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| Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force   |                |                  |                       |   |                        |                  |                  |                  | DATE: February 2010 |                  |            |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development |                |                  |                       | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |                        |                  |                  |                  |                     |                  |            |
| COST (\$ in Millions)   | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate  | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate    | Cost To Complete | Total Cost |
| Total Program Element   | 122.425        | 175.514          | 239.755               | 0.000   | 239.755                | 181.718          | 120.660          | 128.852          | 91.118              | Continuing       | Continuing |
| 67411L: Airborne Warning & Control System (AWACS)   | 122.425        | 175.514          | 239.755               | 0.000   | 239.755                | 181.718          | 120.660          | 128.852          | 91.118              | Continuing       | Continuing |

**A. Mission Description and Budget Item Justification**

Mission: AWACS is the premier airborne platform providing command and control (C2)/battle management (BM) to Commander In Chief and combatant commander tasking for Joint, Allied, and Coalition operations, Humanitarian Relief, and Homeland Defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include all-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

Budget Justification: This funding is in Budget Activity 7, Operational Systems Development, since the efforts support a fielded, operational weapon system. This funding will be used to investigate, develop, and integrate system improvements to enable the E-3 AWACS to remain an effective airborne battle management and surveillance system for command and control of combat forces and for strategic defense of the U.S. The efforts will pursue synergies and leverage the efforts of other U.S. 707-based airframes as well as the International AWACS partners that operate the 707 AWACS (NATO, United Kingdom, France, and Saudi Arabia). The efforts will coordinate with and participate in projects developing international standards (including NATO standards) to ensure joint, allied, and coalition interoperability.

This program element funds the following AWACS modernization efforts (RDT&E, AF):

1. Block 40/45 is replacing AWACS 1970's vintage mission systems that are experiencing Diminishing Manufacturing Sources (DMS) issues, are difficult and expensive to upgrade, and limit overall AWACS system performance. The Block 40/45 upgrade will improve integration, quality and timeliness of sensor data to the shooter, improve Combat Identification (CID), improve AWACS contribution to Time Critical Targeting via Data Link Infrastructure (DLI), improve electronic support measures processing and enable more effective, faster upgrades via an open-systems, Ethernet-based architecture. The upgrade will also update the ground support infrastructure including training systems.

Block 40/45 met a Milestone C in FY09 and awarded a contract for the first of six LRIP articles in FY09.

2. The Next Generation Identification Friend or Foe (NGIFF) Program provides AWACS with enhanced IFF interrogator operation to add a more secure Mode 5 capability. NSA declared IFF Mode 4 unsecure and obsolete on 5 Nov 2003. Joint Requirements Oversight Council Memo 047-07 requires IFF Mode 5 interrogation

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| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development  | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |                     |
| capability by FY14. The new Mode 5 interrogation capability extends the effective range of the AWACS interrogator, while helping discriminate against closely spaced cooperative targets.  |   |                     |
| NGIFF will develop and integrate a basic Mode 5 capability on Block 30/35 starting in FY09 and full Mode 5 on Block 40/45 starting in FY10. Hardware will be common between the platforms. NGIFF will also integrate Mode S, a civilian air traffic control capability residing in the NGIFF hardware, as funding allows.  |   |                     |
| 3. Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) completes the FAA/International Civil Aviation Organization (ICAO)/ EUROCONTROL air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. Non-compliance will result in airspace restrictions and denials that will impact AWACS ability to support worldwide responses to situations requiring immediate on-scene command and control (C2) battle management. The DRAGON modifications replace the existing DMS GPS Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode-5 IFF and Joint Mission Planning System (JMPS). Also included as part of the modification is the addition of data link communications, upgrade or replacement of emergency locating technologies, voice and data link digital radios, and improved visual displays. Emphasis on employment of COTS avionics is expected to lower cost, reduce the tech refresh cycle, and enhance life cycle management. Replacement of critical avionics subsystems that will become unsustainable beginning in 2010 are included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is planned to be executed cooperatively between US and NATO. The US and NATO are currently pursuing a cooperative risk reduction effort and working towards award of a cooperative EMD contract in FY11. |   |                     |
| 4. Support the War Fighter (STWF): STWF efforts support AWACS capability to create and sustain the force. Examples of these activities include, but are not limited to: <ul style="list-style-type: none"><li>o Designing, developing, and modernizing equipment and systems to ensure that AWACS can respond to urgent wartime/contingency acquisition requirements (e.g. Urgent Operational Needs (UONs) and Wartime Urgent &amp; Compelling Needs (WUCNs).</li><li>o Upgrading key capabilities to meet contingency needs, modernizing test systems, integrating battle management and data link enhancements, and supporting Reliability, Maintainability, and Availability (RM&amp;A) initiatives which:<ul style="list-style-type: none"><li>a. Improve the Mission Capable (MC) rate through RM&amp;A analysis and development projects to provide system improvements that help meet or exceed the required MC rate. These efforts focus on increasing reliability of the air vehicle, command and control systems, voice and data communications systems, computer, sensor systems and infrastructure improvements.</li><li>b. Solve diminishing manufacturing sources (DMS) logistics problems.</li><li>c. Insert new technologies with the aim of reducing maintenance man-hours along with programmed depot maintenance (PDM) improvements to increase aircraft availability.</li></ul></li></ul>  |   |                     |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification: PB 2011 Air Force</b>   |  | <b>DATE:</b> February 2010  |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i>   |  | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i> |
| <p>Additionally, this program element funds AWACS Infrastructure and Systems Support. These efforts synchronize modernization requirements and infrastructure support across the entire weapon system-from depot and field test equipment, to maintenance trainers, to simulators, to integration labs, to the TS-3 Developmental Test and Evaluation Aircraft (RDT&amp;E, AF):</p> <p>5. Test System-3/AWACS Integration Test Support (AITS): The E-3 AWACS Developmental Test and Evaluation (DT&amp;E) aircraft, Test System 3 (TS-3, tail number 73-1674) and the Avionics Integration Laboratory (AIL) are Government owned/contractor managed, maintained and operated system level DT&amp;E assets. These test-ready assets support AWACS modernization, including advanced projects and sustainment projects, and allow AWACS to participate in live-fly (e.g., Joint Expeditionary Force Experiment/JEFX; Empire Challenge/EC) and ground-based interoperability testing. These assets also support multiple international Airborne Early Warning and Control (AEW&amp;C) projects on a fee basis, including projects for the French, RSAF, UK, Japan, and NATO AEW&amp;C efforts.</p> <p>6. The Training, Support, and Infrastructure (TSI) programs cover required cross cutting programs and activities in support of AWACS modernization and enhancement efforts. These include managing the AWACS developmental infrastructure, support for equipment concurrency, modernization planning/analysis, and trainer/simulator integration and concurrency. The E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) is maintained and operated to provide customers with a functioning E-3 radar configuration in support of AWACS US, FMS and International radar development, production, and sustainment programs. New support equipment technologies and test strategies need to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment. Trainer/simulator concurrency analysis and definition is required to ensure trainers and simulators are kept current with the AWACS baseline.</p> <p>This program element also funds Material Solutions Development &amp; Analysis. These efforts look toward the future, investigating enhanced capabilities and exploring new mission areas (RDT&amp;E, AF):</p> <p>7. Command &amp; Control, Intelligence, Surveillance and Reconnaissance (C2ISR) System Improvements: Investigate and develop future capabilities of the AWACS weapon system, or next C2ISR platform. These efforts also include investigation, analysis and development to ensure that AWACS successfully integrates with Joint and Coalition forces in a net-centric environment. C2ISR primarily supports Pre-Systems Acquisition in the areas of Material Solution Analysis and Technology Development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter. Examples of these activities include, but are not limited to:</p> <ul style="list-style-type: none"> <li>o Evaluating emerging operational needs, concepts, and technologies to enable integration of AWACS' capabilities to align with integrated C2ISR network architectures as defined in Joint Vision 2020, Air Expeditionary Force CONOPS, C2 Constellation CONOPS, Air Force CONOPS, and C2ISR Mission area plans.</li> <li>o Improving sensors, communications, and multi-sensor integration such as the ability to send, receive, and fuse the air (and ground) picture via data link to fighter aircraft, through rapid prototyping, modeling, simulation, and participation in Joint exercises (e.g., Joint Expeditionary Forces Experiment (JEFX) and Empire Challenge (EC)).</li> <li>o Improving the timeliness and accuracy of information passed to/from fighter aircraft in the engagement zone by providing consistent and re-playable post-mission data to provide quicker reaction capabilities to support the air war.</li> </ul> |  |   |

