UNCLASSIFIED

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

APPROPRIATION/BUDGET ACTIVITY
3600: Research, Development, Test & Evaluation, Air Force
BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE
PE 0604281F: TACTICAL DATA NETWORKS ENTERPRISE

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</tr>
</thead>
<tbody>
<tr>
<td>Total Program Element</td>
<td>160.316</td>
<td>132.941</td>
<td>52.355</td>
<td></td>
<td>52.355</td>
<td>32.351</td>
<td>37.081</td>
<td>30.846</td>
<td>31.438</td>
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<tr>
<td>655050: TDL System Integration</td>
<td>57.784</td>
<td>67.842</td>
<td>34.934</td>
<td>-</td>
<td>34.934</td>
<td>28.135</td>
<td>31.569</td>
<td>30.846</td>
<td>31.438</td>
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<td></td>
</tr>
<tr>
<td>655262: Family of Gateways</td>
<td>102.532</td>
<td>65.099</td>
<td>17.421</td>
<td>-</td>
<td>17.421</td>
<td>4.216</td>
<td>5.512</td>
<td>-</td>
<td>-</td>
<td>Continuing Continuing</td>
<td></td>
</tr>
</tbody>
</table>

Note
FY 2011 funding totals include $30.0M requested for Overseas Contingency Operations.

The program funding includes reductions for reports/studies/boards efficiencies that are not intended to impact program content. The efficiencies reductions total $0.509M in FY 2012.

A. Mission Description and Budget Item Justification

The Tactical Data Networks Enterprise (TDNE) contributes to the development, delivery and deployment of the next generation aerial layer network through a portfolio of legacy and advanced waveform development/management efforts that advance interoperability and connectivity. This will be accomplished via fielded and future ground and gateway investments while addressing warfighter urgent demands through the establishment of Quick Reaction Capabilities (QRC). The TDNE conceptualizes, acquires and fields aerial networking capabilities to support legacy, current, in-development, and future systems across all domains of information exchange that enables strike, mobility, special operations, Command and Control (C2), Intelligence, Surveillance and Reconnaissance (ISR), air, surface, subsurface and space operations. These capabilities ensure a robust and agile extension of the global information domain down to the tactical edge in support of the warfighter.

Funding will provide for the study, analysis, enhancement, development, integration, demonstration, test, and evaluation of Tactical Data Links (TDLs) as a subset of the broader Aerial Layer Network. TDLs are used in both peace time and combat environments to exchange information such as character-oriented and fixed-formatted messages, data, radar tracks, target information, platform status, imagery, free-text messaging and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs increase mission effectiveness by providing enhanced situational awareness, positive combat identification of aircraft in the network, correlation of on- and off-board sensor data, digital sharing of machine to machine target and threat information, thereby, enabling time critical targeting and other mission assignment tasking. TDLs are used by all Service Theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Intra-Flight Data Link (IFDL), and other Advanced Tactical Data Link technologies, such as Tactical Targeting Network Technology (TTNT), and Multifunction Advanced Data Link (MADL).

Funding also supports Family of Gateway study, analysis, enhancement, development, integration, demonstration, test, and evaluation efforts that will allow joint combat forces to exchange information quickly and accurately by bridging discrete airborne, terrestrial, maritime, and space-based C4ISR networks to produce operational effects not possible within individual networks. Gateway functions include enabling interoperability between data formats, protocols, and communication mediums. Additionally, gateway functions extend the range of connectivity, consolidate data from multiple networks into high capacity links for transmission to key C4ISR nodes, routes information between disadvantaged users, and correlates data from multiple sources to improve accuracy. Gateway functions also provide
Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force  

APPROPRIATION/BUDGET ACTIVITY  
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application hosting, shared data storage, on-demand information access, smart data forwarding, and system monitoring/network management. Funding will also support Quick Reaction Response capability requests by the warfighter and support activities associated with the Joint Aerial Layer Network (JALN) Analysis of Alternatives.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary ($ in Millions)  

