

UNCLASSIFIED

| | |
|--|----------------------------|
| Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force | DATE: February 2011 |
|--|----------------------------|

| APPROPRIATION/BUDGET ACTIVITY | | | | R-1 ITEM NOMENCLATURE | | | | | | | |
|--|---------|---------|--------------|--|---------------|---------|---------|---------|---------|------------------|------------|
| 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | | | | PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | | | | | | | |
| COST (\$ in Millions) | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total | FY 2013 | FY 2014 | FY 2015 | FY 2016 | Cost To Complete | Total Cost |
| Total Program Element | 25.219 | 12.532 | 5.845 | - | 5.845 | 25.506 | 9.225 | 5.164 | 9.189 | Continuing | Continuing |
| 674777: <i>E-4B Aircraft Modernization</i> | 16.672 | 12.532 | 5.845 | - | 5.845 | 25.506 | 9.225 | 5.164 | 9.189 | Continuing | Continuing |
| 675301: <i>Next Generation NAOC</i> | 8.547 | - | - | - | - | - | - | - | - | Continuing | Continuing |

A. Mission Description and Budget Item Justification

The four aircraft E-4B National Airborne Operations Center (NAOC) fleet satisfies 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). 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 utilized to explore modifications, upgrades, and future systems required to meet mission requirements.

Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- Electromagnetic Pulse (EMP) testing will be conducted to validate the E-4B fleet compliance with updated EMP protection Mil Standards.
- Continue analysis for a replacement fleet based on the recommendations of the E-4B NAOC Aircraft Replacement AoA. These funds have been used to develop a Technology Development Strategy, Test and Evaluation Strategy, Systems Engineering Plan, Lifecycle Management Plan, Initial Capabilities Document, and other required documents leading up to a Milestone A decision. A number of risk reduction studies, such as a sustainability study and antenna/communications technology study, are also planned.
- The Secure Data Crypto modification replaces various E-4B cryptographic systems currently scheduled to be decertified by the National Security Agency (NSA). This modification ensures the continued transmission and receipt of critical strategic force orders. Funds for this modification will be used to design an engineering solution, develop compatible software, procure new secure data devices, and integrate NSA approved and Internet Protocol Version 6 (IPv6) compliant secure data cryptographic devices and associated peripherals on the aircraft.
- The Super High Frequency (SHF) Multiplexor (MUX) project integrates a more capable and logistically supportable MUX to replace the obsolete and temporary solution used today. The current SHF MUX is prone to intermittent disconnects and poor performance. A new device will allow the E-4B to better meet requirements of transmitting combined secure and non-secure digital data streams via satellite.

UNCLASSIFIED

UNCLASSIFIED

| | |
|--|----------------------------|
| Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force | DATE: February 2011 |
|--|----------------------------|

| | |
|--|--|
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> |
|--|--|

- The Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) efforts upgrades the air traffic communications systems to improve Navigation and Instrument Approach capabilities. These ongoing efforts are required to comply with both U.S. and international air traffic management requirements and maintain world-wide (anytime/anywhere) availability. This effort will add Automatic Dependent Surveillance - Broadcast Out (ADS-B Out) capability, a Mode 5 IFF capability, and a Multi-Mode Receiver for Global Positioning System (GPS) Precision Instrument Approaches and replace the obsolete Flight Management Computer (FMC) and upgrade required systems to meet domestic and foreign CNS/ATM requirements. This is expected to be an on-going program to meet evolving CNS/ATM requirements.

- Secure, Survivable Communication efforts will upgrade and replace existing systems required to meet existing National Security Presidential Directive (NSPD)-28 and NSPD-51/Homeland Security Presidential Directive (HSPD)-20 requirements and to ensure continued connectivity and interoperability as satellite and communications infrastructure evolves. Expected modifications requiring RDT&E include, but are not limited to, installation of Family of Beyond-Line-of-Site Terminals (FAB-T), Presidential National Voice Conferencing (PNVC), modification of the current Super High Frequency (SHF) system to meet immediate needs, and eventual replacement of the SHF System. FAB-T Command Post Terminals will replace the MILSTAR Terminal and provide access to protected wideband Advanced Extremely High Frequency (AEHF) satellite networks. PNVC replaces Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place. Upgrade of the current SHF system is required in the near-term to replace the most critically obsolete components to ensure that the system remains operable and logistically supportable until a replacement system is fielded. A replacement to the SHF system is required as secure, survivable communications capability transitions from the Defense Satellite Communications System (DSCS).

