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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2013 Air Force **DATE:** February 2012

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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 0305236F: <i>CDL</i> |
|--|---|

| COST (\$ in Millions)                 | FY 2011 | FY 2012 | FY 2013 Base | FY 2013 OCO | FY 2013 Total | FY 2014 | FY 2015 | FY 2016 | FY 2017 | Cost To Complete | Total Cost |
|---------------------------------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element                 | -       | -       | 38.094       | -           | 38.094        | 38.503  | 39.587  | 40.754  | 41.292  | Continuing       | Continuing |
| 674819: <i>Common Data Link (CDL)</i> | -       | -       | 38.094       | -           | 38.094        | 38.503  | 39.587  | 40.754  | 41.292  | Continuing       | Continuing |
| Quantity of RDT&E Articles            | 0       | 0       | 0            | 0           | 0             | 0       | 0       | 0       | 0       |                  |            |

## Note

In FY 2013, this is a new PE. In FY 2013, Project 674819, Common Data Link, efforts transfer from PE 0305206F, Airborne Reconnaissance, Project 674819, Common Data Link, in order to provide better visibility for this congressionally mandated capability and prepare for expanded applications as new operational concepts come into existence.

## A. Mission Description and Budget Item Justification

Common Data Link (CDL) provides the DoD standard for interoperable, multi-service, multi-agency, wideband datalinks for manned/unmanned platforms performing Intelligence, Surveillance, and Reconnaissance (ISR) missions. As the CDL Executive Agent (EA), the Air Force is responsible for cross-service application of CDL RDT&E funds facilitating compliance to Congressional and DoD mandates. Military Intelligence Program (MIP) funds are used to maintain, distribute, and upgrade the CDL specifications while ensuring design configuration, commonality, and interoperability among ISR platforms. Additionally, funds are used for the management of resources allocated for development and migration of CDL technologies. Updates to the CDL specification and developmental systems impact 10,000+ DoD airborne and ground ISR systems. The CDL program enables compliance with OSD and Congressional mandates to minimize spectrum usage, use of cryptographic equipment, and direct support to current operations. The CDL specifications permit current and future ISR assets to operate worldwide by providing sensor data directly via point-to-point broadcast to ground sites, airborne platforms and dismounted users. CDL is a vital link in DoD's emerging communication architectures. CDL provides the capability to relay data via air-to-air or compatible satellite links when the asset and ground site are not in line-of-sight. CDL provides the largest bandwidth datalink in DoD, accommodating numerous sensors collecting Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), and video data. Research and development activities include achieving higher data rates for CDL, operations in other spectral bands, and support of large area surveillance missions, while supporting continuous improvements and implementation of line-of-sight platform and CDL terminal Command and Control, plus increased Intelligence, Surveillance, and Reconnaissance (C2ISR) capabilities. Activities also include studies and analysis to support current and future program planning and execution. CDL terminal designs provide for future technology insertion and reduce non-recurring engineering and life-cycle costs to the user.