<table>
<thead>
<tr>
<th></th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous President's Budget</td>
<td>87.444</td>
<td>132.941</td>
<td>67.790</td>
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<td>67.790</td>
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<tr>
<td>Current President's Budget</td>
<td>160.316</td>
<td>132.941</td>
<td>52.355</td>
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<td>52.355</td>
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<tr>
<td>Total Adjustments</td>
<td>72.872</td>
<td>-</td>
<td>-15.435</td>
<td>-</td>
<td>-15.435</td>
</tr>
<tr>
<td>• Congressional General Reductions</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>• Congressional Directed Reductions</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>• Congressional Recissions</td>
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<td>-</td>
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<tr>
<td>• Congressional Adds</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>• Congressional Directed Transfers</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>• Reprogrammings</td>
<td>78.192</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>• SBIR/STTR Transfer</td>
<td>-4.624</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>• Other Adjustments</td>
<td>-0.696</td>
<td>-</td>
<td>-15.435</td>
<td>-</td>
<td>-15.435</td>
</tr>
</tbody>
</table>

Congressional Add Details ($ in Millions, and Includes General Reductions)  
Project: 655262: Family of Gateways  
Congressional Add: Battlefield Airborne Communications Node  
Congressional Add Subtotals for Project: 655262  
Congressional Add Totals for all Projects  

Change Summary Explanation  
FY 2011 budget reflects implementation, testing, and initial fielding of the BACN capability on the Global Hawk platform (under the Family of Gateways project).

FY 2012 funding reduction due to cancellation of Network Enabled Weapons efforts and realignment of funding for higher AF priorities.
A. Mission Description and Budget Item Justification

Funding will provide for the study, analysis, enhancement, development, integration, demonstration, test, and evaluation of Tactical Data Links (TDL) as a subset of the broader Aerial Layer Network. TDLs are used in both peace time and combat environments to exchange information such as character-oriented and fixed-formatted messages, data, radar tracks, target information, platform status, imagery, free-text messaging and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs increase mission effectiveness by providing enhanced situational awareness, positive combat identification of aircraft in the network, correlation of on- and off-board data, digital sharing of machine to machine target and threat information and, thereby, enabling time critical targeting and other mission assignment tasking. TDLs are used by all Service Theater Command and Control (C2) elements, weapons platforms, and sensors. TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Variable Message Format (VMF), Intra-Flight Data Link (IFDL), and other Advanced Tactical Data Link technologies, such as Tactical Targeting Network Technology (TTNT), and Multifunction Advanced Data Link (MADL).

The number of Air Force platforms hosting TDLs is expanding from C2 aircraft (E-3, E-8, etc.) to the fighter, bomber, ISR, tanker, airlift and other tactical fleets (F-15, F-16, F-22A, Rivet Joint, B-1, B-2, B-52, etc.), as well as to precision guided munitions. Utilization of TDLs in a joint environment requires the integration of terminals into host platforms and interoperability of TDL networks across all deployed joint and coalition platforms.

Efforts in this project include waveform and integration activities.

Waveform:
Waveform activities include, but are not limited to enabling and supporting Joint Interoperability of Tactical Command and Control Systems (JINTACCQS), interoperable System Management and Requirements Transformation (iSMART), Network Enabled Weapons (NEW), Initial Fielding Support (IFS), Coalition Interoperability, Cursor on Target, and Link 16 Enhancements. Funding will provide training, logistics development, certification of individual TDL implementations to joint/allied standards, establishment of service-wide network management procedures/operations, and system wide enhancements/testing.

Integration:
Integration activities include, but are not limited to the Joint Aerial Layer Network (JALN) Analysis of Alternatives (AoA), Data Link Test Facility (DTF), Air Force Participating Test Unit (APFTU), Network Centric Capability Assessment (NCCA), the Joint Warfighting Integrated NetOps (JWIN) Joint Concept Technology Demonstration (JCTD), Tactical Communications Suite (TCS), and Global UAS Networking and Interoperability System (GUNIS). Funding will ensure continued enhanced interoperability of Air Force and joint assets through efforts such as the development/coordination of all TDN standards and management capabilities, configuration management, platform/system interoperability assessments, participation in the Future Airborne Capability Environment (FACE) consortium, and interoperability certification testing.
Activities also include studies and analysis to support both current program planning and execution and future program planning efforts for Tactical Data Networks.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