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

| B. Program Change Summary (\$ in Millions) | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 26.107 | 12.532 | 5.762 | - | 5.762 |
| Current President's Budget | 25.219 | 12.532 | 5.845 | - | 5.845 |
| Total Adjustments | -0.888 | - | 0.083 | - | 0.083 |
| • Congressional General Reductions | | - | | | |
| • Congressional Directed Reductions | | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | | - | | | |
| • Congressional Directed Transfers | | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -0.779 | - | | | |
| • Other Adjustments | -0.109 | - | 0.083 | - | 0.083 |

Change Summary Explanation

The change in funding from FY11 to FY12 is due to a reduction in the number of modifications requiring development efforts in FY12 and the conclusion of some development effort during FY11.

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | | | | | | |
|---|---------|---------|-----------------|---|------------------|---------|---------|--|---------------------|---------------------|------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force | | | | | | | | | DATE: February 2011 | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development | | | | R-1 ITEM NOMENCLATURE PE 0302015F: E-4B NATIONAL AIRBORNE OPERATIONS CENTER | | | | PROJECT 674777: E-4B Aircraft Modernization | | | |
| COST (\$ in Millions) | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total | FY 2013 | FY 2014 | FY 2015 | FY 2016 | Cost To Complete | Total Cost |
| 674777: E-4B Aircraft Modernization | 16.672 | 12.532 | 5.845 | - | 5.845 | 25.506 | 9.225 | 5.164 | 9.189 | Continuing | Continuing |
| Quantity of RDT&E Articles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

A. Mission Description and Budget Item Justification

E-4B four aircraft NAOC fleet satisfies 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). 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 utilized to explore modifications, upgrades, and future systems required to meet mission requirements.

Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- Electromagnetic Pulse (EMP) testing will be conducted to validate the E-4B fleet compliance with updated EMP protection Mil Standards.
- The Secure Data Crypto modification replaces various E-4B cryptographic systems currently scheduled to be decertified by the National Security Agency (NSA). This modification ensures the continued transmission and receipt of critical strategic force orders. Funds for this modification will be used to design an engineering solution, develop compatible software, procure new secure data devices, and integrate NSA approved and Internet Protocol Version 6 (IPv6) compliant secure data cryptographic devices and associated peripherals on the aircraft.
- The Super High Frequency (SHF) Multiplexor (MUX) project integrates a more capable and logistically supportable MUX to replace the obsolete and temporary solution used today. The current SHF MUX is prone to intermittent disconnects and poor performance. A new device will allow the E-4B to better meet requirements of transmitting combined secure and non-secure digital data streams via satellite.
- The Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) effort upgrades the air traffic communications systems to improve Navigation and Instrument Approach capabilities. These ongoing efforts are required to comply with both U.S. and international air traffic management requirements and maintain world-wide (anytime/anywhere) availability. This effort will add Automatic Dependent Surveillance - Broadcast Out (ADS-B Out) capability, a Mode 5 IFF capability, and a Multi-Mode Receiver for Global Positioning System (GPS) Precision Instrument Approaches and replace the obsolete Flight Management Computer (FMC) and upgrade required systems to meet domestic and foreign CNS/ATM requirements. This is expected to be an on-going program to meet evolving CNS/ATM requirements.

