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

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	1.604	1.584	1.536	-	1.536	1.626	1.650	1.674	1.703	Continuing	Continuing
675045: <i>C2ISR Tactical Data Link</i>	1.604	1.584	1.536	-	1.536	1.626	1.650	1.674	1.703	Continuing	Continuing

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. 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), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), and Tactical Targeting Network Technology (TTNT). TDL efforts include incorporating changes and additions to the Link-16 message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs), assisting with AF and Joint interoperability certification testing with the Air Force Command and Control Integration Center (AFC2IC) and Joint Interoperability Test Center (JITC); future development, integration, and verification of Operational Flight Program (OFP) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS. This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among ground and C2 platforms and responds to Quick Reaction Capability integration and demonstration including, but not limited to Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), the Air and Space Operations Center (AOC), Global Hawk, Predator, Reaper, Rivet Joint, Combat Sent, and Cobra Ball. TDLs keep all C2ISR Platforms and data linked weapons current/interoperable in the Airborne Network to enable Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. Activities also include studies and analysis to support both current program planning and execution and future program planning to include the period of dual E-3 AWACS mission configuration ending in FY15.

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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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
3600: <i>Research, Development, Test & Evaluation, Air Force</i>	PE 0207448F: <i>C2ISR Tactical Data Link</i>
BA 7: <i>Operational Systems Development</i>	

B. Program Change Summary (\$ in Millions)	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	1.659	1.584	1.608	-	1.608
Current President's Budget	1.604	1.584	1.536	-	1.536
Total Adjustments	-0.055	-	-0.072	-	-0.072
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.048	-			
• Other Adjustments	-0.007	-	-0.072	-	-0.072

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0207448F: C2ISR Tactical Data Link				PROJECT 675045: C2ISR Tactical Data Link			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675045: C2ISR Tactical Data Link	1.604	1.584	1.536	-	1.536	1.626	1.650	1.674	1.703	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
Tactical Data Links (TDL), as a subset of the broader Airborne Network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with new and standardized waveforms and data formats allowing Line of Sight (LOS) and Beyond Line of Sight (BLOS) intra- and inter-flight communications. TDLs increase mission effectiveness, provide situational awareness, and provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. 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), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), and Tactical Targeting Network Technology (TTNT). TDL efforts include incorporating changes and additions to the Link-16 message standard (MIL-STD-6016D) and applicable Interface Change Proposals (ICPs), assisting with AF and Joint interoperability certification testing with the Air Force Command and Control Integration Center (AFC2IC) and Joint Interoperability Test Center (JITC); future development, integration, and verification of Operational Flight Program (OFP) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS. This effort provides critical capability and enhancements to the Airborne Network by creating common development, integration and interoperability among ground and C2 platforms and responds to Quick Reaction Capability integration and demonstration including, but not limited to Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), the Air and Space Operations Center (AOC), Global Hawk, Predator, Reaper, Rivet Joint, Combat Sent, and Cobra Ball. TDLs keep all C2ISR Platforms and data linked weapons current/interoperable in the Airborne Network to enable Global Strike (GS), Global Persistent Attack (GPA), Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions. Activities also include studies and analysis to support both current program planning and execution and future program planning to include the period of dual E-3 AWACS mission configuration ending in FY15.											
This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: C2ISR Tactical Data Link Integration - TCS/TACPod Assessment							1.604	-	-	-	-
Description: This effort seeks to address emerging COCOM communications shortfalls through rapid prototyping, demonstration, and operational assessment of the voice and data range extension and voice bridging capabilities of a Tactical Communication Suite integrated into a pod.											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0207448F: C2ISR Tactical Data Link	PROJECT 675045: C2ISR Tactical Data Link				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: This effort is to integrate, demonstrate, and assess the operational utility of one or more airborne Tactical Airborne Communications Pods (TACPod) on platforms which may include one or more of the following based upon availability: manned aircraft, Remotely Piloted Aircraft (MQ-1, MQ-9, or surrogate), AEROSTAT variants, and/or Lighter-Than-Airships (LTAs). FY 2011 Plans: FY 2012 Base Plans: FY 2012 OCO Plans:						
Title: C2ISR Data Link Integration and AWACS Block 30/35 Software Enhancements Description: Improve AWACS Block 30/35 Link 16 interoperability and compatibility by incorporating key changes to communications software baseline. FY 2010 Accomplishments: FY 2011 Plans: Mode 5 Data Exchange: Accomplish technical tasks associated with the IFF Mode 5 Data Exchange effort (ICP Number TM03-068) leading to products such as a Delta Change Package, Design Interface Papers, software modules, Integration Test Report (ITR), and IFF Mode 5 Data Exchange compliance documentation. FY 2012 Base Plans: C2ISR Data Link Strength Track Reporting: Implementation of Strength Track Reporting improves situation awareness by ensuring consistency in the initiation and handling of air track in instances where single tracks are reported on the network but it is known that these tracks actually represent more than one aircraft moving as a formation. FY 2012 OCO Plans:		-	1.584	1.536	-	1.536
Accomplishments/Planned Programs Subtotals		1.604	1.584	1.536	-	1.536