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force   |         |  |              | DATE: February 2010 |               |
| APPROPRIATION/BUDGET ACTIVITY   |         | R-1 ITEM NOMENCLATURE                                    |              |                     |               |
| 3600: Research, Development, Test & Evaluation, Air Force   |         | PE 0207417F: Airborne Warning and Control System (AWACS) |              |                     |               |
| BA 7: Operational Systems Development   |         |  |              |                     |               |
| o Exploring concepts, developing technology, and demonstrating efforts that support continuous improvements and self-protection for C2ISR capabilities of manned & unmanned platforms, space, data links, and advanced Battle Management decision tools.  |         |  |              |                     |               |
| 8. Net-Centric Capability (NCC): Provides integrated Net-Centric Command and Control (C2) applications and mission system access to Beyond-Line-of-Sight (BLOS) Internet Protocol (IP) SATCOM for AWACS Block 40/45 configured aircraft. NCC leverages the AWACS DRAGON modification's acquisition of INMARSAT-BLOS IP communications capability to provide E-3 AWACS with enhanced capability to manage the net-centric airborne battlespace as well as connect with C2 battle managers on the ground and in other airborne C2 platforms. NCC modifications enhance expedient off-board distribution of the AWACS air picture and other critical mission data, and give mission crews timely and accurate C2 data via an enhanced suite of battle-management tools including a robust chat capability and Airborne Web Services access to friendly forces tracking, Air Tasking Order updates, and other net-centric data sources while supporting simultaneous multi-level security domains. The program will begin risk reduction and technology development under the Material Solutions Development and Analysis Major Thrust in FY12, with a Milestone B projected in FY14. |         |  |              |                     |               |
| B. Program Change Summary (\$ in Millions)  |         |  |              |                     |               |
|   | FY 2009 | FY 2010  | FY 2011 Base | FY 2011 OCO         | FY 2011 Total |
| Previous President's Budget   | 122.425 | 176.040  | 0.000        | 0.000               | 0.000         |
| Current President's Budget  | 122.425 | 175.514  | 239.755      | 0.000               | 239.755       |
| Total Adjustments   | 0.000   | -0.526   | 239.755      | 0.000               | 239.755       |
| • Congressional General Reductions  |         | 0.000  |              |                     |               |
| • Congressional Directed Reductions   |         | 0.000  |              |                     |               |
| • Congressional Rescissions   | 0.000   | -0.526   |              |                     |               |
| • Congressional Adds  |         | 0.000  |              |                     |               |
| • Congressional Directed Transfers  |         | 0.000  |              |                     |               |
| • Reprogrammings  | 0.000   | 0.000  |              |                     |               |
| • SBIR/STTR Transfer  | 0.000   | 0.000  |              |                     |               |
| • Other Adjustments   | 0.000   | 0.000  | 239.755      | 0.000               | 239.755       |
| Change Summary Explanation  |         |  |              |                     |               |
| 1. The increase in the Current PBR/President's Budget from FY 2009 to FY 2010 is due to changing from a fee-for-service contract strategy to secure Block 40/45 Mission Crew Trainers to a development and acquisition of a Block 40/45 Mission Crew Trainer capability, and the beginning of the Engineering and Manufacturing Development (EMD) Phase for the DRAGON modification.  |         |  |              |                     |               |
| 2. The increase in the Current PBR/President's Budget from FY 2010 to FY 2011 is due to the TS-3 aircraft programmed depot maintenance cycle, NIGFF starting EMD for the Block 40/45 software configuration, and DRAGON's ramp up for the EMD effort.   |         |  |              |                     |               |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Air Force  |                       |                         |                              |   |                               |                         |                         | <b>DATE:</b> February 2010   |                         |                         |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i> |                       |                         |                              | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i> |                               |                         |                         | <b>PROJECT</b><br>67411L: <i>Airborne Warning &amp; Control System (AWACS)</i> |                         |                         |                   |
| <b>COST (\$ in Millions)</b>   | <b>FY 2009 Actual</b> | <b>FY 2010 Estimate</b> | <b>FY 2011 Base Estimate</b> | <b>FY 2011 OCO Estimate</b>   | <b>FY 2011 Total Estimate</b> | <b>FY 2012 Estimate</b> | <b>FY 2013 Estimate</b> | <b>FY 2014 Estimate</b>  | <b>FY 2015 Estimate</b> | <b>Cost To Complete</b> | <b>Total Cost</b> |
| 67411L: <i>Airborne Warning &amp; Control System (AWACS)</i>   | 122.425               | 175.514                 | 239.755                      | 0.000   | 239.755                       | 181.718                 | 120.660                 | 128.852  | 91.118                  | Continuing              | Continuing        |
| Quantity of RDT&E Articles   | 0                     | 0                       | 0                            | 0   | 0                             | 0                       | 0                       | 0  | 0                       |                         |                   |