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | | |
|--|--|--|--|---------|--------------|-------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force | | | DATE: February 2011 | | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development | | R-1 ITEM NOMENCLATURE PE 0302015F: E-4B NATIONAL AIRBORNE OPERATIONS CENTER | PROJECT 674777: E-4B Aircraft Modernization | | | | |
| <p>- Secure, Survivable Communication efforts will upgrade and replace existing systems required to meet existing National Security Presidential Directive (NSPD)-28 and NSPD-51/Homeland Security Presidential Directive (HSPD)-20 requirements and to ensure continued connectivity and interoperability as satellite and communications infrastructure evolves. Expected modifications requiring RDT&E include, but are not limited to, installation of Family of Beyond-Line-of-Site Terminals (FAB-T), Presidential National Voice Conferencing (PNVC), modification of the current Super High Frequency (SHF) system to meet immediate needs, and eventual replacement of the SHF System. FAB-T Command Post Terminals will replace the MILSTAR Terminal and provide access to protected wideband Advanced Extremely High Frequency (AEHF) satellite networks. PNVC replaces Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place. Upgrade of the current SHF system is required in the near-term to replace the most critically obsolete components to ensure that the system remains operable and logistically supportable until a replacement system is fielded. A replacement to the SHF system is required as secure, survivable communications capability transitions from the Defense Satellite Communications System (DSCS).</p> <p>This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.</p> | | | | | | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total |
| <p>Title: EMP Testing</p> <p>Description: Completed EMP Testing to validate compliance with applicable EMP hardness Mil Standards</p> <p>FY 2010 Accomplishments: Completed initial EMP Test at Patuxent River Naval Air Station</p> <p>FY 2011 Plans: Completing EMP Testing on two E-4Bs at Patuxent River Naval Air Station.</p> <p>FY 2012 Base Plans:</p> <p>FY 2012 OCO Plans:</p> | | | 6.000 | 2.000 | - | - | - |
| <p>Title: SHF MUX</p> <p>Description: Develop, install, and test a more capable and logistically supportable Super High Frequency (SHF) Multiplexor (MUX).</p> <p>FY 2010 Accomplishments: Developed SHF MUX replacement prototype</p> <p>FY 2011 Plans:</p> | | | 0.954 | 0.285 | 0.068 | - | 0.068 |

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | |
|---|---|--|---------------------|-----------------|----------------|------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force | | | DATE: February 2011 | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development | R-1 ITEM NOMENCLATURE PE 0302015F: E-4B NATIONAL AIRBORNE OPERATIONS CENTER | PROJECT 674777: E-4B Aircraft Modernization | | | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total |
| Installing and testing prototype SHF MUX replacement. FY 2012 Base Plans: Will install and test prototype SHF MUX replacement. FY 2012 OCO Plans: | | | | | | |
| Title: CNS/ATM Description: Develop, install, and test a prototype installation kit to modernize applicable CNS/ATM systems in accordance with domestic and foreign air traffic management requirements FY 2010 Accomplishments: Developed a CNS/ATM roadmap based on applicable air traffic management requirements. Developed prototype CNS/ATM installation kit. FY 2011 Plans: Prototyping and developing CNS/ATM upgrade/replacement kits. FY 2012 Base Plans: Will prototype and develop CNS/ATM upgrade/replacement kits. FY 2012 OCO Plans: | | 8.918 | 2.747 | 0.300 | - | 0.300 |
| Title: Secure, Survivable Voice Comms Description: Develop, install, and test a prototype installation kit to replace the most critically obsolete components of the current SHF System FY 2010 Accomplishments: FY 2011 Plans: Developing, installing, and testing a prototype installation kit to replace the most critically obsolete components of the current SHF System FY 2012 Base Plans: Will perform technology studies for secure, survivable voice comms capability. FY 2012 OCO Plans: | | - | 7.000 | 4.177 | - | 4.177 |

UNCLASSIFIED

UNCLASSIFIED

| | | | | | |
|--|--|----------------|--|--------------------|----------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force | | | DATE: February 2011 | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | | PROJECT 674777: <i>E-4B Aircraft Modernization</i> | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total |
| Title: Secure Data Crypto Description: Develop, install, and test a prototype installation kit to replace the decertified cryptographic equipment. FY 2010 Accomplishments: FY 2011 Plans: FY 2012 Base Plans: Will develop prototype for the Secure Data Crypto FY 2012 OCO Plans: | - | - | 1.000 | - | 1.000 |
| Title: SPO Support Description: SPO support and travel FY 2010 Accomplishments: Performed SPO support and travel FY 2011 Plans: Completing EMP Testing on two E-4Bs at Patuxent River Naval Air Station FY 2012 Base Plans: Will perform SPO support and travel FY 2012 OCO Plans: | 0.800 | 0.500 | 0.300 | - | 0.300 |
| Accomplishments/Planned Programs Subtotals | 16.672 | 12.532 | 5.845 | - | 5.845 |