### B. Accomplishments/Planned Programs ($ in Millions)

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title:</strong> Joint Interoperability of Tactical Command and Control Systems (JINTACCS)</td>
<td>JINTACCS efforts include JINTACCS, iSMART, and AFPTU. JINTACCS ensures interoperability of AF TDL systems with associated joint, allied, and coalition systems and includes development, interoperability certification, TDL message standard implementation (e.g., Links 11A/B, 16, 22, VMF, IBS, MADL), and configuration management of standards.</td>
<td>5.950</td>
<td>8.876</td>
<td>8.547</td>
<td>-</td>
<td>8.547</td>
</tr>
<tr>
<td><strong>FY 2010 Accomplishments:</strong></td>
<td>Ensured compatibility and interoperability of Tactical Data Links by conducting necessary joint compatibility and interoperability tests.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>FY 2011 Plans:</strong></td>
<td>Ensures compatibility and interoperability of Tactical Data Links by conducting necessary joint compatibility and interoperability tests.</td>
<td></td>
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</tr>
<tr>
<td><strong>FY 2012 Base Plans:</strong></td>
<td>Funding will ensure compatibility and interoperability of Tactical Data Links by conducting necessary joint compatibility and interoperability tests.</td>
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<tr>
<td><strong>FY 2012 OCO Plans:</strong></td>
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</tr>
<tr>
<td><strong>Title:</strong> Link 16 Support and Sustainment</td>
<td>Link 16 Support and Sustainment efforts include enhancements to Link 16.</td>
<td>12.312</td>
<td>15.445</td>
<td>4.360</td>
<td>-</td>
<td>4.360</td>
</tr>
<tr>
<td><strong>FY 2010 Accomplishments:</strong></td>
<td>Supported enhancements to the Link 16 network.</td>
<td></td>
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</tr>
<tr>
<td><strong>FY 2011 Plans:</strong></td>
<td></td>
<td></td>
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</tbody>
</table>
**B. Accomplishments/Planned Programs ($ in Millions)**

Funding supports and enables enhancements to the Link 16 network to include the development and prototyping of the Enhanced 1553 bus chipset.

**FY 2012 Base Plans:**
Funding will support and enable enhancements to the Link 16 network to include the completion of the Enhanced 1553 bus chipset prototype effort.

**FY 2012 OCO Plans:**

<table>
<thead>
<tr>
<th>Title</th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
</table>

**FY 2010 Accomplishments:**
Provided training, logistics, development, and certification to individual TDL implementations to joint/allied standards.

**FY 2011 Plans:**
Funding provides training, logistics, development, and certification to individual TDL implementations to joint/allied standards. This includes testing and fielding support of JSS.

**FY 2012 Base Plans:**
Funding will provide training, logistics, development, and certification to individual TDL implementations to joint/allied standards. This includes completion of JSS technical documentation in preparation for transition to sustainment.

**FY 2012 OCO Plans:**

<table>
<thead>
<tr>
<th>Title: Network Enabled Weapons (NEW)</th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.014</td>
<td>1.000</td>
<td>-</td>
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</tr>
</tbody>
</table>

**Description:** Network Enabled Weapons efforts standardize weapon additions to the tactical data network; enhance precision-guided munitions effectiveness through target updates, in-flight tracking, hit indication, and abort messages; and improves operational assessment, re-strike decisions, and ISR tasking decisions.
### B. Accomplishments/Planned Programs ($ in Millions)

<table>
<thead>
<tr>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
</table>

Integrated network enabled weapons into current and future warfighting capabilities within the airborne network enterprise.

**FY 2011 Plans:**
Completes Link 16 message standard update allowing the integration of network enabled weapons into current and future warfighting capabilities within the airborne network enterprise.

**FY 2012 Base Plans:**

**FY 2012 OCO Plans:**

| Title: Situational Awareness Data Link (SADL) |
| FY 2010 Accomplishments: |
| Provided a secure, robust Air-Air and Air-Ground data link and a means to interoperable with Link 16 through a gateway. |

| Description: Situational Awareness Data Link is based on the U.S. Army Enhanced Position Location and Reporting System (EPLRS) radio. SADL provides the means for message translation and Link 16 gateway functionality for tactical exchange of situational awareness and command & control data. |
| FY 2011 Plans: |

| FY 2012 Base Plans: |
| Funding will develop and integrate capability enhancements to update crypto, facilitate imagery exchange, and support multiple tactical user groups within the network. |

| FY 2012 OCO Plans: |

| Title: Quick Reaction Capabilities |
| FY 2010 Accomplishments: |
| Supported AF rapid acoustics requirements for communications bridging of waveforms through Gateway technology. |

| Description: Quick Reaction Capabilities include BACN JUON and CABLE. |
| FY 2011 Plans: |
### B. Accomplishments/Planned Programs ($ in Millions)

Supports AF rapid acquisition requirements for communications bridging of waveforms through Gateway technology.