## A. Mission Description and Budget Item Justification

Mission: AWACS is the premier airborne platform providing command and control (C2)/battle management (BM) to Commander In Chief and combatant commander tasking for Joint, Allied, and Coalition operations, Humanitarian Relief, and Homeland Defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include all-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

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This program element funds the following AWACS modernization efforts (RDT&E, AF):

1. Block 40/45 is replacing AWACS 1970's vintage mission systems that are experiencing Diminishing Manufacturing Sources (DMS) issues, are difficult and expensive to upgrade, and limit overall AWACS system performance. The Block 40/45 upgrade will improve integration, quality and timeliness of sensor data to the shooter, improve Combat Identification (CID), improve AWACS contribution to Time Critical Targeting via Data Link Infrastructure (DLI), improve electronic support measures processing and enable more effective, faster upgrades via an open-systems, Ethernet-based architecture. The upgrade will also update the ground support infrastructure including training systems.

Block 40/45 met a Milestone C in FY09 and awarded a contract for the first of six LRIP articles in FY09.

2. The Next Generation Identification Friend or Foe (NGIFF) Program provides AWACS with enhanced IFF interrogator operation to add a more secure Mode 5 capability. NSA declared IFF Mode 4 unsecure and obsolete on 5 Nov 2003. Joint Requirements Oversight Council Memo 047-07 requires IFF Mode 5 interrogation

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| <p>capability by FY14. The new Mode 5 interrogation capability extends the effective range of the AWACS interrogator, while helping discriminate against closely spaced cooperative targets.</p> <p>NGIFF will develop and integrate a basic Mode 5 capability on Block 30/35 starting in FY09 and full Mode 5 on Block 40/45 starting in FY10. Hardware will be common between the platforms. NGIFF will also integrate Mode S, a civilian air traffic control capability residing in the NGIFF hardware, as funding allows.</p> <p>3. Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) completes the FAA/International Civil Aviation Organization (ICAO)/ EUROCONTROL air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. Non-compliance will result in airspace restrictions and denials that will impact AWACS ability to support worldwide responses to situations requiring immediate on-scene command and control (C2) battle management. The DRAGON modifications replace the existing DMS GPS Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode-5 IFF and Joint Mission Planning System (JMPS). Also included as part of the modification is the addition of data link communications, upgrade or replacement of emergency locating technologies, voice and data link digital radios, and improved visual displays. Emphasis on employment of COTS avionics is expected to lower cost, reduce the tech refresh cycle, and enhance life cycle management. Replacement of critical avionics subsystems that will become unsustainable beginning in 2010 are included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is planned to be executed cooperatively between US and NATO. The US and NATO are currently pursuing a cooperative risk reduction effort and working towards award of a cooperative EMD contract in FY11.</p> <p>4. Support the War Fighter (STWF): STWF efforts support AWACS capability to create and sustain the force. Examples of these activities include, but are not limited to:</p> <ul style="list-style-type: none"> <li>o Designing, developing, and modernizing equipment and systems to ensure that AWACS can respond to urgent wartime/contingency acquisition requirements (e.g. Urgent Operational Needs (UONs) and Wartime Urgent &amp; Compelling Needs (WUCNs).</li> <li>o Upgrading key capabilities to meet contingency needs, modernizing test systems, integrating battle management and data link enhancements, and supporting Reliability, Maintainability, and Availability (RM&amp;A) initiatives which: <ul style="list-style-type: none"> <li>a. Improve the Mission Capable (MC) rate through RM&amp;A analysis and development projects to provide system improvements that help meet or exceed the required MC rate. These efforts focus on increasing reliability of the air vehicle, command and control systems, voice and data communications systems, computer, sensor systems and infrastructure improvements.</li> <li>b. Solve diminishing manufacturing sources (DMS) logistics problems.</li> <li>c. Insert new technologies with the aim of reducing maintenance man-hours along with programmed depot maintenance (PDM) improvements to increase aircraft availability.</li> </ul> </li> </ul> |   |  |

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| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i>   | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i> | <b>PROJECT</b><br>67411L: <i>Airborne Warning &amp; Control System (AWACS)</i> |
| <p>Additionally, this program element funds AWACS Infrastructure and Systems Support. These efforts synchronize modernization requirements and infrastructure support across the entire weapon system-from depot and field test equipment, to maintenance trainers, to simulators, to integration labs, to the TS-3 Developmental Test and Evaluation Aircraft (RDT&amp;E, AF):</p> <p>5. Test System-3/AWACS Integration Test Support (AITS): The E-3 AWACS Developmental Test and Evaluation (DT&amp;E) aircraft, Test System 3 (TS-3, tail number 73-1674) and the Avionics Integration Laboratory (AIL) are Government owned/contractor managed, maintained and operated system level DT&amp;E assets. These test-ready assets support AWACS modernization, including advanced projects and sustainment projects, and allow AWACS to participate in live-fly (e.g., Joint Expeditionary Force Experiment/JEFX; Empire Challenge/EC) and ground-based interoperability testing. These assets also support multiple international Airborne Early Warning and Control (AEW&amp;C) projects on a fee basis, including projects for the French, RSAF, UK, Japan, and NATO AEW&amp;C efforts.</p> <p>6. The Training, Support, and Infrastructure (TSI) programs cover required cross cutting programs and activities in support of AWACS modernization and enhancement efforts. These include managing the AWACS developmental infrastructure, support for equipment concurrency, modernization planning/analysis, and trainer/simulator integration and concurrency. The E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) is maintained and operated to provide customers with a functioning E-3 radar configuration in support of AWACS US, FMS and International radar development, production, and sustainment programs. New support equipment technologies and test strategies need to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment. Trainer/simulator concurrency analysis and definition is required to ensure trainers and simulators are kept current with the AWACS baseline.</p> <p>This program element also funds Material Solutions Development &amp; Analysis. These efforts look toward the future, investigating enhanced capabilities and exploring new mission areas (RDT&amp;E, AF):</p> <p>7. Command &amp; Control, Intelligence, Surveillance and Reconnaissance (C2ISR) System Improvements: Investigate and develop future capabilities of the AWACS weapon system, or next C2ISR platform. These efforts also include investigation, analysis and development to ensure that AWACS successfully integrates with Joint and Coalition forces in a net-centric environment. C2ISR primarily supports Pre-Systems Acquisition in the areas of Material Solution Analysis and Technology Development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter. Examples of these activities include, but are not limited to:</p> <ul style="list-style-type: none"> <li>o Evaluating emerging operational needs, concepts, and technologies to enable integration of AWACS' capabilities to align with integrated C2ISR network architectures as defined in Joint Vision 2020, Air Expeditionary Force CONOPS, C2 Constellation CONOPS, Air Force CONOPS, and C2ISR Mission area plans.</li> <li>o Improving sensors, communications, and multi-sensor integration such as the ability to send, receive, and fuse the air (and ground) picture via data link to fighter aircraft, through rapid prototyping, modeling, simulation, and participation in Joint exercises (e.g., Joint Expeditionary Forces Experiment (JEFX) and Empire Challenge (EC)).</li> <li>o Improving the timeliness and accuracy of information passed to/from fighter aircraft in the engagement zone by providing consistent and re-playable post-mission data to provide quicker reaction capabilities to support the air war.</li> </ul> |   |  |

