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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force **Date:** March 2014

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0305236F / <i>Common Data Link (CDL)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	33.630	33.899	36.137	-	36.137	58.279	49.100	47.136	47.946	Continuing	Continuing
674819: <i>Common Data Link (CDL)</i>	-	33.630	33.899	36.137	-	36.137	58.279	49.100	47.136	47.946	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

A. Mission Description and Budget Item Justification

Common Data Link (CDL) provides the DoD standard for interoperable, multi-service, multi-agency, Intelligence, Surveillance, and Reconnaissance (ISR) datalinks for 10,000+ DoD manned/unmanned airborne and ground platforms. As the DoD CDL Executive Agent (EA), the Air Force is responsible for cross-service application of CDL RDT&E Military Intelligence Program (MIP) funds facilitating compliance to Congressional and DoD mandates. The EA develops, modifies, distributes, and maintains specifications for the CDL waveform family; ensuring design configuration control, commonality, and interoperability among ISR platforms. Additionally, funds support managing resources allocated for development, maturation, and migration of CDL technologies.

CDL enables compliance with OSD and Congressional mandates to effectively utilize spectrum, use approved cryptographic equipment, and provide direct support to current operations. CDL is a vital link in DoD's existing and emerging communication architectures, providing flexibility to accommodate Command and Control (C2) data and myriad types of Signals Intelligence (SIGINT), Geospatial Intelligence (GEOINT), and Full-Motion Video (FMV) data. The CDL specifications permit current and future ISR asset operations worldwide by providing sensor data directly via point-to-point broadcast to ground sites, airborne platforms and dismounted users. Also, 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's research and development activities support a broad swath of tactical, operational, and strategic ISR users and include achieving higher data rates, multi-access and multi-node network management, crypto modernization, advancements needed to operate in contested environments, terminal and antenna design enhancements, operations in other spectral bands, and improving spectrum efficiency. Further, CDL development improves large area surveillance missions while supporting continuous improvements and implementation of line-of-sight platform and CDL terminal Command and Control (C2), plus increased ISR (C2ISR) capabilities. Activities also include studies and analysis to support current and future requirements documentation, program planning and execution. CDL prototype terminal designs provide for future technology insertion and reduce non-recurring engineering and life-cycle costs to the user.

In addition, the Gigabit Encryption thrust enables CDL to develop a miniaturized gigabit rate Communication Security (COMSEC) device capable of managing CDL data. The miniaturized COMSEC device will allow faster throughput while reducing Size, Weight, and Power (SWaP) requirements.

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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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	38.094	40.503	41.087	-	41.087
Current President's Budget	33.630	33.899	36.137	-	36.137
Total Adjustments	-4.464	-6.604	-4.950	-	-4.950
• Congressional General Reductions	-0.049	-0.080			
• Congressional Directed Reductions	-1.400	-6.524			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-3.015	-	-4.950	-	-4.950

Change Summary Explanation

FY 2013: Congressional Directed Reductions row (-\$1.4M); Other Adjustments row (-\$3.015M) due to sequestration.

FY 2014: Congressional Directed Reductions row (-\$6.524M) due to program reduction.

FY 2015: Other Adjustment row (-\$4.950M) due to higher AF priorities.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
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Title: Common Data Link (CDL) Technology Advancement	29.675	24.863	26.035
Description: CDL evolutionary terminal development, advanced technology insertion, demonstrations, and studies per CDL Integrated Product Team (IPT) direction to the CDL Executive Agent (CDL EA).			
FY 2013 Accomplishments: Continued the development and testing of Higher Data Rates to existing and emerging terminals, plus additional Size, Weight and Power (SWaP) improvements. Continued the 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. Continued development of enhanced, CDL-based ISR communications capabilities across multiple platforms and rapid prototyping efforts. Continued support of emerging communication backbone architecture development across space, air, and terrestrial layers including agile high capacity data transport and creating mobile network hubs.			
FY 2014 Plans: Continue development and testing of Higher Data Rates to existing and emerging terminals, plus additional Size, Weight and Power (SWaP) improvements. Continue technology developments for adapting/testing networking and more effective portable ground and lightweight airborne terminal components, continuation of multispectral operations flexibility, increased			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
<p>spectrum efficiency, and integration of improved transmission components. Continue development of enhanced, CDL-based ISR communications capabilities across multiple platforms and rapid prototyping efforts. Continue support of emerging communication backbone architecture development across space, air, and terrestrial layers; including agile high capacity data transport, assured communications, and multi-note access networks.</p> <p>FY 2015 Plans: 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, assured communications, and multi-note access networks.</p>				
<p>Title: Common Data Link (CDL) Specification Maintenance and Development</p> <p>Description: CDL specification testing, maintenance, development, validation, configuration control, and distribution per CDL Integrated Product Team (IPT) direction to CDL Executive Agent (EA).</p> <p>FY 2013 Accomplishments: Continued research and development upgrades of current and future specification employment profiles to include the adding of capabilities required to support Joint Aerial Layer Network and other emerging operational capabilities. Enhanced spectrally efficient CDL waveform specification. Continued to work with CDL industry and Services to document, validate, and implement common terminal control interfaces through the use of commercially recognized standards. Continued to maintain configuration control of the CDL architecture, standards, specifications, and modules.</p> <p>FY 2014 Plans: 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. This includes CDL specification maintenance, validation, development, and configuration management of BE Rev (B). Enhance spectrally efficient CDL waveform specification. Continue to work with CDL industry and Services to document, validate, and implement common terminal control interfaces through the use of commercially recognized standards. Continue to maintain configuration control of the CDL architecture, standards, specifications, and modules.</p> <p>FY 2015 Plans: 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. This will include</p>		3.955	7.036	8.602