**FY 2012 Base Plans:**
Funding will support AF rapid acquisition requirements for communications bridging of waveforms through Gateway technology.

**FY 2012 OCO Plans:**

<table>
<thead>
<tr>
<th>Title:</th>
<th>Common Link Integration Processing (CLIP)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Common Link Integration Processing efforts provide Link 16 and Joint Range Extension Application Protocol (JREAP) A &amp; C message processing to the B-1B FIDL and B-52 Platforms via a software upgrade.</td>
</tr>
<tr>
<td><strong>FY 2010 Accomplishments:</strong></td>
<td></td>
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<tr>
<td><strong>FY 2011 Plans:</strong></td>
<td>Provides an enterprise solution for Link-16 and Joint Range Extension Application Protocol (JREAP) message processing.</td>
</tr>
<tr>
<td><strong>FY 2012 Base Plans:</strong></td>
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<tr>
<td><strong>FY 2012 OCO Plans:</strong></td>
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<table>
<thead>
<tr>
<th>Title:</th>
<th>Joint Air Defense System Integrator (JADSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Joint Air Defense System Integrator efforts provide command &amp; control centers a common tactical picture by receiving, processing, and correlating TDL, intelligence, and radar feeds.</td>
</tr>
<tr>
<td><strong>FY 2010 Accomplishments:</strong></td>
<td>Provided a software and hardware package that connects and translates between multiple communication devices and provides situational awareness.</td>
</tr>
<tr>
<td><strong>FY 2011 Plans:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FY 2012 Base Plans:</strong></td>
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</tbody>
</table>
B. Accomplishments/Planned Programs ($ in Millions)

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
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<tbody>
<tr>
<td><strong>FY 2012 OCO Plans:</strong></td>
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<tr>
<td><strong>Title:</strong> Cursor on Target (CoT)</td>
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<td>-</td>
<td>-</td>
<td>1.495</td>
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<td>1.495</td>
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<tr>
<td><strong>Description:</strong> A set of data and message</td>
<td>translation services utilizing an Extensible Mark-up Language (XML)</td>
<td></td>
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<tr>
<td>translation services utilizing an</td>
<td>schema and on-line web service to route targeting information to warfighters</td>
<td></td>
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<tr>
<td>Extensible Mark-up Language (XML)</td>
<td>at the tactical edge of operations. Supports future development, test,</td>
<td></td>
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<tr>
<td>schema and on-line web service to</td>
<td>certification, and accreditation of modifications to the XML schema.</td>
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<tr>
<td>route targeting information to</td>
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<td>warfighters at the tactical edge of</td>
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<td>operations. Supports future development,</td>
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<td>test, certification, and accreditation</td>
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<td>of modifications to the XML schema.</td>
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<td><strong>FY 2010 Accomplishments:</strong></td>
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<td><strong>FY 2011 Plans:</strong></td>
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<tr>
<td><strong>FY 2012 Base Plans:</strong></td>
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<tr>
<td><strong>FY 2012 OCO Plans:</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Title:</strong> Other Gateways</td>
<td></td>
<td>5.040</td>
<td>10.757</td>
<td>3.247</td>
<td>-</td>
<td>3.247</td>
</tr>
<tr>
<td><strong>Description:</strong> Other Gateways includes</td>
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<tr>
<td>the Link-16 Alaska effort that provides</td>
<td>communications infrastructure modernization for the Alaskan AOR through</td>
<td></td>
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<tr>
<td>communications infrastructure modernization</td>
<td>line-of-sight and beyond-line-of-sight Link 16 communications to</td>
<td></td>
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<td>early detection, identification, and</td>
<td>facilitate early detection, identification, and intercept of potential</td>
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<td>and intercept of potential threat aircraft.</td>
<td>threat aircraft.</td>
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<tr>
<td><strong>FY 2010 Accomplishments:</strong></td>
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<tr>
<td><strong>FY 2011 Plans:</strong></td>
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<td><strong>FY 2012 Base Plans:</strong></td>
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</table>

Funding will provide for testing of a software and hardware package that connects and translates between multiple communication devices and provides situational awareness, permitting the program to transition to sustainment.
### B. Accomplishments/Planned Programs ($ in Millions)

Funding will provide for completion and transition to sustainment of communications infrastructure modernization for the Alaskan AOR through LOS and beyond LOS Link 16 communications.