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development			R-1 ITEM NOMENCLATURE PE 0207448F: C2ISR Tactical Data Link				PROJECT 675045: C2ISR Tactical Data Link				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0207445F: Fighter TDL RDT&E AF	66.592	85.492	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0604281F: TDN Enterprise RDT&E AF	160.316	102.941	52.355	0.000	52.355	32.351	37.081	30.846	31.438	Continuing	Continuing
• PE 0207445F (2): Fighter TDL APAF	9.585	0.929	0.741	0.000	0.741	0.000	14.609	14.610	14.361	Continuing	Continuing
• PE 0207446F: Bomber TDL APAF	0.000	0.000	0.000	0.000	0.000	0.000	1.796	1.756	1.506	Continuing	Continuing
• PE 0207448F: C2ISR TDL APAF	0.000	0.000	0.957	0.000	0.957	0.910	0.925	1.726	1.756	Continuing	Continuing
• PE 0604281F (5): TDN Enterprise APAF	18.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• PE 0207448F (6): C2ISR TDL OPAF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.732	15.464	Continuing	Continuing
• PE 0604281F (7): TDN Enterprise OPAF	34.613	21.742	10.498	0.000	10.498	0.269	0.248	0.169	0.170	Continuing	Continuing
• PE 0207434F: Link 16 Support & Sustainment O&M AF	18.621	0.000	0.000	0.000	0.000	0.000	1.766	3.333	5.391	Continuing	Continuing
• PE 0207445F (9): Fighter TDL O&M AF	0.155	0.221	0.217	0.000	0.217	0.246	0.248	0.253	0.259	Continuing	Continuing
• PE 0401839F: Air Mobility TDL O&M AF	7.862	7.892	2.054	0.000	2.054	0.112	0.149	1.338	1.365	Continuing	Continuing
• PE 0604281F (11): TDN Enterprise O&M AF	261.763	31.318	39.867	0.000	39.867	33.886	36.705	37.662	38.612	Continuing	Continuing
D. Acquisition Strategy											
The Airborne Networking Division provides for common development, integration and interoperability across the entire Airborne Network and ensures that TDLs 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.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0207448F: C2ISR Tactical Data Link				PROJECT 675045: C2ISR Tactical Data Link						
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
AWACS - Mode 5 Data Exchange	SS/Various	Boeing:Seattle, WA	-	1.020	May 2011	-		-		-	Continuing	Continuing	TBD	
AWACS - Strength Track Reporting	SS/Various	Boeing:Seattle, WA	-	-		1.110	Nov 2011	-		1.110	Continuing	Continuing	TBD	
TCS/TACPod	SS/TBD	Ultra Electronics:San Antonio, TX	0.842	-		-		-		-	Continuing	Continuing	TBD	
Subtotal			0.842	1.020		1.110		-		1.110				
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Office and Contractor Support	Various	Various:Various,	1.079	0.564	Feb 2011	0.426	Feb 2012	-		0.426	Continuing	Continuing	TBD	
Subtotal			1.079	0.564		0.426		-		0.426				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force								DATE: February 2011						
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				Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals				1.921	1.584		1.536		-		1.536			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207448F: <i>C2ISR Tactical Data Link</i>	PROJECT 675045: <i>C2ISR Tactical Data Link</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mode 5 IFF Message Processing	3	2011	4	2012
Strength Track Reporting	3	2012	3	2013
Critical System ICPs	3	2013	4	2016
TacPod Assessment	4	2010	1	2012
Analysis/Critical System ICPs/Improvements	1	2013	4	2016

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