and Control (C2) Constellation Air Force

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force DATE: April 2013 APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE PROJECT** 3600: Research, Development, Test & Evaluation, Air Force PE 0207449F: Command and Control (C2) 675140: Joint Expeditionary Force BA 7: Operational Systems Development Constellation **Experiments** FY 2014 FY 2014 FY 2014 Support (\$ in Millions) FY 2012 oco FY 2013 Base Total Contract Target Method Performing All Prior Award Award Award Award **Cost To** Total Value of **Cost Category Item** & Type **Activity & Location** Years Cost Date Date Cost Date Cost Date Complete Contract Cost Cost Cost Subtotal 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 FY 2014 FY 2014 FY 2014 Test and Evaluation (\$ in Millions) FY 2012 FY 2013 Base oco Total Contract Target **Cost To** Method Performing All Prior Award Award Award Award Total Value of & Type **Activity & Location** Cost Cost Cost Contract **Cost Category Item** Years Date Cost Date **Date** Date Cost Complete Cost 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 Subtotal FY 2014 FY 2014 FY 2014 Management Services (\$ in Millions) FY 2012 FY 2013 oco Base Total Contract Target Method Performing All Prior **Cost To** Value of Award Award Award Award **Total** Date Cost Contract **Cost Category Item** & Type Activity & Location Years Cost Cost Date Cost **Date** Date Cost Complete Cost Quantech **Experiment Support** C/FFP PASS:Hanscom 0.239 Jan 2012 0.285 Jan 2013 0.000 0.000 0.000 0.524 TBD AFB MA Various:Hanscom 0.000 0.181 Jan 2013 0.000 0.000 0.000 0.181 TBD Experiment Support (1) Various AFB. MA 0.239 Subtotal 0.000 0.466 0.000 0.000 0.000 0.000 0.705 Target All Prior FY 2014 FY 2014 FY 2014 **Cost To** Total Value of FY 2013 Years FY 2012 Base oco Total Complete Cost Contract 0.000 **Project Cost Totals** 0.000 8.949 9.609 0.000 0.000 0.000 18.558 Remarks

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PE 0207449F: Command and Control (C2) Constellation

Air Force

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0207449F: Command and Control (C2)

Constellation

PROJECT

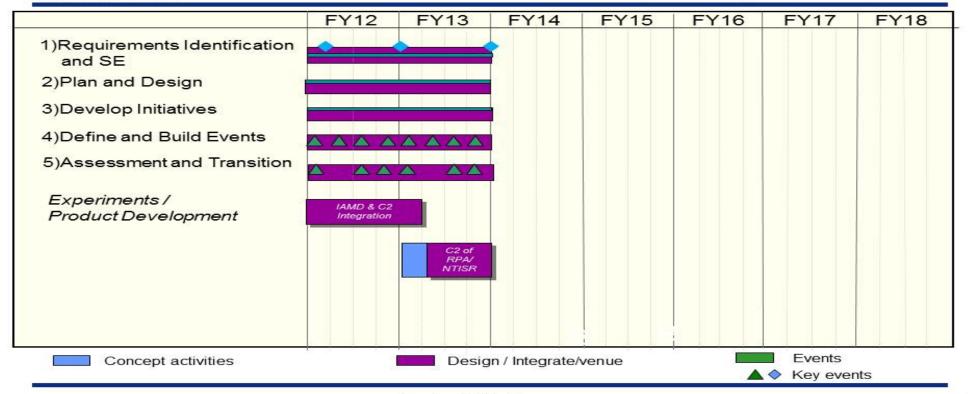
675140: Joint Expeditionary Force

DATE: April 2013

Experiments



C2 Constellation Joint Expeditionary Force Experiment (JEFX) Schedule



Current as of: 25 Jan 13

DATE: April 2013 Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force

APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENCLATURE **PROJECT**

3600: Research, Development, Test & Evaluation, Air Force PE 0207449F: Command and Control (C2) 675140: Joint Expeditionary Force BA 7: Operational Systems Development Constellation

Experiments

Schedule Details

	St	art	End		
Events	Quarter	Year	Quarter	Year	
Requirements Identification and System Engineering	1	2012	4	2013	
Plan and Design	1	2012	4	2013	
Develop Initiatives	1	2012	4	2013	
Define and Build Events	1	2012	4	2013	
Assessment and Transition	1	2012	4	2013	
Experiments/Product Development	1	2012	4	2013	

PE 0207449F: Command and Control (C2) Constellation Air Force

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