UNCLASSIFIED

UNCLASSIFIED

| | | | |
|--|--|--|----------------------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force | | | DATE: February 2011 |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | PROJECT 674777: <i>E-4B Aircraft Modernization</i> | |

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

| <u>Line Item</u> | <u>FY 2010</u> | <u>FY 2011</u> | <u>FY 2012</u> <u>Base</u> | <u>FY 2012</u> <u>OCO</u> | <u>FY 2012</u> <u>Total</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>FY 2016</u> | <u>Cost To</u> <u>Complete</u> | <u>Total Cost</u> |
|---|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • APAF: PE 0302015F: <i>E-4B</i> <i>NAOC</i> | 76.541 | 38.973 | 58.753 | 0.000 | 58.753 | 37.807 | 11.091 | 13.252 | 16.723 | Continuing | Continuing |

D. Acquisition Strategy

Implementation of modifications will be contracted under the sole source Product Support Integration (PSI) with Boeing - Wichita. Patuxent River NAS will be providing EMP test support and execution.

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.

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | | | | | | | | | |
|---|------------------------------|--|------------------------------|---|---------------|-----------------|---------------|--|---------------|------------------|---------------------|------------|--------------------------------|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force | | | | | | | | | | | DATE: February 2011 | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development | | | | R-1 ITEM NOMENCLATURE PE 0302015F: E-4B NATIONAL AIRBORNE OPERATIONS CENTER | | | | PROJECT 674777: E-4B Aircraft Modernization | | | | | | |
| Product Development (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract | |
| Secure Data Crypto | SS/CPIF | Boeing, Wichita Development & Modification Center:Wichita, KS | - | - | | 1.000 | Feb 2012 | - | | 1.000 | Continuing | Continuing | TBD | |
| SHF MUX Upgrade Development and Integration | SS/CPIF | Boeing, Wichita Development & Modification Center:Wichita, KS | 0.954 | 0.285 | | 0.068 | Jan 2012 | - | | 0.068 | 0.000 | 1.307 | 1.307 | |
| CNS/ATM Development and Integration | SS/CPIF | Boeing, Wichita Development & Modification Center:Wichita, KS | 8.918 | 2.747 | | 0.300 | Feb 2012 | - | | 0.300 | Continuing | Continuing | TBD | |
| Secure Survivable Communication | SS/CPIF | Boeing, Wichita Development & Modification Center:Wichita, KS | - | 7.000 | Mar 2011 | 4.477 | Mar 2012 | - | | 4.477 | 0.000 | 11.477 | 11.477 | |
| Subtotal | | | 9.872 | 10.032 | | 5.845 | | - | | 5.845 | | | | |
| Support (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | 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 | |
| Test and Evaluation (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract | |
| EMP Test Support - Boeing | SS/CPIF | Boeing, Wichita Development & Modification Center:Wichita, KS | 4.000 | 1.333 | Mar 2011 | - | | - | | - | 0.000 | 5.333 | 5.333 | |
| EMP Test Support - NAVAIR | MIPR | | 2.000 | 0.667 | Mar 2011 | - | | - | | - | 0.000 | 2.667 | 2.667 | |

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|---|--|--|----------------------------|--|--|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force | | | | | | | | | | | DATE: February 2011 | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development | | | | R-1 ITEM NOMENCLATURE PE 0302015F: E-4B NATIONAL AIRBORNE OPERATIONS CENTER | | | | PROJECT 674777: E-4B Aircraft Modernization | | | | | | |

| Test and Evaluation (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | |
|--------------------------------------|------------------------------|---|------------------------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| | | Naval Air Warfare Center:Patuxent River NAS, MD | | | | | | | | | | | |
| Subtotal | | | 6.000 | 2.000 | | - | | - | | - | 0.000 | 8.000 | 8.000 |