**FY 2012 OCO Plans:**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>• PE 0207445F: Fighter TDL, RDT&amp;E AF</td>
<td>66.592</td>
<td>85.492</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>Continuing</td>
</tr>
<tr>
<td>• PE 0207448F: C2ISR TDL, RDT&amp;E AF</td>
<td>1.604</td>
<td>1.584</td>
<td>1.536</td>
<td>0.000</td>
<td>1.536</td>
<td>1.626</td>
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C. Other Program Funding Summary ($ in Millions)

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D. Acquisition Strategy
The Airborne Networking Directorate provides for common development, integration, and interoperability across the entire Airborne Network and ensures that data links are procured and maintained as a joint, end-to-end command and control systems. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

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.
<table>
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<th>Cost To Complete</th>
<th>Total Cost</th>
<th>Target Value of Contract</th>
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<td>iSMART efforts</td>
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### Test and Evaluation ($ in Millions)

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<th>FY 2012 Base</th>
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<th>Cost To Complete</th>
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### Schedule Details

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<td>2012</td>
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</tr>
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<td>JADSI Test</td>
<td>3</td>
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<td>2</td>
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<tr>
<td>JADSI Ver 15 Delivery</td>
<td>3</td>
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<td>JADSI Transition to WR-ALC</td>
<td>3</td>
<td>2012</td>
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<td>1</td>
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<td>2016</td>
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</table>
### 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 5: Development & Demonstration (SDD)

#### R-1 ITEM NOMENCLATURE
PE 0604281F: TACTICAL DATA NETWORKS ENTERPRISE

#### PROJECT
655050: TDL System Integration

<table>
<thead>
<tr>
<th>Events</th>
<th>Quarter</th>
<th>Year</th>
<th>Quarter</th>
<th>Year</th>
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<tr>
<td>Link 16 Alaska (LAK) Development</td>
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<td>1</td>
<td>2011</td>
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<td>LAK Test</td>
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<tr>
<td>TDN Integration Studies and Analysis</td>
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**UNCLASSIFIED**

**Exhibit R-2A, RDT&E Project Justification:** PB 2012 Air Force

**DATE:** February 2011

### APPROPRIATION/BUDGET ACTIVITY

<table>
<thead>
<tr>
<th>3600: Research, Development, Test &amp; Evaluation, Air Force</th>
<th>PE 0604281F: TACTICAL DATA NETWORKS ENTERPRISE</th>
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</thead>
<tbody>
<tr>
<td>BA 5: Development &amp; Demonstration (SDD)</td>
<td>PROJECT 655262: Family of Gateways</td>
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</tbody>
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### R-1 ITEM NOMENCLATURE

<table>
<thead>
<tr>
<th>COST ($ in Millions)</th>
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<th>FY 2011</th>
<th>FY 2012</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>Cost To Complete</th>
<th>Total Cost</th>
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<tr>
<td>655262: Family of Gateways</td>
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</table>

**Note**

FY 2011 funding totals include $30.0M requested for Overseas Contingency Operations.

### A. Mission Description and Budget Item Justification

Funding supports Family of Gateway study, analysis, enhancement, development, integration, demonstration, test, and evaluation efforts that will allow joint combat forces to exchange information quickly and accurately by bridging discrete airborne, terrestrial, maritime, and space-based C4ISR networks to produce operational effects not possible within individual networks. Gateway functions include enabling interoperability between data formats, protocols, and communication mediums. Additionally, gateway functions extend the range of connectivity, consolidate data from multiple networks into high capacity links for transmission to key C2ISR nodes, route information between disadvantaged users, and correlate data from multiple sources to improve accuracy. Gateway functions also provide application hosting, shared data storage, on-demand information access, smart data forwarding, and system monitoring/network management. Funding in this project will also support Quick Reaction Capability requests by the warfighter such as the Battlefield Airborne Communications Node (BACN) and the STRATCOM Distributed Nuclear Command and Control (DNC2) capabilities. Additionally, funding will support activities associated with the Joint Aerial Layer Network (JALN) Analysis of Alternatives.

Efforts in this project include waveform, ground, and quick reaction capability activities.

**Waveforms:**

Waveform activities include, but are not limited to Common Link Integration Processing (CLIP) and Situational Awareness Data Link (SADL). CLIP is a software-only, platform-independent middleware application that provides gateway services between diverse message sets and waveforms. CLIP will initially be fielded on the B-1 and B-52 platforms. SADL integrates US Air Force close air support aircraft with the digitized battlefield via the US Army's Enhanced Position Location Reporting System (EPLRS).