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| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development   |  | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |  | PROJECT<br>67411L: Airborne Warning & Control System (AWACS) |         |              |             |               |
| <ul style="list-style-type: none"><li>o Exploring concepts, developing technology, and demonstrating efforts that support continuous improvements and self-protection for C2ISR capabilities of manned &amp; unmanned platforms, space, data links, and advanced Battle Management decision tools.</li></ul>  |  |   |  |  |         |              |             |               |
| 8. Net-Centric Capability (NCC): Provides integrated Net-Centric Command and Control (C2) applications and mission system access to Beyond-Line-of-Sight (BLOS) Internet Protocol (IP) SATCOM for AWACS Block 40/45 configured aircraft. NCC leverages the AWACS DRAGON modification's acquisition of INMARSAT-BLOS IP communications capability to provide E-3 AWACS with enhanced capability to manage the net-centric airborne battlespace as well as connect with C2 battle managers on the ground and in other airborne C2 platforms. NCC modifications enhance expedient off-board distribution of the AWACS air picture and other critical mission data, and give mission crews timely and accurate C2 data via an enhanced suite of battle-management tools including a robust chat capability and Airborne Web Services access to friendly forces tracking, Air Tasking Order updates, and other net-centric data sources while supporting simultaneous multi-level security domains. The program will begin risk reduction and technology development under the Material Solutions Development and Analysis Major Thrust in FY12, with a Milestone B projected in FY14.                               |  |   |  |  |         |              |             |               |
| B. Accomplishments/Planned Program (\$ in Millions)   |  |   |  |  |         |              |             |               |
|   |  |   |  | FY 2009  | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| MAJOR THRUST: Material Solutions Development and Analysis   |  |   |  | 14.349   | 10.595  | 6.813        | 0.000       | 6.813         |
| FY 2009 Accomplishments:<br>In FY 2009: C2ISR System Improvements developed a prototype Iridium mIRC (Internet Relay Chat) capability and delivered it to AWACS currently in theater based on an Urgent Operational Need (UON). Researched and refined requirements for a Flight Performance Software capability (FPS) to allow release of a Request for Proposal (RFP)-FPS provides a automated software for computing Take-Off and Landing Data (TOLD) more accurately and efficiently than extrapolating paper graphs and hand calculations. Refined aircrew composition studies in conjunction with the Air Force Research Lab (AFRL) to better integrate new Block 40/45 air battle manager roles and responsibilities into the new mission system. Examined potential solutions to upgrade the sensor, increase reliability, implement countermeasures, and incorporate Electronic Protection. Conducted tests in the Systems Integration Lab (SIL) to assess potential sensor vulnerabilities to Electronic Attack; planned and prepared for Joint Expeditionary Force Exercise (JEFX) 2010 and Coalition Warfare Interoperability Demonstration (CWID) 2010. Formulated the Experiment Long Range Plan. |  |   |  |  |         |              |             |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force  |  |   |         | DATE: February 2010  |             |               |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development   |  | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |         | PROJECT<br>67411L: Airborne Warning & Control System (AWACS) |             |               |
| B. Accomplishments/Planned Program (\$ in Millions)   |  |   |         |  |             |               |
|   |  | FY 2009   | FY 2010 | FY 2011 Base   | FY 2011 OCO | FY 2011 Total |
| FY 2010 Plans:<br>In FY 2010: Continue development of FPS. Proposed Radar Modernization Program (RMP) upgrades being reviewed by major contractors. Conduct flight test to assess potential sensor vulnerabilities to Electronic Attack. Execute JEFX 2010 & CWID 2010. Update the Experiment Long Range Plan.  |  |   |         |  |             |               |
| FY 2011 Base Plans:<br>In FY 2011: Complete EMD on FPS. Conduct engineering / integration study to determine required modifications and associated costs to upgrade the radar system with more robust signal processing prior to mission computing, and incorporating classified Electronic Protection measures. Plan and execute International Cooperative Research & Development (ICR&D).   |  |   |         |  |             |               |
| FY 2011 OCO Plans:<br>In FY 2011 OCO: Not Applicable.   |  |   |         |  |             |               |
| MAJOR THRUST: AWACS Modernization   |  | 81.061  | 137.184 | 180.939  | 0.000       | 180.939       |
| FY 2009 Accomplishments:<br>In FY 2009:<br>Block 40/45: Continued Pre-Prod efforts in support of first aircraft modification job plans and drawings. Continued Air Worthiness Testing (AWT). Continued reliability improvements. Addressed Diminishing Manufacturing Sources (DMS) and Commercial off the Shelf (COTS) technical refresh.<br><br>NGIFF: Awarded Engineering and Manufacturing Development (EMD) contract. Began UPX-40 software development and supported Environmental Qualification and Electro-Magnetic Interference (EMI) qualification.<br><br>DRAGON: N/A |  |   |         |  |             |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force   |  |   | DATE: February 2010 |  |         |              |             |               |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development  |  | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |                     | PROJECT<br>67411L: Airborne Warning & Control System (AWACS) |         |              |             |               |
| B. Accomplishments/Planned Program (\$ in Millions)  |  |   |                     |  |         |              |             |               |
|  |  |   |                     | FY 2009  | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| <p>STWF: Updated Joint Tactical Information Distribution System (JTIDS) Central Display Unit (CDU) tech orders (TOs) to enable organic depot repair. Updated TOs, Time Compliance TO (TCTO) and drawings for the ARC-169 filter. Requested proposal for Link 16 Interface Change Proposal (ICP) to close capabilities gap associated with Block 40/45 capabilities.</p> <p><i>FY 2010 Plans:</i><br/>In FY 2010:<br/>Block 40/45: Continue Pre-Prod and ground infrastructure activities prior to first aircraft modification. Begin Mission Crew Trainer Set (MCTS) development effort and continue development of training plans for air crew/maintenance personnel for the mission system. Continue development of Data Link Infrastructure (DLI) enhancements for seamless transition from Block 30/35. Address DMS issues for future buys. Complete modification job plans and final drawings, reliability improvements, and Airworthiness Testing.</p> <p>NGIFF: Software development: expound upon the required capability, conduct flight test, conduct DT/OT, conduct testing and certification, conduct formal Data Verification Testing (DVT).</p> <p>DRAGON: Complete risk reduction. Address DMS issues and global airspace accessibility. Release EMD Request for Proposal, evaluate contractor's proposal, conduct negotiations, and execute International Project Agreement with NATO.</p> <p>STWF: Prototype and test E-3 with Situation Awareness Data Link (SADL). Close Link 16 ICP gap between platforms. Study Single Channel Ground and Airborne Radio System (SINCGARS) capable radio.</p> <p><i>FY 2011 Base Plans:</i><br/>In FY 2011:</p> |  |   |                     |  |         |              |             |               |
|  |  |   |                     |  |         |              |             |               |
|  |  |   |                     |  |         |              |             |               |
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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force   |  |   |         | DATE: February 2010  |             |               |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development  |  | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |         | PROJECT<br>67411L: Airborne Warning & Control System (AWACS) |             |               |
| B. Accomplishments/Planned Program (\$ in Millions)  |  |   |         |  |             |               |
|  |  | FY 2009   | FY 2010 | FY 2011 Base   | FY 2011 OCO | FY 2011 Total |
| Block 40/45: Continue development of MCTS. Finish Pre-Prod activities to synchronize with first aircraft install. Complete ground infrastructure and training plans. Continue development of DLI improvements for seamless transition from Block 30/35. Continue to administer DMS and COTS hardware tech refresh for future aircraft buys.  |  |   |         |  |             |               |
| NGIFF: Review requirements, interfaces, and manufacturing plans. Certify software functionality and complete system verification on Mission Computing. Complete Installation and Checkout of hardware equipment. Begin software system integration. Demonstrate software and hardware interfaces in Lab.   |  |   |         |  |             |               |
| DRAGON: Award EMD contract. Complete System Requirements Review and Integrated Baseline Review. Complete government review of major subcontractor's Preliminary Design Reviews (PDR) and the Prime Contractor's own PDR. Complete a PDR Assessment review with the Milestone Decision Authority.   |  |   |         |  |             |               |
| STWF: Continue closing Link 16 gap between Block 30/35 and Block 40/45. Investigate impacts of crypto modification projects on the E-3. Continue working emerging issues.  |  |   |         |  |             |               |
| FY 2011 OCO Plans:<br>In FY 2011 OCO: Not Applicable.  |  |   |         |  |             |               |
| MAJOR THRUST: AWACS Infrastructure and Systems Support   |  | 27.015  | 27.735  | 52.003   | 0.000       | 52.003        |
| FY 2009 Accomplishments:<br>In FY 2009: Supported Block 40/45 EMD ground and flight system qualification program. Provided system level labs to U.S., International, and FMS customers to perform program integration and test activities. Supported mandatory E-3 Operational, Safety, Suitability and Effectiveness program; Single Manager's modification responsibilities; and the AWACS System Engineering program by providing E-3 Training Concurrency engineering which included maintaining the Associate Contractor Agreements between the prime integrator and the individual vendors. Provided the radar system labs |  |   |         |  |             |               |

