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

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>					PE 0207449F: <i>Command and Control (C2) Constellation</i>							
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: <i>Horizontal Integration</i>	-	11.126	8.477	7.329	-	7.329	0.000	0.000	0.000	0.000	0.000	26.932
675140: <i>Joint Expeditionary Force Experiments</i>	-	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

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

Note

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

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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*

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.

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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				PROJECT 675078: Horizontal Integration			
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												
## The FY 2014 OCO Request will be submitted at a later date												
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.												

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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.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Title: Reqmts/ CBP/ Integrated Ops/ C2 Framework		2.700	2.000	2.006
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		1.900	2.596	1.605
Description: Architecture Development and Systems Engineering				
FY 2012 Accomplishments:				

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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		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Continued technical expertise support of functional and engineering analyses within the C2 community. Specific emphasis was on air-ground modernization and C2 of ISR Integration. FY 2013 Plans: Continue functional and systems engineering analysis within the C2 community to flesh out technical architectures and their relationships to operational architectures within the warfighting environment. Specific focus areas and efforts depend on real world needs, C2 enterprise and C2 of cyber requirements with emphasis on airspace and C2 integration, NTISR, C2 of AFFOR, IAMD, 5th - 4th Generation Fighter Interoperability, Dynamic Aerial Networks, C2 of personnel recovery, and air-sea battle. FY 2014 Plans: Will continue functional and systems engineering analyses within the C2 community to flesh out technical architectures and their relationships to operational architectures within the warfighting environment. Specific focus areas and efforts will depend on real world needs, C2 enterprise and C2 of cyber requirements, with emphasis on airspace and C2 integration, NTISR, C2 of AFFOR, IAMD, 5th - 4th Generation Fighter Interoperability, Dynamic Aerial Networks, C2 of personnel recovery, and air-sea battle.				
Title: Analysis Integ and SE Description: Analysis Integration and Systems Engineering FY 2012 Accomplishments: Completed analysis and integration efforts. Specific focus areas were tailored to real world needs, the C2 enterprise, and C2 of cyber requirements. Completed the analysis and transition of prototype capability developed in previous years. FY 2013 Plans: [This effort incorporated into other efforts.] FY 2014 Plans: [This effort incorporated into other efforts.]		0.212	0.000	0.000
Title: Ops-Tech Analysis-Concept Dev't Description: Ops/Tech Analysis and Concept Development FY 2012 Accomplishments: Completed the modernization of the Command and Control (C2) programs. Enabled a collaborative integrated operating environment (IOE) to present, plan, and execute AF capabilities in support of joint operations. Improved and completed real time information exchange through the planning and execution phases. FY 2013 Plans:		1.151	0.000	0.000

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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		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
[This effort incorporated into other efforts.]				
FY 2014 Plans: [This effort incorporated into other efforts.]				
Title: HI Solutions Assessments Description: Horizontal Integration Solutions Assessment FY 2012 Accomplishments: Continued the selection of HI initiatives for execution that fostered enterprise integration across C2 and C2 of cyber programs and supported the DoDI 5000.02 requirement for competitive prototyping. After candidates were solicited, the submissions were evaluated, and the selected initiatives were funded for execution. FY 2013 Plans: Continue to conduct annual selection of HI initiatives for new execution or continuation that will: a. foster enterprise integration across C2 and extend an IOE, b. support the DoDI 5000.02 requirements for competitive prototyping and c. aid in refining requirements. Key criteria are near-term warfighter impact and likelihood of transition. Potential initiatives will be evaluated and the selected initiatives will be funded for execution. FY 2014 Plans: Will continue to conduct an annual selection of HI initiatives for new execution or continuation that will: a. foster enterprise integration across C2 and extend an IOE, b. support the DoDI 5000.02 requirements for competitive prototyping and c. aid in refining requirements. Key criteria will continue to be near-term warfighter impact and likelihood of transition. Potential initiatives will be evaluated, and the selected initiatives will be funded for execution.		4.816	3.299	3.119
Title: Program Management Administration (PMA) Description: Program Support Administration costs support management with engineering and technical for development and implementation FY 2012 Accomplishments: Supported the acquisition program with engineering and technical support. FY 2013 Plans: Continue to support the acquisition program with engineering and technical support. FY 2014 Plans:		0.347	0.582	0.599

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207449F: <i>Command and Control (C2)</i> <i>Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013
Will continue to support the acquisition program with engineering and technical support.			
Accomplishments/Planned Programs Subtotals		11.126	8.477
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.			