**Ground:**

Ground activities include, but are not limited to the Joint Air Defense System Integrator (JADSI), Joint Range Extension (JRE) functionality [which includes the JRE Transparent Multi-Platform Gateway (TMPG) Equipment Package (JTEP)], Pocket J, and Link 16 Alaska (LAK). Funding will support enhancements to the interoperability and capabilities of fielded gateways through processing capability upgrades, operating system updates, display/graphical user interface upgrades, incorporation of additional messaging standards and protocols, and completion of gateway architecture fielding.

**Quick Reaction Capability:**
Quick Reaction Capability activities include, but are not limited to, BACN, Communications Airborne Layer Expansion (CABLE), and STRATCOM DNC2. Funding will support AF rapid acquisition requirements for communications bridging of waveforms through Gateway technology. Additionally, funding will be utilized for STRATCOM classified capabilities.

Activities also include studies and analysis to support both current program planning and execution and future program planning efforts for Family of Gateways.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

### B. Accomplishments/Planned Programs ($ in Millions)

<table>
<thead>
<tr>
<th>Title: Common Link Integration Processing (CLIP)</th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2011 Plans:</td>
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<tr>
<td>FY 2012 Base Plans:</td>
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<tr>
<td>FY 2012 OCO Plans:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Description:** Common Link Integration Processing efforts provide Link 16 and Joint Range Extension Application Protocol (JREAP) A & C message processing to the B-1B FIDL and B-52 Platforms via a software upgrade.

**FY 2010 Accomplishments:**
Provided an enterprise solution for Link-16 and Joint Range Extension Application Protocol (JREAP) message processing.

**FY 2011 Plans:**
Provides an enterprise solution for Link-16 and Joint Range Extension Application Protocol (JREAP) message processing.

**FY 2012 Base Plans:**
Funding will provide an enterprise solution for Link-16 and Joint Range Extension Application Protocol (JREAP) message processing.

**FY 2012 OCO Plans:**

<table>
<thead>
<tr>
<th>Title: Other Gateways</th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>3.023</td>
<td>-</td>
<td>-</td>
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</tr>
</tbody>
</table>

**FY 2010 Accomplishments:**

**Description:** Other Gateways includes the Link-16 Alaska effort that provides communications infrastructure modernization for the Alaskan AOR through line-of-sight and beyond-line-of-sight Link 16 communications to facilitate early detection, identification, and intercept of potential threat aircraft.
### B. Accomplishments/Planned Programs ($ in Millions)

<table>
<thead>
<tr>
<th>Title</th>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides for integration of communications infrastructure modernization for the Alaskan AOR through LOS and beyond LOS Link 16 communications.</td>
<td>-</td>
<td>17.951</td>
<td>12.415</td>
<td>-</td>
<td>12.415</td>
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<tr>
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<tr>
<td><strong>FY 2012 OCO Plans:</strong></td>
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</tr>
<tr>
<td><strong>Title:</strong> STRATCOM DNC2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Description:</strong> STRATCOM DNC2 efforts provide for the distribution of data from airborne assets to ground components for analysis, decision-making and re-tasking of critical assets.</td>
<td></td>
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</tr>
<tr>
<td><strong>FY 2010 Accomplishments:</strong></td>
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<tr>
<td><strong>FY 2011 Plans:</strong></td>
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<tr>
<td><strong>FY 2012 Base Plans:</strong></td>
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<td><strong>FY 2012 OCO Plans:</strong></td>
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</tr>
<tr>
<td><strong>Title:</strong> Situational Awareness Data Link (SADL)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Description:</strong> Situational Awareness Data Link is the Link 16 gateway for exchange of situational awareness and command &amp; control data based on U.S. Army Enhanced Position Location and Reporting System (EPLRS) radio. This activity develops and integrates capability enhancements to update crypto, facilitate imagery exchange, and support multiple tactical user groups within the network.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>FY 2010 Accomplishments:</strong></td>
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</tr>
<tr>
<td><strong>FY 2011 Plans:</strong></td>
<td></td>
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</tr>
</tbody>
</table>

UNCLASSIFIED
### B. Accomplishments/Planned Programs ($ in Millions)

<table>
<thead>
<tr>
<th>FY 2010</th>
<th>FY 2011</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
</tr>
</thead>
</table>

** PROVIDES A SECURE, ROBUST AIR-AIR AND AIR-GROUND DATA LINK AND A MEANS TO INTEROPERATE WITH LINK 16 THROUGH A GATEWAY. **

**FY 2012 Base Plans:**

**FY 2012 OCO Plans:**

- **Title:** Link 16 Pocket J
- **Description:** Pocket J efforts provide for the primary ground-based TDL gateway supporting North American Aerospace Defense Command (NORAD) air sovereignty mission for Continental United States (CONUS) and President of the United States support.