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| Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force  |  |   | DATE: February 2010 |  |              |             |               |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development   |  | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |                     | PROJECT<br>67411L: Airborne Warning & Control System (AWACS) |              |             |               |
| B. Accomplishments/Planned Program (\$ in Millions)   |  |   |                     |  |              |             |               |
|   |  |   | FY 2009             | FY 2010  | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
| to support U.S., International and FMS radar improvement programs and radar sustainment efforts. Maintained TS-3 test asset.  |  |   |                     |  |              |             |               |
| FY 2010 Plans:<br>In FY 2010: Supports AWACS modernization and sustainment programs, including advanced C2ISR projects. Participate in live-fly events (JEFX) and ground-based kill chain simulation exercises (Joint Distributed Engineering Plan (JDEP)). Continue to mature emerging technologies, net-centric operations and next generation C2/BM activities. Provide system lab support to Block 40/45, Next Generation IFF, NCC, and Japan and Saudi radar improvement integration and test. Support AEW&C OSD mandated interoperability testing. Support mandatory E-3 Operational, Safety, Suitability and Effectiveness program; Single Manager's modification responsibilities; and the AWACS System Engineering program by providing E-3 Training Concurrency engineering which includes maintaining the Associate Contractor Agreements between the prime integrator and the individual trainer vendors. Provide the radar system labs to support U.S., International and FMS radar improvement programs and radar sustainment efforts--major activities include Japan and RSAF radar improvement programs and Enhanced Sensor Program risk reduction. Maintain TS-3 test asset. |  |   |                     |  |              |             |               |
| FY 2011 Base Plans:<br>In FY 2011: Support DRAGON lab integration efforts. Continue to mature emerging technologies, net-centric operations and next generation C2/BM activities. Provide system lab support to Block 40/45, Next Generation IFF, NCC, and Japan and RSAF radar improvement integration and test. Support AEW&C OSD mandated interoperability testing. Supports mandatory E-3 Operational, Safety, Suitability and Effectiveness program; Single Manager's modification responsibilities; and the AWACS System Engineering program by providing E-3 Training Concurrency engineering which includes maintaining the Associate Contractor Agreements between the prime integrator and the individual trainer vendors. Provide the radar system labs to support U.S., International and FMS radar improvement programs and radar sustainment efforts--major activities include Japan and RSAF Radar improvement programs and Enhanced Sensor Program risk reduction. Maintain TS-3 test asset.  |  |   |                     |  |              |             |               |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Air Force  |                |                |   |                        |                          |  | <b>DATE:</b> February 2010 |                         |                        |                             |                   |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i>   |                |                | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i> |                        |                          | <b>PROJECT</b><br>67411L: <i>Airborne Warning &amp; Control System (AWACS)</i> |                            |                         |                        |                             |                   |
| <b>B. Accomplishments/Planned Program (\$ in Millions)</b>   |                |                |   |                        |                          |  |                            |                         |                        |                             |                   |
|  |                |                |   |                        |                          | <b>FY 2009</b>   | <b>FY 2010</b>             | <b>FY 2011<br/>Base</b> | <b>FY 2011<br/>OCO</b> | <b>FY 2011<br/>Total</b>    |                   |
| <i>FY 2011 OCO Plans:</i><br>In FY 2011 OCO: Not Applicable.   |                |                |   |                        |                          |  |                            |                         |                        |                             |                   |
| Accomplishments/Planned Programs Subtotals   |                |                |   |                        |                          | 122.425  | 175.514                    | 239.755                 | 0.000                  | 239.755                     |                   |
| <b>C. Other Program Funding Summary (\$ in Millions)</b>   |                |                |   |                        |                          |  |                            |                         |                        |                             |                   |
| <b>Line Item</b>   | <b>FY 2009</b> | <b>FY 2010</b> | <b>FY 2011<br/>Base</b>   | <b>FY 2011<br/>OCO</b> | <b>FY 2011<br/>Total</b> | <b>FY 2012</b>   | <b>FY 2013</b>             | <b>FY 2014</b>          | <b>FY 2015</b>         | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • PE 0207417F: <i>E-3 Mods, APAF</i>   | 96.155         | 76.562         | 192.681   | 0.000                  | 192.681                  | 158.429  | 196.803                    | 231.458                 | 250.579                | 0.000                       | 0.000             |
| • PE 0809731F: <i>Training Support (E-3 Aircraft), APAF</i>  | 0.000          | 2.448          | 2.482   | 0.000                  | 2.482                    | 2.522  | 2.568                      | 2.615                   | 2.666                  | 0.000                       | 0.000             |
| • PE 0207417F (1): <i>E-3 Initial Spares, APAF</i>   | 2.461          | 10.751         | 18.248  | 0.000                  | 18.248                   | 18.526   | 18.837                     | 19.158                  | 19.516                 | 0.000                       | 0.000             |
| <b>D. Acquisition Strategy</b>   |                |                |   |                        |                          |  |                            |                         |                        |                             |                   |
| Most major programs (Block 40/45, DRAGON, TS-3 and lab support) will be sole source to the Boeing Corporation, Seattle, WA.  |                |                |   |                        |                          |  |                            |                         |                        |                             |                   |
| <b>E. Performance Metrics</b>  |                |                |   |                        |                          |  |                            |                         |                        |                             |                   |
| 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 2011 Air Force   |                        |                                |                        |         |            |   |            |             |            |               | DATE: February 2010  |            |                          |  |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development |                        |                                |                        |         |            | R-1 ITEM NOMENCLATURE<br>PE 0207417F: Airborne Warning and Control System (AWACS) |            |             |            |               | PROJECT<br>67411L: Airborne Warning & Control System (AWACS) |            |                          |  |
| Product Development (\$ in Millions)  |                        |                                |                        |         |            |   |            |             |            |               |  |            |                          |  |