| Management Services (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | |
|---|------------------------------|---|------------------------------|---------|---------------|-----------------|---------------|----------------|---------------|------------------|---------------------|------------|--------------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| E-4B Program Office contractor support | C/Various | Chickasaw Nation Industries, Inc.:Oklahoma City, OK | 0.250 | 0.250 | Mar 2011 | - | | - | | - | Continuing | Continuing | TBD |
| E-4B Program Office Govt TDY/PMA | C/TBD | TBD:TBD, | 0.550 | 0.250 | | - | | - | | - | Continuing | Continuing | TBD |
| Subtotal | | | 0.800 | 0.500 | | - | | - | | - | | | |

| | Total Prior Years Cost | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|------------------------------|---------|--|-----------------|--|----------------|--|------------------|---------------------|------------|--------------------------------|
| Project Cost Totals | 16.672 | 12.532 | | 5.845 | | - | | 5.845 | | | |

Remarks

UNCLASSIFIED

UNCLASSIFIED

| | | |
|---|---|---|
| Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force | | DATE: February 2011 |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | PROJECT 674777: <i>E-4B Aircraft Modernization</i> |
| | | |

UNCLASSIFIED

| | | | |
|--|--|--|----------------------------|
| Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force | | | DATE: February 2011 |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | PROJECT 674777: <i>E-4B Aircraft Modernization</i> | |

Schedule Details

| Events | Start | | End | |
|--|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| EMP Design and Development | 1 | 2010 | 3 | 2010 |
| EMP Integration and Test | 3 | 2010 | 1 | 2012 |
| SHF MUX Integration and Test | 2 | 2010 | 2 | 2012 |
| CNS/ATM Concept Development | 2 | 2010 | 4 | 2010 |
| CNS/ATM Design and Development | 4 | 2010 | 1 | 2012 |
| Secure Data Crypto Integration and Test | 1 | 2012 | 4 | 2012 |
| Secure, Survivable Communications Design and Development | 1 | 2011 | 2 | 2012 |

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | | | | | | | |
|---|---------|---------|--------------|--|---------------|---------|---------|---|---------|------------------|-------------|---------------|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force | | | | | | | | DATE: February 2011 | | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development | | | | R-1 ITEM NOMENCLATURE PE 0302015F: E-4B NATIONAL AIRBORNE OPERATIONS CENTER | | | | PROJECT 675301: Next Generation NAOC | | | | |
| COST (\$ in Millions) | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total | FY 2013 | FY 2014 | FY 2015 | FY 2016 | Cost To Complete | Total Cost | |
| 675301: Next Generation NAOC | 8.547 | - | - | - | - | - | - | - | - | Continuing | Continuing | |
| Quantity of RDT&E Articles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| A. Mission Description and Budget Item Justification | | | | | | | | | | | | |
| The four aircraft E-4B NAOC fleet satisfies 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). | | | | | | | | | | | | |
| The Air Force received RDT&E funds in FY10 to continue analysis for a replacement fleet based on the recommendations of the E-4B NAOC Aircraft Replacement AoA. These funds have been used to develop a Technology Development Strategy, Test and Evaluation Strategy, Systems Engineering Plan, Lifecycle Management Plan, Initial Capabilities Document, and other required documents leading up to a Milestone A decision. A number of risk reduction studies, such as a sustainability study and antenna/communications technology study, are also planned. | | | | | | | | | | | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | | | | | | | FY 2010 | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total |
| Title: Program Acquisition Documentation | | | | | | | | 8.547 | - | - | - | - |
| Description: Develop documentation leading to a Milestone A decision as well as execute a number of risk reduction studies, such as a sustainability study and antenna/communications technology study. | | | | | | | | | | | | |
| FY 2010 Accomplishments: Developed documentation leading to a Milestone A decision as well as execute a number of risk reduction studies, such as a sustainability study and antenna/communications technology study. | | | | | | | | | | | | |
| FY 2011 Plans: | | | | | | | | | | | | |
| FY 2012 Base Plans: | | | | | | | | | | | | |
| FY 2012 OCO Plans: | | | | | | | | | | | | |
| Accomplishments/Planned Programs Subtotals | | | | | | | | 8.547 | - | - | - | - |