**FY 2010 Accomplishments:**

**FY 2011 Plans:**

- Funding supports update to technical documents and fielding support for the primary ground-based TDL gateway supporting NORAD air sovereignty mission for CONUS and POTUS support.

**FY 2012 Base Plans:**

**FY 2012 OCO Plans:**

- **Title:** Joint Air Defense System Integrator (JADSI)
- **Description:** Joint Air Defense System Integrator efforts provide command & control centers a common tactical picture by receiving, processing, and correlating TDL, intelligence, and radar feeds.

**FY 2010 Accomplishments:**

**FY 2011 Plans:**

- Funding provides for testing of a software and hardware package that connects and translates between multiple communication devices and provides situational awareness.

**FY 2012 Base Plans:**

**FY 2012 OCO Plans:**

- **Title:** J-Range Ext/Transparent Equip Pkg (JRE/JTEP)
- **FY 2010**
- **FY 2011**
- **FY 2012 Base**
- **FY 2012 OCO**
- **FY 2012 Total**

- 3.318
- 1.669
- -
- -
- -
### B. Accomplishments/Planned Programs ($ in Millions)

**Description:** JRE efforts provide for TDL translation, routing, and forwarding between Link 16 and SADL networks. JTEP efforts provide for connection of line-of-sight networks and long-haul beyond-line-of-sight networks using serial and satellite links.

**FY 2010 Accomplishments:**
Supported development and testing (operational and joint interoperability) of a TDL translator, router, and forwarder connection of LOS networks and long-haul BLOS networks using serial and satellite links.

**FY 2011 Plans:**
Funding supports fielding and completion of technical activities in preparation for transition to sustainment.

**FY 2012 Base Plans:**

<table>
<thead>
<tr>
<th>Description</th>
<th>FY 2010</th>
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<tr>
<td><strong>Description:</strong> Quick Reaction Capabilities include BACN JUON and CABLE.</td>
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<td><strong>FY 2012 Base Plans:</strong></td>
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<td><strong>FY 2012 OCO Plans:</strong></td>
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**Accomplishments/Planned Programs Subtotals**

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<td>23.232</td>
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**Congressional Add:** Battlefield Airborne Communications Node

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</thead>
<tbody>
<tr>
<td>79.300</td>
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</table>

**FY 2010 Accomplishments:** Congressional add for BACN previously in PE 0207434, Link 16 Support and Sustainment, due to an error.

**FY 2011 Plans:**

**Congressional Adds Subtotals**

<table>
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<tr>
<td>79.300</td>
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</table>
C. Other Program Funding Summary ($ in Millions)

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<tr>
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<td>1.584</td>
<td>1.536</td>
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<td>1.338</td>
<td>1.365</td>
<td>1.365</td>
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</tr>
</tbody>
</table>

D. Acquisition Strategy
The Airborne Networking Directorate provides for common development, integration and interoperability across the entire Airborne Network and ensures that data links are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.
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.
### Product Development ($ in Millions)

<table>
<thead>
<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>Contract Cost</th>
<th>Award Date</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
<th>Cost To Complete</th>
<th>Total Cost</th>
<th>Target Value of Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAK development efforts</td>
<td>SS/CPFF</td>
<td>ProLogic:Manassas, VA</td>
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<td>-</td>
<td>-</td>
<td>Continuing</td>
<td>Continuing</td>
</tr>
<tr>
<td>SADL development efforts</td>
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<td>Raytheon:Fullerton, CA</td>
<td>7.753</td>
<td>1.418</td>
<td>May 2011</td>
<td></td>
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<td>-</td>
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</tr>
<tr>
<td>JRE/JTEP development efforts</td>
<td>SS/FFP</td>
<td>L-3 Communications:San Diego, CA</td>
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<td>0.508</td>
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<td>-</td>
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<td>Continuing</td>
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<td>Pocket J development efforts</td>
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<tr>
<td>JADSI development efforts</td>
<td>SS/TBD</td>
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<td></td>
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<td>Continuing</td>
</tr>
<tr>
<td>BACN JUON development efforts</td>
<td>SS/CPFF</td>
<td>Northrop Grumman:San Diego, CA</td>
<td>172.715</td>
<td>18.684</td>
<td>Apr 2011</td>
<td></td>
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### Support ($ in Millions)

