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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force										Date: March 2014		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0302015F I E-4B National Airborne Operations Center (NAOC)							
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	2.222	13.250	28.778	-	28.778	42.825	28.334	1.824	1.823	Continuing	Continuing
674777: E-4B Aircraft Modernization	-	2.222	13.250	28.778	-	28.778	42.825	28.334	1.824	1.823	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The four (4) aircraft E-4B National Airborne Operations Center (NAOC) fleet satisfy the military need for an airborne operations center with communications capabilities that permit military and civilian leadership to monitor and control military and civil national assets during all phases of nuclear and non-nuclear conflict or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS).

This Program Element's (PE's) developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the related aircraft operations center facilities, equipment, and communications necessary for the E-4B fleet to execute its mission. Additionally, funds may be used to explore modifications, upgrades, and future systems required to meet evolving mission requirements. Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- The Advanced Extremely High Frequency (AEHF) Compatible Terminal/ Presidential National Voice Conferencing (PNVC) Program integrates externally provided AEHF Compatible Command Post Terminals and PNVC capability onto the E-4B NAOC platform. This integration is necessary to replace the legacy Military Strategic, Tactical and Relay (MILSTAR) terminal, and provide access to protected wideband AEHF satellite networks. PNVC replaces Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place.
- The Low Frequency Transmit System (LFTS) program will replace the current Very Low Frequency/Low Frequency (VLF/LF) Transmit system that is on the E-4B. The current system has been on the E-4B for over 35 years and is past its useful life. This system must be replaced in order to meet existing National Security Presidential Directive (NSPD)-28 requirements and ensure there is constant and consistent connectivity to National Leaders and Forces in real world situations. The transmit system consists of three primary equipment groups: a Receiver/Transmitter group, a Power Amplifier-Coupler (PA-C) group, and a Trailing Wire Antenna (TWA) group.

Activities also include studies and analysis to support both current program planning, execution, and future program planning.

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

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B. Program Change Summary (\$ in Millions)		FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget		4.159	18.267	11.138	-	11.138
Current President's Budget		2.222	13.250	28.778	-	28.778
Total Adjustments		-1.937	-5.017	17.640	-	17.640
• Congressional General Reductions		-0.005	-			
• Congressional Directed Reductions		-	-5.017			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-1.500	-			
• SBIR/STTR Transfer		-0.118	-			
• Other Adjustments		-0.314	-	17.640	-	17.640
Change Summary Explanation						
FY13 reductions in Other Adjustments was due to Sequestration.						
FY15 reduction due to the rephasing of the Low Frequency Transmit System (LFTS) effort.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2013	FY 2014	FY 2015
Title: Advanced Extremely High Frequency (AEHF) Compatible Terminal/PNVC				2.222	0.677	1.700
Description: Integrate AEHF Compatible Terminal/PNVC capability onto the E-4B NAOC Platform, to replace the existing MILSTAR SECN system.						
FY 2013 Accomplishments: Supported communication with Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program office to coordinate on terminal delivery schedule and technical expectations. Terminal delivery anticipated in FY16, and FY13 funds support significant engineering planning activities required to integrate the FAB-T capability onto the E-4B NAOC.						
FY 2014 Plans: E-4B Program Office engineering activities necessary for the integration of the AEHF Terminal/PNVC Capability onto an airborne platform. Specific activities address technical issues associated with a change in antenna location from the kit design, a modified power amplifier to accomodate the change in antenna location and fire supression system required to install the capability on the platform.						
FY 2015 Plans:						

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C. Accomplishments/Planned Programs (\$ in Millions)								FY 2013	FY 2014	FY 2015	
Continues E-4B Program Office engineering activities necessary for the integration of the AEHF Terminal/PNVC Capability onto an airborne platform. Activities will address hands on modifications to terminal in order to produce proof of concept prototype of the initial integrated solution.											
Title: Low Frequency Transmit System (LFTS)								-	12.573	27.078	
Description: Replaces the the E-4B's legacy Very Low Frequency/Low Frequency (VLF/LF) Transmit System, which is over 35 years old, and is past its useful life. This capability is required to comply with National Security Presidential Directive (NSPD)-28; to ensure there is constant and consistent connectivity to National Leaders and Forces.											
FY 2013 Accomplishments: N/A											
FY 2014 Plans: Activities focused on risk reduction studies prior to development contract award. These studies include RF Antenna Wire Isolation, Antenna Wire Performance, and Power Quality Baseline efforts. FY14 RDT&E funding will be utilized for proposal preparation costs for development contract Requests for Proposal. Development contract award is anticipated in the late third quarter of FY14, thus initial development efforts will begin in late FY14.											
FY 2015 Plans: Continues with full year of design and development efforts, to include non recurring engineering, development parts and labor for a systems integration lab, early prototyping, and some hardware qualification testing. System Requirements Review and Preliminary Design Review.											
Accomplishments/Planned Programs Subtotals								2.222	13.250	28.778	
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # E00400: E-4B Nat Airborne Ops Center (NAOC)	42.454	13.618	21.649	-	21.649	19.536	37.973	37.026	36.888	Continuing	Continuing
• APAF: BA05: Line Item # 833140: Worldwide Joint Strategic Communication	0.674	0.686	0.692	-	0.692	0.706	0.719	0.733	0.746	Continuing	Continuing
Remarks											