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Exhibit R-3, RDT&E Project Cost Analysis: 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					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
Subtotal			0.000	10.332		7.895		6.730		0.000		6.730	0.000	24.957	

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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 BA 7: Operational Systems Development							PE 0207449F: Command and Control (C2) Constellation				675078: Horizontal Integration				
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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
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	
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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
Program Management Support/PMA-1	C/FFP	Quantech PASS:Hanscom AFB, MA	-	0.247	Jan 2012	0.247	Jan 2013	0.248	Jan 2014	-		0.248	0.000	0.742	TBD
Program Management Support/PMA-2	C/FFP	Jacobs ETASS:Hanscom AFB, MA	-	0.100	Jan 2012	0.100	Jan 2013	0.100	Jan 2014	-		0.100	0.000	0.300	TBD
Program Management Support/PMA-3	Various	Various:Hanscom AFB, MA	-	0.000		0.235	Jan 2013	0.251	Jan 2014	-		0.251	0.000	0.486	TBD
Subtotal			0.000	0.347		0.582		0.599		0.000		0.599	0.000	1.528	
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	11.126		8.477		7.329		0.000		7.329	0.000	26.932	
Remarks															

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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

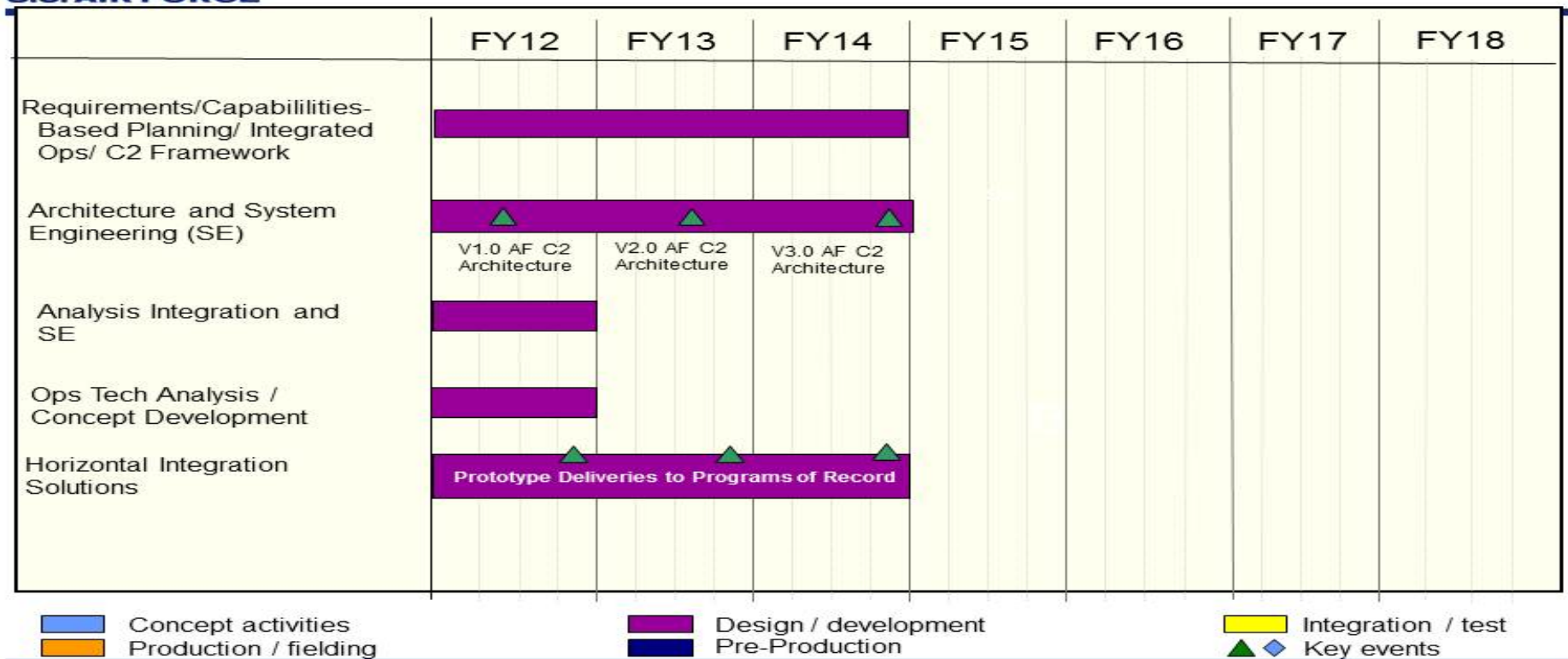
PROJECT

675078: Horizontal Integration



U.S. AIR FORCE

Horizontal Integration (HI) Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>Command and Control (C2)</i> <i>Constellation</i>	PROJECT 675078: <i>Horizontal Integration</i>	

Schedule Details

Events	Start		End	
	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

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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
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&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
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

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>Command and Control (C2) Constellation</i>	PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013
Description: Spiral develop systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems process FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs focused on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge and emphasis on strategic to tactical; 2) Significant C-NAF organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars / sensors and C2 systems lack integration with joint partners. To address these issues, JEFX initiated integration of the BMD systems, other technology, and process initiatives into the AOC weapons system with the goal of full integration into the joint counter air mission capabilities. Initiated air sea battle concept as relevant operational scenario for JEFX 12. FY 2013 Plans: Continue integration and experimentation across Air Force (AF) C2 seams and programs in air, space and cyber domains as defined by CORONA, HAF, and AFC2IC. JEFX 2013 (JEFX 13) completes Integrated Air and Missile Defense (IAMD) efforts and begins providing some support for dynamic aerial layer networking, non-traditional intelligence, surveillance, reconnaissance (NTISR) and other C2 integration/modernization activities to include requirements identification, systems engineering of initiatives and LOEs focusing on the integration of C2 services. Requirements validation established in MAJCOM-directed CFMP processes connecting warfighter needs to initiative identification. The experimentation team will perform either an operational utility and/or a technical assessment feeding final experimentation products. FY 2014 Plans: N/A			