|   |                        |                                |                        | FY 2010 |            | FY 2011 Base  |            | FY 2011 OCO |            | FY 2011 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 |  |
| (U) Block 40/45 EMD and Pre-Production  | SS/CPAF                | Boeing Seattle, WA             | 957.610                | 82.470  | Jan 2010   | 89.814  | Jan 2011   | 0.000       |            | 89.814        | Continuing   | Continuing | Continuing               |  |
| (U) Next Generation Identification Friend or Foe (IFF)  | SS/CPIF                | Boeing Seattle, WA             | 23.368                 | 25.660  | Feb 2010   | 35.285  | Feb 2011   | 0.000       |            | 35.285        | Continuing   | Continuing | Continuing               |  |
| (U) DRAGON  | SS/FPI                 | Boeing Seattle, WA             | 0.000                  | 6.550   | Jul 2010   | 25.935  | Dec 2010   | 0.000       |            | 25.935        | Continuing   | Continuing | Continuing               |  |
| (U) Support the War Fighter (STWF)  | Various/ Various       | Various Various                | 6.183                  | 6.042   | Jan 2010   | 8.191   | Jan 2011   | 0.000       |            | 8.191         | Continuing   | Continuing | Continuing               |  |
| (U) C2ISR System Improvement  | SS/Various             | Boeing Seattle, WA             | 99.590                 | 9.325   | Oct 2009   | 5.996   | Oct 2010   | 0.000       |            | 5.996         | Continuing   | Continuing | Continuing               |  |
| (U) Prior Platform Modifications  | Various/ Various       | Boeing Seattle, WA             | 1,603.750              | 0.000   |            | 0.000   |            | 0.000       |            | 0.000         | 0.000  | 1,603.750  | 0.000                    |  |
| Subtotal  |                        |                                | 2,690.501              | 130.047 |            | 165.221   |            | 0.000       |            | 165.221       |  |            |                          |  |
| Remarks   |                        |                                |                        |         |            |   |            |             |            |               |  |            |                          |  |
| Note: Total Program does not include NATO funds.  |                        |                                |                        |         |            |   |            |             |            |               |  |            |                          |  |
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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2011 Air Force</b>   |                                   |   |                               |   |                   |                     |                   |  |                   |                      | <b>DATE:</b> February 2010 |                   |                                 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i> |                                   |   |                               | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i> |                   |                     |                   | <b>PROJECT</b><br>67411L: <i>Airborne Warning &amp; Control System (AWACS)</i> |                   |                      |                            |                   |                                 |
| <b>Support (\$ in Millions)</b>  |                                   |   |                               |   |                   |                     |                   |  |                   |                      |                            |                   |                                 |
|  |                                   |   |                               | <b>FY 2010</b>  |                   | <b>FY 2011 Base</b> |                   | <b>FY 2011 OCO</b>   |                   | <b>FY 2011 Total</b> |                            |                   |                                 |
| <b>Cost Category Item</b>  | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Total Prior Years Cost</b> | <b>Cost</b>   | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>  | <b>Award Date</b> | <b>Cost</b>          | <b>Cost To Complete</b>    | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| (U)Support/ITSP MITRE, travel, other   | Various/<br>Various               | AWACS Program Office<br>Hanscom AFB, MA   | 367.250                       | 22.838  | Oct 2009          | 27.712              | Oct 2010          | 0.000  |                   | 27.712               | Continuing                 | Continuing        | Continuing                      |
| <b>Subtotal</b>  |                                   |   | 367.250                       | 22.838  |                   | 27.712              |                   | 0.000  |                   | 27.712               |                            |                   |                                 |
| <b>Remarks</b>   |                                   |   |                               |   |                   |                     |                   |  |                   |                      |                            |                   |                                 |
| <b>Test and Evaluation (\$ in Millions)</b>  |                                   |   |                               |   |                   |                     |                   |  |                   |                      |                            |                   |                                 |
|  |                                   |   |                               | <b>FY 2010</b>  |                   | <b>FY 2011 Base</b> |                   | <b>FY 2011 OCO</b>   |                   | <b>FY 2011 Total</b> |                            |                   |                                 |
| <b>Cost Category Item</b>  | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Total Prior Years Cost</b> | <b>Cost</b>   | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>  | <b>Award Date</b> | <b>Cost</b>          | <b>Cost To Complete</b>    | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| (U) Test System-3 AWACS Development and Production Test (ADAPT) Contract/ AWACS Integration Test Support (AITS) Contract / Other test activities             | SS/Various                        | Boeing Seattle, WA                        | 183.057                       | 17.958  | Oct 2009          | 41.142              | Oct 2010          | 0.000  |                   | 41.142               | Continuing                 | Continuing        | Continuing                      |
| (U) Training, Support & Infrastructure (TSI)   | SS/Various                        | Boeing Seattle, WA                        | 21.544                        | 4.671   | Jan 2010          | 5.680               | Jan 2011          | 0.000  |                   | 5.680                | Continuing                 | Continuing        | Continuing                      |
| <b>Subtotal</b>  |                                   |   | 204.601                       | 22.629  |                   | 46.822              |                   | 0.000  |                   | 46.822               |                            |                   |                                 |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2011 Air Force  |                        |                                |                        |   |            |              |            |  |            |               | <b>DATE:</b> February 2010 |            |                          |  |  |  |  |         |  |              |  |             |  |               |  |  |  |                    |                        |                                |                        |      |            |      |            |      |            |      |                  |            |                          |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                        |         |  |              |  |             |  |               |                  |            |                          |                            |  |  |           |         |  |         |  |       |  |         |  |  |  |