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

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force  |  |   |         | DATE: February 2012 |             |               |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: Research, Development, Test & Evaluation, Air Force<br>BA 7: Operational Systems Development  |  | R-1 ITEM NOMENCLATURE<br>PE 0305236F: CDL |         |                     |             |               |
| B. Program Change Summary (\$ in Millions)   |  | FY 2011                                   | FY 2012 | FY 2013 Base        | FY 2013 OCO | FY 2013 Total |
| Previous President's Budget  |  | -   | -       | 38.094              | -           | 38.094        |
| Current President's Budget   |  | -   | -       | 38.094              | -           | 38.094        |
| Total Adjustments  |  | -   | -       | -                   | -           | -             |
| • Congressional General Reductions   |  | -   | -       |                     |             |               |
| • Congressional Directed Reductions  |  | -   | -       |                     |             |               |
| • Congressional Rescissions  |  | -   | -       |                     |             |               |
| • Congressional Adds   |  | -   | -       |                     |             |               |
| • Congressional Directed Transfers   |  | -   | -       |                     |             |               |
| • Reprogrammings   |  | -   | -       |                     |             |               |
| • SBIR/STTR Transfer   |  | -   | -       |                     |             |               |
| • Other Adjustments  |  | -   | -       | -                   | -           | -             |
| Change Summary Explanation   |  |   |         |                     |             |               |
| In FY13, Project 674819, Common Data Link, efforts transferred from PE 35206F to PE 0305236F   |  |   |         |                     |             |               |
| C. Accomplishments/Planned Programs (\$ in Millions)   |  |   |         | FY 2011             | FY 2012     | FY 2013       |
| Title: CDL Technology Advancement  |  |   |         | -                   | -           | 24.598        |
| Description: CDL evolutionary terminal development, advanced technology insertion, demonstrations, and studies per CDL IPT direction to the CDL Executive Agent(CDL EA).   |  |   |         |                     |             |               |
| FY 2011 Accomplishments:<br>N/A  |  |   |         |                     |             |               |
| FY 2012 Plans:<br>N/A  |  |   |         |                     |             |               |
| FY 2013 Plans:<br>Will continue development and testing of Higher Data Rates to existing and emerging terminals, plus additional Size, Weight and Power (SWaP) improvements. Will continue technology developments for adapting/testing networking and more effective portable ground and lightweight airborne terminal components, continuation of multispectral operations flexibility, increased spectrum efficiency, and integration of improved transmission components. Will continue development of enhanced, CDL-based ISR communications capabilities across multiple platforms and rapid prototyping efforts. Will continue support of emerging communication backbone architecture development across space, air, and terrestrial layers including agile high capacity data transport and creating mobile network hubs. |  |   |         |                     |             |               |
| Title: CDL specification maintenance and development   |  |   |         | -                   | -           | 13.496        |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2013 Air Force   |                |                |                         |   |                          |                | <b>DATE:</b> February 2012 |                |                |                             |                   |
| <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 0305236F: <i>CDL</i> |                          |                |                            |                |                |                             |                   |
| <b>C. Accomplishments/Planned Programs (\$ in Millions)</b>  |                |                |                         |   |                          |                |                            |                |                |                             |                   |
| <b>Description:</b> CDL specification testing, maintenance, development, validation, configuration control, and distribution per CDL IPT direction to CDL EA.<br><br><b>FY 2011 Accomplishments:</b><br>N/A<br><br><b>FY 2012 Plans:</b><br>N/A<br><br><b>FY 2013 Plans:</b><br>Will continue researching and/or developing upgrades to support current and future specification employment profiles and include adding capabilities required to support Joint Aerial Layer Network and other emerging operational capabilities. Will enhance spectrally efficient CDL waveform specification. Will continue to work with CDL industry and Services to document, validate, and implement common terminal control interfaces through the use of commercially recognized standards. Will continue to maintain configuration control of the CDL architecture, standards, specifications, and modules. |                |                |                         |   |                          |                | <b>FY 2011</b>             | <b>FY 2012</b> | <b>FY 2013</b> |                             |                   |
| <b>Accomplishments/Planned Programs Subtotals</b>  |                |                |                         |   |                          |                | -                          | -              | 38.094         |                             |                   |
| <b>D. Other Program Funding Summary (\$ in Millions)</b>   |                |                |                         |   |                          |                |                            |                |                |                             |                   |
| <b>Line Item</b>   | <b>FY 2011</b> | <b>FY 2012</b> | <b>FY 2013<br/>Base</b> | <b>FY 2013<br/>OCO</b>                                  | <b>FY 2013<br/>Total</b> | <b>FY 2014</b> | <b>FY 2015</b>             | <b>FY 2016</b> | <b>FY 2017</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • N/A: N/A   | 0.000          | 0.000          | 0.000                   | 0.000   | 0.000                    | 0.000          | 0.000                      | 0.000          | 0.000          | Continuing                  | Continuing        |
| <b>E. Acquisition Strategy</b>   |                |                |                         |   |                          |                |                            |                |                |                             |                   |
| The CDL Executive Agent, supported by each of the Services' CDL programs, the Airborne Network Division (ESC/HNA,) the Service laboratories, and the Defense Information Systems Agency (DISA), provides for development of interoperable wideband ISR data links as mandated by Assistant Secretary of Defense (Networks and Information Integration) (ASD(NII)) policy. Once CDL technology development matures, platforms are responsible for program CDL procurement, National Security Agency (NSA) and DISA certifications, integration, and installation. Acquisition strategy varies by contract. When possible, contracts are awarded under full and open competition.  |                |                |                         |   |                          |                |                            |                |                |                             |                   |
| <b>F. 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-4, RDT&E Schedule Profile: PB 2013 Air Force  |  | DATE: February 2012                              |
| APPROPRIATION/BUDGET ACTIVITY<br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i><br>BA 7: <i>Operational Systems Development</i> | R-1 ITEM NOMENCLATURE<br>PE 0305236F: <i>CDL</i> | PROJECT<br>674819: <i>Common Data Link (CDL)</i> |
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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Air Force   |   |   | <b>DATE:</b> February 2012 |
| <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 0305236F: <i>CDL</i> | <b>PROJECT</b><br>674819: <i>Common Data Link (CDL)</i> |                            |

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| CDL Waveform RDT&E   | 1       | 2013 | 4       | 2017 |
| High Data Rate CDL Development                                     | 1       | 2013 | 4       | 2015 |
| SWaP, Networking, Spectral Terminal Test & Enhancements            | 1       | 2013 | 4       | 2016 |
| MR-TCDL Terminal Test & Enhancement                                | 1       | 2013 | 4       | 2013 |
| Rapid Prototyping  | 1       | 2013 | 4       | 2014 |
| CDL Specification Maintenance, Development & Configuration Control | 1       | 2013 | 4       | 2017 |
| CDL Test Equipment Development & Enhancement                       | 1       | 2013 | 4       | 2016 |
| Joint Comms Layer Specification Development                        | 1       | 2013 | 4       | 2015 |
| Bandwidth, Spectrum, Networking, & Common Control Interface        | 1       | 2013 | 4       | 2014 |