Title: Plan and Design Description: Plan, design, coordinate, assess and report the JEFX experiments, provide expertise to support initiative selection, acquisition, program management, communications and systems planning. FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs focused on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge and emphasis on strategic to tactical; 2) Significant C-NAF organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars/sensors and C2 systems lack integration with joint partners. To address these issues, JEFX initiated integration of the BMD systems, other		2.193	2.610
			0.000

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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	PROJECT 675140: Joint Expeditionary Force Experiments		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
technology, and process initiatives into the AOC Weapons System with the goal of full integration into the joint counter air mission capabilities. Initiated air sea battle concept as relevant operational scenario for JEFX 12.				
FY 2013 Plans: Developing internally-generated, stand-alone events employing simulation facilities, as necessary. Evaluating 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 NTISR, airspace integration, unit level agile combat support communication processes, as well as C2 integration and modernization for existing AF programs of record. Leverages AF and joint sponsored experimentation events (i.e. AGILE Fire, Trident Warrior, etc.) when and where feasible.				
FY 2014 Plans: N/A				
Title: Develop Initiatives		2.281	2.197	0.000
Description: Develop initiatives to introduce new technologies and operational capabilities into the Aerospace Expeditionary Force (AEF) Concept of Operations (CONOPS)				
FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs focused on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge and emphasis on strategic to tactical; 2) Significant C-NAF organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars/sensors and C2 systems lack integration with joint partners. To address these issues, JEFX initiated integration of the BMD systems, other technology, and process initiatives into the AOC weapons system with the goal of full integration into the joint counter air mission capabilities. Initiated air sea battle concept as relevant operational scenario for JEFX 12.				
FY 2013 Plans: Leveraging existing government and commercial technologies that address a specific integration shortfall. These initiatives are developed by the HI portion of this program with specific interest in operational and/or technical utility. Their requirements drive experiments supporting the programs of record by integrating incremental program improvements, select candidates for upcoming program selection, and field integration and other transition efforts.				
FY 2014 Plans: N/A				
Title: Define and Build Events		2.209	2.057	0.000