|---|------------------------|--------------------------------|------------------------|---|------------|--------------|------------|--|------------|---------------|----------------------------|------------|--------------------------|--|--|--|--|---------|--|--------------|--|-------------|--|---------------|--|--|--|--------------------|------------------------|--------------------------------|------------------------|------|------------|------|------------|------|------------|------|------------------|------------|--------------------------|----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------------------------|---------|--|--------------|--|-------------|--|---------------|------------------|------------|--------------------------|----------------------------|--|--|-----------|---------|--|---------|--|-------|--|---------|--|--|--|
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i>  |                        |                                |                        | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i> |            |              |            | <b>PROJECT</b><br>67411L: <i>Airborne Warning &amp; Control System (AWACS)</i> |            |               |                            |            |                          |  |  |  |  |         |  |              |  |             |  |               |  |  |  |                    |                        |                                |                        |      |            |      |            |      |            |      |                  |            |                          |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                        |         |  |              |  |             |  |               |                  |            |                          |                            |  |  |           |         |  |         |  |       |  |         |  |  |  |
| <p><b>Test and Evaluation (\$ in Millions)</b></p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="4"></th> <th colspan="2">FY 2010</th> <th colspan="2">FY 2011 Base</th> <th colspan="2">FY 2011 OCO</th> <th>FY 2011 Total</th> <th colspan="2"></th> <th></th> </tr> <tr> <th>Cost Category Item</th> <th>Contract Method &amp; Type</th> <th>Performing Activity &amp; Location</th> <th>Total Prior Years Cost</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Cost To Complete</th> <th>Total Cost</th> <th>Target Value of Contract</th> </tr> </thead> <tbody> <tr> <td colspan="14"><b>Remarks</b></td> </tr> <tr> <td colspan="3"></td> <td>Total Prior Years Cost</td> <td colspan="2">FY 2010</td> <td colspan="2">FY 2011 Base</td> <td colspan="2">FY 2011 OCO</td> <td>FY 2011 Total</td> <td>Cost To Complete</td> <td>Total Cost</td> <td>Target Value of Contract</td> </tr> <tr> <td colspan="3" style="text-align: right;"><b>Project Cost Totals</b></td> <td>3,262.352</td> <td>175.514</td> <td></td> <td>239.755</td> <td></td> <td>0.000</td> <td></td> <td>239.755</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> |                        |                                |                        |   |            |              |            |  |            |               |                            |            |                          |  |  |  |  | FY 2010 |  | FY 2011 Base |  | FY 2011 OCO |  | FY 2011 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 | <b>Remarks</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total Prior Years Cost | FY 2010 |  | FY 2011 Base |  | FY 2011 OCO |  | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract | <b>Project Cost Totals</b> |  |  | 3,262.352 | 175.514 |  | 239.755 |  | 0.000 |  | 239.755 |  |  |  |
|   |                        |                                |                        | FY 2010   |            | FY 2011 Base |            | FY 2011 OCO  |            | FY 2011 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 |  |  |  |  |         |  |              |  |             |  |               |  |  |  |                    |                        |                                |                        |      |            |      |            |      |            |      |                  |            |                          |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                        |         |  |              |  |             |  |               |                  |            |                          |                            |  |  |           |         |  |         |  |       |  |         |  |  |  |
| <b>Remarks</b>  |                        |                                |                        |   |            |              |            |  |            |               |                            |            |                          |  |  |  |  |         |  |              |  |             |  |               |  |  |  |                    |                        |                                |                        |      |            |      |            |      |            |      |                  |            |                          |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                        |         |  |              |  |             |  |               |                  |            |                          |                            |  |  |           |         |  |         |  |       |  |         |  |  |  |
|   |                        |                                | Total Prior Years Cost | FY 2010   |            | FY 2011 Base |            | FY 2011 OCO  |            | FY 2011 Total | Cost To Complete           | Total Cost | Target Value of Contract |  |  |  |  |         |  |              |  |             |  |               |  |  |  |                    |                        |                                |                        |      |            |      |            |      |            |      |                  |            |                          |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                        |         |  |              |  |             |  |               |                  |            |                          |                            |  |  |           |         |  |         |  |       |  |         |  |  |  |
| <b>Project Cost Totals</b>  |                        |                                | 3,262.352              | 175.514   |            | 239.755      |            | 0.000  |            | 239.755       |                            |            |                          |  |  |  |  |         |  |              |  |             |  |               |  |  |  |                    |                        |                                |                        |      |            |      |            |      |            |      |                  |            |                          |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                        |         |  |              |  |             |  |               |                  |            |                          |                            |  |  |           |         |  |         |  |       |  |         |  |  |  |
| <p><b>Remarks</b></p> <p>Total Prior Years Cost may include only FY 2009 data.</p>  |                        |                                |                        |   |            |              |            |  |            |               |                            |            |                          |  |  |  |  |         |  |              |  |             |  |               |  |  |  |                    |                        |                                |                        |      |            |      |            |      |            |      |                  |            |                          |                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                        |         |  |              |  |             |  |               |                  |            |                          |                            |  |  |           |         |  |         |  |       |  |         |  |  |  |