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<th>Contract Method &amp; Type</th>
<th>Performing Activity &amp; Location</th>
<th>Total Prior Years Cost</th>
<th>Contract Cost</th>
<th>Award Date</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
<th>Cost To Complete</th>
<th>Total Cost</th>
<th>Target Value of Contract</th>
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<tbody>
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<td><strong>Subtotal</strong></td>
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### Test and Evaluation ($ in Millions)

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<th>Contract Cost</th>
<th>Award Date</th>
<th>FY 2012 Base</th>
<th>FY 2012 OCO</th>
<th>FY 2012 Total</th>
<th>Cost To Complete</th>
<th>Total Cost</th>
<th>Target Value of Contract</th>
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<tr>
<td>46th Test Squadron</td>
<td>PO</td>
<td>46th Test Squadron:Eglin AFB, FL</td>
<td>3.618</td>
<td>0.699</td>
<td>Oct 2010</td>
<td></td>
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<td></td>
<td>3.414</td>
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<td>Continuing</td>
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<tr>
<td>CLIP Navy Support</td>
<td>MIPR</td>
<td>SPAWAR:San Diego, CA</td>
<td>18.101</td>
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<td>Nov 2010</td>
<td>0.330</td>
<td>Nov 2011</td>
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<td>STRATCOM efforts</td>
<td>MIPR</td>
<td>DMEA:McClellan, CA</td>
<td>-</td>
<td>17.951</td>
<td>Apr 2011</td>
<td>12.415</td>
<td>Apr 2012</td>
<td></td>
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## R-1 Item Nomenclature
- PE 0604281F: TACTICAL DATA NETWORKS ENTERPRISE

## Project
- 655262: Family of Gateways

### Test and Evaluation ($ in Millions)

<table>
<thead>
<tr>
<th>Cost Category Item</th>
<th>Contract Method &amp; Type</th>
<th>Performing Activity &amp; Location</th>
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<th>Award Date</th>
<th>Fiscal Year 2011</th>
<th>Cost</th>
<th>Award Date</th>
<th>Fiscal Year 2012 Base</th>
<th>Cost</th>
<th>Award Date</th>
<th>Fiscal Year 2012 OCO</th>
<th>Cost</th>
<th>Award Date</th>
<th>Fiscal Year 2012 Total</th>
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<td>Various Test Centers, Test Equipment, etc.</td>
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### Management Services ($ in Millions)

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<th>Cost</th>
<th>Award Date</th>
<th>Fiscal Year 2012 Base</th>
<th>Cost</th>
<th>Award Date</th>
<th>Fiscal Year 2012 OCO</th>
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<th>Award Date</th>
<th>Fiscal Year 2012 Total</th>
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<tr>
<td>A&amp;AS support</td>
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<tr>
<td>Travel, Government Purchase Cards, Telephones, etc.</td>
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### Total Prior Years Cost

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### Remarks
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<th>R-1 ITEM NOMENCLATURE</th>
<th>PROJECT</th>
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<td>End</td>
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<tr>
<td>Common Link Integration Processing (CLIP) Development</td>
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<td>CLIP Transition to WR-ALC</td>
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<td>Situational Awareness Data Link (SADL) Development</td>
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<td>SADL Transition to WR-ALC</td>
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<td>J-Range Extension/Transparent Equipment Package (JRE/JTEP) Development</td>
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<td>JADSI Test</td>
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<td>Battlefield Airborne Communications Node (BACN) Joint Urgent Operational Need (JUON) Development</td>
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<tr>
<td>BACN JUON Delivery</td>
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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 5: Development & Demonstration (SDD)

**R-1 ITEM NOMENCLATURE**
PE 0604281F: TACTICAL DATA NETWORKS ENTERPRISE

**PROJECT**
655262: Family of Gateways

<table>
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<th>Events</th>
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<td>2013</td>
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<td>STRATCOM Insertion and Modeling and Simulation</td>
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