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
CDL specification maintenance, validation, development, and configuration management of BE Rev (B). 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.				
<p>Title: Gigabit Encryption</p> <p>Description: Develop a miniaturized gigabit rate COMSEC device capable of handling CDL data rates. Miniaturizing COMSEC components will enable faster data throughput (greater than 12 GBPS) and reduce size, weight, and power. Once developed, CDL users will have to procure COMSEC components and fund installation/integration.</p> <p>FY 2013 Accomplishments: N/A</p> <p>FY 2014 Plans: Initiate the development effort to build the gigabit encryption device which will be eventually fielded on numerous platforms. This device will allow faster data throughput and reduce the size, weight and power.</p> <p>FY 2015 Plans: Will continue the development effort to build the gigabit encryption device which will be eventually fielded on numerous platforms. This device will allow faster data throughput and reduce the size, weight and power.</p>		-	2.000	1.500
Accomplishments/Planned Programs Subtotals		33.630	33.899	36.137
D. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
E. Acquisition Strategy The Air Force, designated as the Common Data Link (CDL) Executive Agent, supported by each of the Services' CDL program's Service laboratories, the Airborne Network Division (AFLCMC/HNA), and the Defense Information Systems Agency (DISA), provide for development of interoperable ISR data links as mandated by the 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), Joint Interoperability Test Command (JITC), and DISA certifications, integration, and installation. Acquisition strategy varies by contract. When possible, contracts are awarded under full and open competition.				

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

R-1 Program Element (Number/Name)
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F. 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force

Date: March 2014

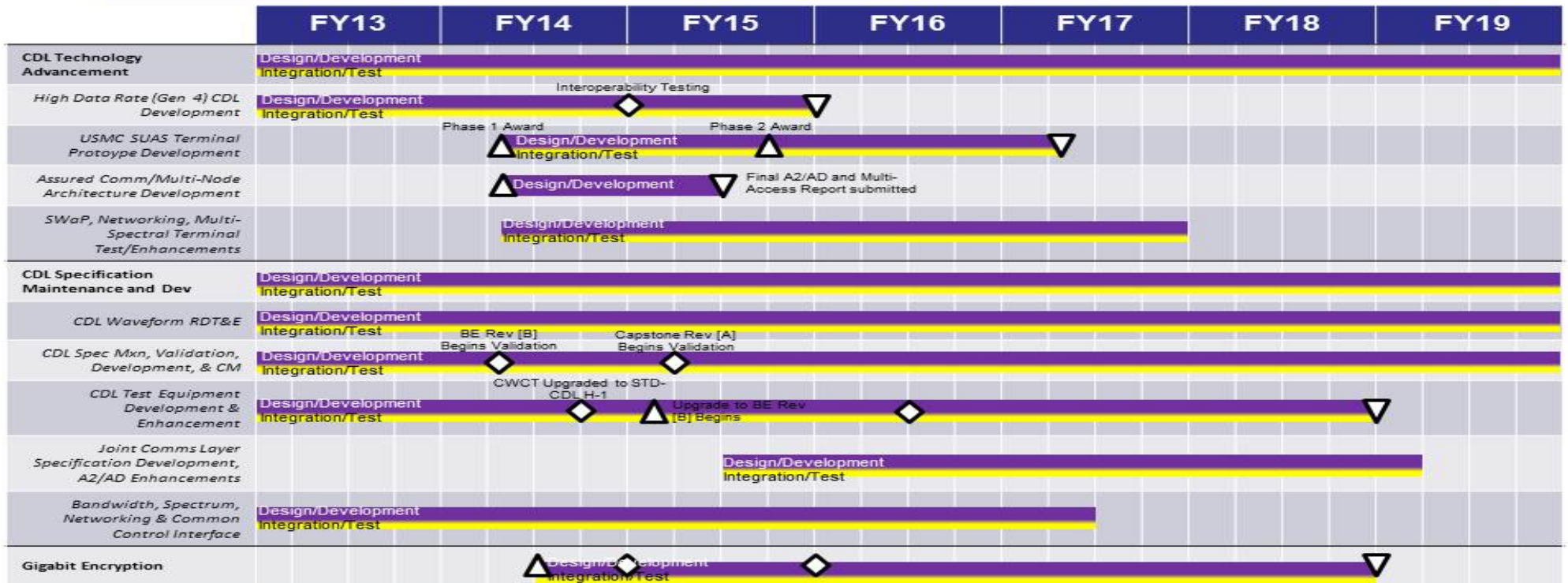
Appropriation/Budget Activity
3600 / 7

R-1 Program Element (Number/Name)
PE 0305236F / Common Data Link (CDL)

Project (Number/Name)
674819 / Common Data Link (CDL)



Common Data Link Initiatives



Concept Activities	Design/Development	Integration/Test	Production/Fielding	Contract Award Key Events
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