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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	PROJECT 675140: Joint Expeditionary Force Experiments		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Description: Implement architectural configuration, conduct M&S, install and test the communications infrastructure and execute the experiment. FY 2012 Accomplishments: Continued support for plan and design activities. JEFX 12 LOEs focused on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge and emphasis on strategic to tactical; 2) Significant C-NAF organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars / sensors and C2 systems lack integration with joint partners. To address these issues, JEFX initiated integration of the BMD systems, other technology, and process initiatives into the AOC weapons system with the goal of full integration into the joint counter air mission capabilities. Initiated the air sea battle concept as the relevant operational scenario for JEFX 12. FY 2013 Plans: Migrating JEFX program from a major venue to a series of LOE venues with focus on initiative integration and systems engineering. Combining initiatives with Air Force and joint sponsored events. FY 2014 Plans: N/A				
Title: Assessment and Transition Description: Transition successful JEFX-assessed, and Air Force approved, warfighting capabilities for fielding into an integrated C2 baseline. FY 2012 Accomplishments: Continued support for plan and design activities. The JEFX 2012 LOEs focused on the four issues outlined per CORONA Fall 2009 direction: 1) Lack AF-wide IAMD knowledge and emphasis on strategic to tactical; 2) Significant C-NAF organization & personnel deficiencies; 3) Lack exercise, experimentation & wargame oversight & fidelity; and 4) Obsolete C2 radars/sensors and C2 systems lack integration with joint partners. To address these issues, JEFX initiated integrated BMD systems, other technology, and processed initiatives into the AOC weapons system that allowed the integration into the joint counter air mission capabilities. Initiated the air sea battle concept as relevant operational scenario for JEFX 12. FY 2013 Plans: Continuing program transition under the JEFX Limited Objective Experiments (LOEs) from a long-lead plan to a near-term transition with the Programs of Record or initiative sponsor. Focusing upon the initiative's transition with validation through operational and technical assessments. FY 2014 Plans:		0.100	0.120	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0207449F: <i>Command and Control (C2) Constellation</i>	PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013
N/A			
Title: Program Management Administration (PMA) Description: Program Management Administration costs support management with engineering and technical for development and implementation. FY 2012 Accomplishments: Supported the acquisition program with engineering and technical support. FY 2013 Plans: Continue to support the acquisition program with engineering and technical support. FY 2014 Plans: N/A		0.239	0.466
Accomplishments/Planned Programs Subtotals		8.949	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.			

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Exhibit R-3, RDT&E Project Cost Analysis: 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 675140: Joint Expeditionary Force Experiments					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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 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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
Develop Initiatives	C/Various	Various:Hanscom AFB, MA	-	0.639	Nov 2011	0.743	Oct 2012	0.000		-		0.000	0.000	1.382	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
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	TBD
Subtotal			0.000	8.710		9.143		0.000		0.000		0.000	0.000	17.853	

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Exhibit R-3, RDT&E Project Cost Analysis: 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 675140: Joint Expeditionary Force Experiments			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		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
Experiment Support	C/FFP	Quantech PASS:Hanscom AFB, MA	-	0.239	Jan 2012	0.285	Jan 2013	0.000		-		0.000	0.000	0.524	TBD
Experiment Support (1)	Various	Various:Hanscom AFB, MA	-	0.000		0.181	Jan 2013	0.000		-		0.000	0.000	0.181	TBD
Subtotal			0.000	0.239		0.466		0.000		0.000		0.000	0.000	0.705	
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	8.949		9.609		0.000		0.000		0.000	0.000	18.558	
Remarks															