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | |
|--|--|--|--|--|--|---|
| Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force | | | | | | DATE: February 2011 |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | | | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | | | PROJECT 675301: <i>Next Generation NAOC</i> |

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

| <u>Line Item</u> | <u>FY 2010</u> | <u>FY 2011</u> | <u>FY 2012</u> | <u>FY 2012</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>FY 2016</u> | <u>Cost To</u> | |
|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-------------------|
| | | | <u>Base</u> | <u>OCO</u> | <u>Total</u> | | | | | <u>Complete</u> | <u>Total Cost</u> |
| • N/A: | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |

D. Acquisition Strategy

Air Force Electronic Systems Center (ESC) is the NAOC Replacement contracting authority for the \$8.5M FY10 RDT&E, AF. The contracts awarded will be firm fixed price (FFP) contracts awarded on a sole source basis. ESC will lead risk reduction and technology exploration studies leading up to a Material Development Decision and Milestone A Decision.

Each study will be supported by contract support with required expertise and may request data and other support from E-4B Product Support Integrator, Boeing Wichita Development & Modification Center.

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.

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | | | | | | | | | |
|---|------------------------------|--|------------------------------|---|---------------|-----------------|---------------|---|---------------|------------------|---------------------|------------|--------------------------------|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force | | | | | | | | | | | DATE: February 2011 | | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development | | | | R-1 ITEM NOMENCLATURE PE 0302015F: E-4B NATIONAL AIRBORNE OPERATIONS CENTER | | | | PROJECT 675301: Next Generation NAOC | | | | | | |
| Product Development (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | 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 | |
| Support (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract | |
| Data and Analytical Support | SS/FFP | Boeing, Wichita Development & Modification Center:Wichita, KS | 0.943 | - | | - | | - | | - | 0.000 | 0.943 | 0.943 | |
| Project Management Support | SS/FFP | Booz Allen Hamilton:McLean, VA | 1.931 | - | | - | | - | | - | Continuing | Continuing | TBD | |
| Subtotal | | | 2.874 | - | | - | | - | | - | | | | |
| Test and Evaluation (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | 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 | |
| Management Services (\$ in Millions) | | | | FY 2011 | | FY 2012 Base | | FY 2012 OCO | | FY 2012 Total | | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract | |
| A&AS Support and Govt TDY | C/TBD | Jacobs Technology, Inc.:Lincoln, MA | 5.673 | - | | - | | - | | - | 0.000 | 5.673 | 5.673 | |
| Subtotal | | | 5.673 | - | | - | | - | | - | 0.000 | 5.673 | 5.673 | |

UNCLASSIFIED

UNCLASSIFIED

| | | | | | | | | | |
|--|-------------------------------|----------------|--|--------------------|----------------------|-------------------------|---|---------------------------------|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force | | | | | | | DATE: February 2011 | | |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | | | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | | | | PROJECT 675301: <i>Next Generation NAOC</i> | | |
| | Total Prior Years Cost | FY 2011 | FY 2012 Base | FY 2012 OCO | FY 2012 Total | Cost To Complete | Total Cost | Target Value of Contract | |
| Project Cost Totals | 8.547 | - | - | - | - | | | | |
| Remarks | | | | | | | | | |

UNCLASSIFIED

| | | |
|---|---|--|
| Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force | | DATE: February 2011 |
| APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i> | R-1 ITEM NOMENCLATURE PE 0302015F: <i>E-4B NATIONAL AIRBORNE OPERATIONS CENTER</i> | PROJECT 675301: <i>Next Generation NAOC</i> |
| | | |

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY

3600: *Research, Development, Test & Evaluation, Air Force*
BA 7: *Operational Systems Development*

R-1 ITEM NOMENCLATURE

PE 0302015F: *E-4B NATIONAL AIRBORNE
OPERATIONS CENTER*

PROJECT

675301: *Next Generation NAOC*

Schedule Details

| Events | Start | | End | |
|-----------------------------|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| Material Solutions Analysis | 1 | 2010 | 2 | 2011 |

UNCLASSIFIED