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

**APPROPRIATION/BUDGET ACTIVITY**

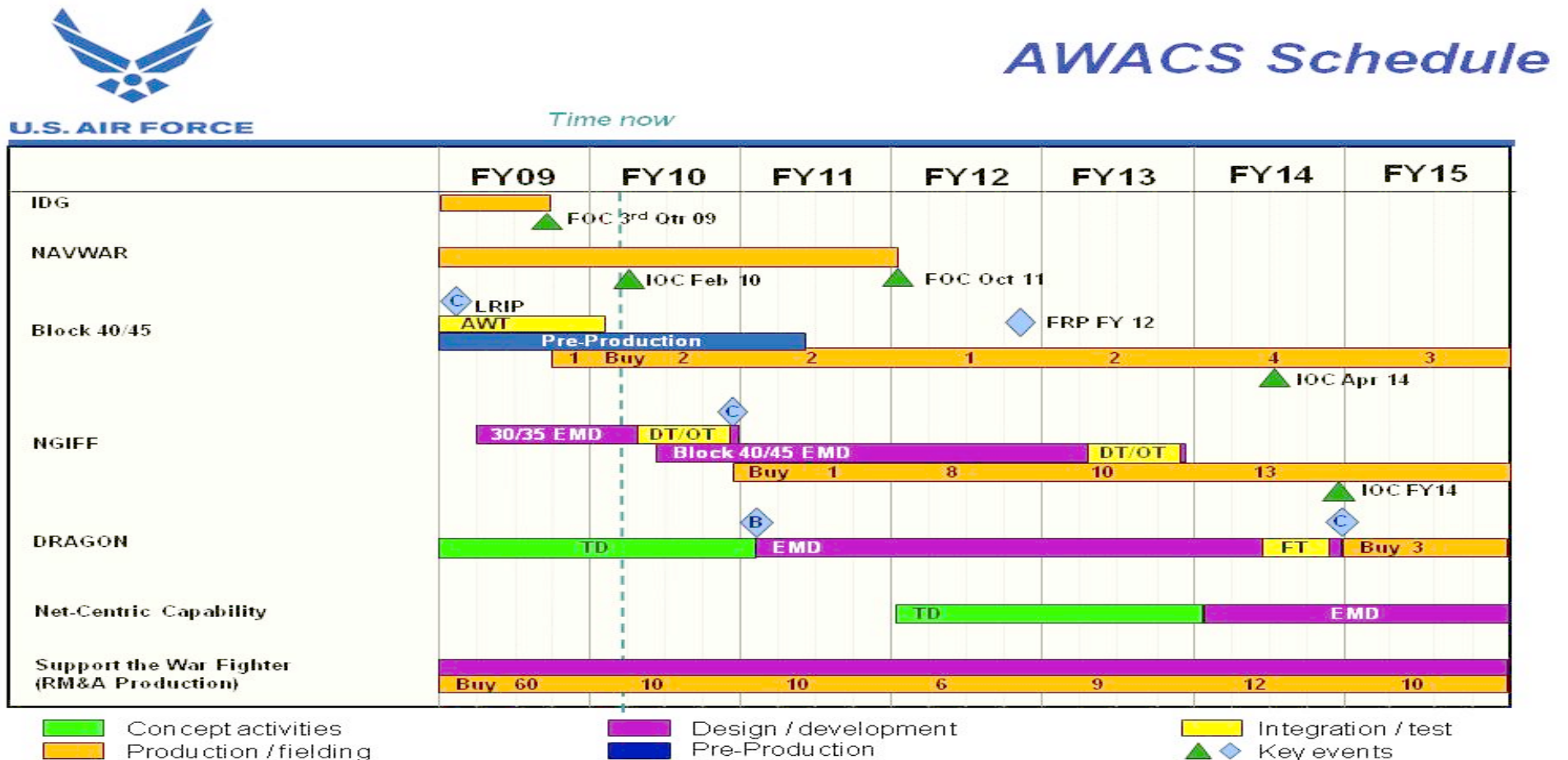
3600: Research, Development, Test & Evaluation, Air Force  
BA 7: Operational Systems Development

**R-1 ITEM NOMENCLATURE**

PE 0207417F: Airborne Warning and Control System (AWACS)

**PROJECT**

67411L: Airborne Warning & Control System (AWACS)



Depicted by installation/production flow

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R-1 Line Item #149

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|  |   |  |                            |
|--|---|--|----------------------------|
| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2011 Air Force   |   |  | <b>DATE:</b> February 2010 |
| <b>APPROPRIATION/BUDGET ACTIVITY</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i> | <b>R-1 ITEM NOMENCLATURE</b><br>PE 0207417F: <i>Airborne Warning and Control System (AWACS)</i> | <b>PROJECT</b><br>67411L: <i>Airborne Warning &amp; Control System (AWACS)</i> |                            |

## Schedule Details

| Event   | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| IDG Production                                      | 1       | 2009 | 3       | 2009 |
| IDG FOC   | 3       | 2009 | 3       | 2009 |
| NAVWAR Production                                   | 1       | 2009 | 4       | 2011 |
| NAVWAR IOC  | 2       | 2010 | 2       | 2010 |
| 40/45 Airworthiness Testing (AWT)                   | 1       | 2009 | 1       | 2010 |
| 40/45 Pre-Production                                | 1       | 2009 | 2       | 2011 |
| 40/45 LRIP Milestone C                              | 1       | 2009 | 1       | 2009 |
| 40/45 LRIP (6 aircraft)                             | 4       | 2009 | 4       | 2011 |
| NGIFF Block 30/35 EMD                               | 2       | 2009 | 4       | 2010 |
| NGIFF Block 30/35 Developmental/Operational Testing | 2       | 2010 | 4       | 2010 |
| NGIFF Milestone C                                   | 4       | 2010 | 4       | 2010 |
| NGIFF Block 40/45 EMD                               | 2       | 2010 | 4       | 2011 |
| NGIFF Production                                    | 4       | 2010 | 4       | 2011 |
| DRAGON Technology Development                       | 1       | 2009 | 1       | 2011 |
| DRAGON Milestone B                                  | 1       | 2011 | 1       | 2011 |
| DRAGON EMD  | 1       | 2011 | 4       | 2011 |
| Support the War Fighter (STWF)                      | 1       | 2009 | 4       | 2011 |

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