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<u>E. Acquisition Strategy</u> Implementation of modifications will be contracted under Tinker's Engineering Support Services (ESS) Contract with Boeing - San Antonio.		
<u>F. Performance Metrics</u> 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-4, RDT&E Schedule Profile: PB 2015 Air Force

Date: March 2014

Appropriation/Budget Activity

3600 / 7

R-1 Program Element (Number/Name)

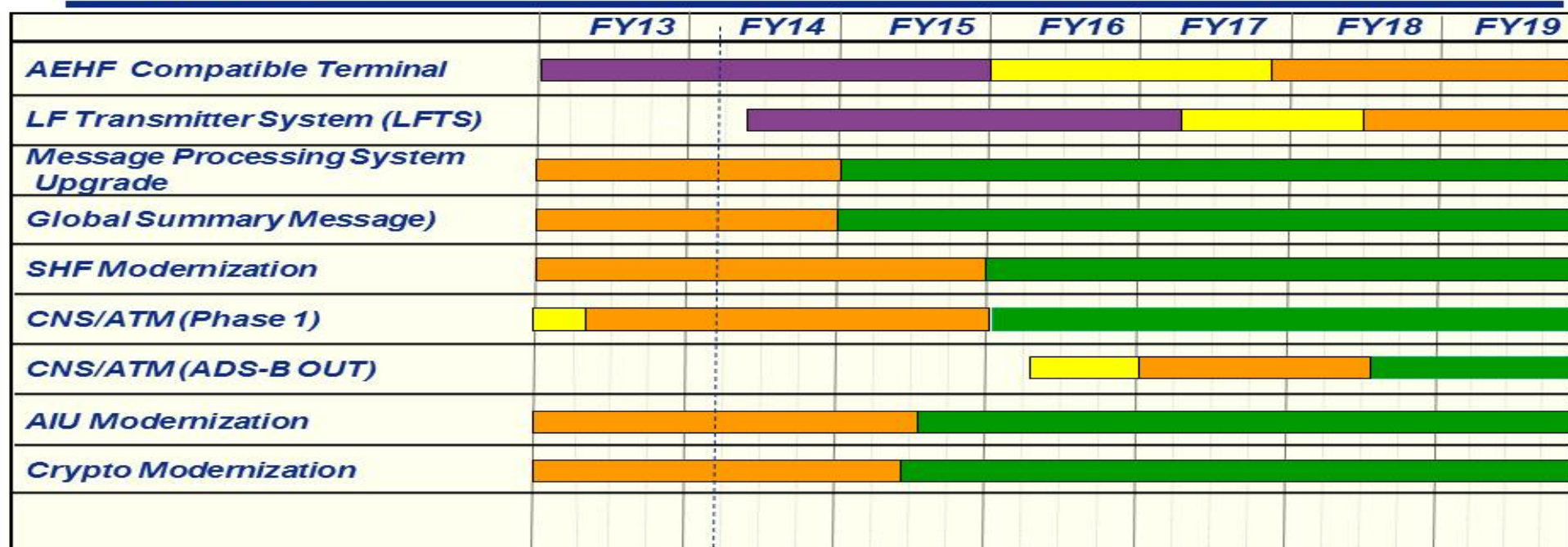
PE 0302015F / E-4B National Airborne
Operations Center (NAOC)

Project (Number/Name)

674777 / E-4B Aircraft Modernization



E-4B NAOC Modification Schedule



Time now

Concept activities
Production / fielding

Design / development
Operations / sustainment

Integration / test
Key events

Integrity - Service - Excellence