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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

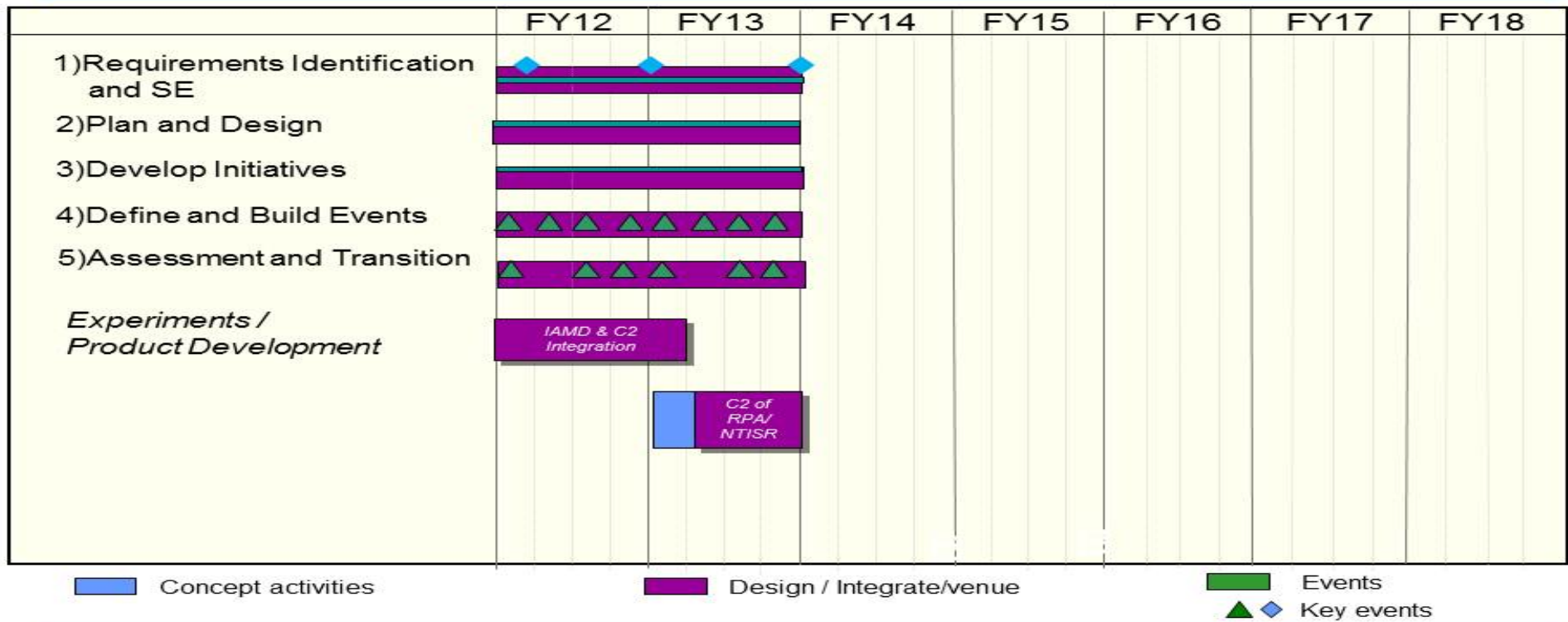
PE 0207449F: Command and Control (C2)
Constellation

PROJECT

675140: Joint Expeditionary Force
Experiments



C2 Constellation Joint Expeditionary Force Experiment (JEFX) Schedule



Current as of: 25 Jan 13

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207449F: <i>Command and Control (C2) Constellation</i>	PROJECT 675140: <i>Joint Expeditionary Force Experiments</i>	

Schedule Details

Events	Start		End	
	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