Exhibit R-2, RDT&E Budget Item 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 0207423F: *Advanced Communications Systems*					

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	61.430	67.532	90.083	-	90.083	194.387	249.469	494.156	610.430	Continuing	Continuing
674934: *Tactical Air Control Party (TACP)*	16.558	17.298	-	-	-	-	-	-	-	Continuing	Continuing
675189: *C2ISR JTRS Integration*	44.872	50.234	90.083	-	90.083	194.387	249.469	494.156	610.430	Continuing	Continuing

Note

In FY2012, Project 674934, Tactical Air Control Party,efforts transferred to PE 0207444F, Tactical Air Control Party, Project 676013, Equipment Modernization, in order to better identify and delineate efforts for Tactical Air Control Party Modernization.

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is acquiring new equipment to give TACPs the capability to detect targets and compute precise target coordinates for employment of GPS aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment shortens the kill chain by reducing the time required to submit air support requests, provide target information to aircraft, and ensure pilots are tracking the correct target. By reducing the time required to execute close air support missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S. and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, other Joint Fires assets, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/agencies. The TACP-M program provides TACP, Air Support Operations Centers (ASOCs), and Tactical Operations Center (TOCs) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Streaming Video Receiver) technology. Upgraded digital communications enable machine-to- machine interface between TACPs and Close Air Support (CAS) aircraft, Army units and other TACP units. Machine-to-machine communication provides reliable, high speed digital communications, ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports the Overseas Contingency Operations (OCO) and significantly increased the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. The TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

TACP-M is divided into three segments: Dismounted, Mounted, and Software. The TACP provides modernized, modular, re-locatable and man portable capabilities via streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs) (including Laser Range Finder (LRFs), Joint Effects Targeting System (JETS) laser designators and imagers), tactical computers, and ancillary equipment combined with Close Air Support System (CASS) software for dismounted, ASOC, and TOC use. TACP mounted segment upgrades existing TACP communications systems with new Software Communication Architecture (SCA)-CERTIFIED, Joint Tactical Radio System (JTRS) or available software programmable radios, legacy radios, and ancillary

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2012 Air Force		**DATE:** February 2011
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components, which provide reliable communications for CAS and other air support operations. TACP-M will integrate Internet Protocol (IP)-capable, SCA radios for voice & data UHF SATCOM and LOS UHF /VHF communications. TACP-M funds will continue to develop systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (TECS software development), Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected (MRAP) vehicle, Gateway Lite, and ASOC Gateway vehicle) and will provide interoperability datalinks such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities.

Mounted overseas contingency operations also require new digital communications/network enabled capabilities integrated in armored vehicle platforms including High Mobility, Multi-Wheeled Vehicles (HMMWV), Stryker, Mine Resistant Ambush Protected (MRAP) and other vehicle platforms used in times of conflict. The Air Force has requested acceleration of a vehicular communications capability into TACP Stryker Light Armored Vehicle (LAV) and other tactical vehicles.

Joint Tactical Radio System (JTRS) is the Department of Defense (DoD) family of interoperable, modular, software-defined radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. Joint Tactical Radio Systems (JTRS) will link the power of the Global Information Grid (GIG) to the warfighter in applying fire effects and achieving overall battlefield superiority. By developing and implementing an open architecture of cutting-edge radio waveform technology, multiple radio types (e.g., handheld, ground-mobile, airborne, maritime, etc.) are now capable of communicating with one another.   JTRS radios are intended to interoperate with existing radio systems and improve Joint warfighting through a series of new, joint networking waveforms enabling communication via voice, data, and video over mobile, ad-hoc, internet protocol (IP) based networks. Each radio will operate as a node in the network to ensure secure wireless communication and networking services for airborne, mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. These waveforms included the Mobile User Objective System (MUOS), which provides next generation SATCOM beyond-line-of-sight (BLOS)communications, as well as the Wideband Networking Waveform (WNW) and the Soldier Radio Waveform(SRW) which provide interoperability with Army ground forces from the bridade level down to the dismounted soldier. Together these waveforms enable Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR) and other Joint missions. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. The Enterprise Business Model, incorporating a common set of shared open system standards, promotes competition and reduces procurement costs for the DoD.

Air Force JTRS will support the development of a common integration solution and acquisition plan across multiple AF platforms as well as unique integration solutions to meet platform specific requirements. Non-recurring engineering investment in JTRS integration hardware, software, and risk reduction efforts is required to successfully integrate these digital radios on Air Force platforms, display information received and transmitted over these radios for operator use, and integrate JTRS information with information from other aircraft systems. This hardware and software includes racks, cabling, digital processors and data displays necessary to integrate JTRS radio sets, onto multiple Air Force platforms. Development activities support the close coordination with the JTRS JPEO, industry, and the platform program offices to ensure successful and efficient integration of JTRS radios onto a wide variety of unique AF platforms.

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.

Exhibit R-2, RDT&E Budget Item 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 0207423F: *Advanced Communications Systems*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	73.009	67.532	112.409	-	112.409
Current President's Budget	61.430	67.532	90.083	-	90.083
Total Adjustments	-11.579	-	-22.326	-	-22.326
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.266	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-9.375	-			
• SBIR/STTR Transfer	-1.938	-			
• Other Adjustments	-	-	-22.326	-	-22.326

Change Summary Explanation

Reprogramming action moved $9.375M of OCO funding for ROVER that was inadvertently added to this PE to its proper location, PE 0207277F.

Funding increases over the FY11 level beginning in FY12 support the development of JTRS radio integration solutions. Challenges indentified in integrating the Airborne and Maritime/Fixed Station(AMF)Small Airborne (SA) radio onto 22 unique AF platforms (approximately 2400 aircraft) prompted an increase to the non-recurring engineering (NRE) required. This funding supports the development and risk reduction of a common integration solution to support multiple platforms as well as the hardware/software development and testing required by each unique platform. The funding ramp supports an increased numbers of platforms that will begin integration outside the FYDP.

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 0207423F: *Advanced Communications Systems*	PROJECT 674934: *Tactical Air Control Party (TACP)*

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
674934: *Tactical Air Control Party (TACP)*	16.558	17.298	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, PE 0207423F, Advanced Communications Systems, Project 674934, Tactical Air Control Party (TACP), efforts were transferred to PE 0207444F, Project 676013, Equipment Modernization, in order to better identify and delineate efforts for Tactical Air Control Party Modernization.

A. Mission Description and Budget Item Justification

The TACP-Modernization (TACP-M) program is acquiring new equipment to give TACPs the capability to detect targets and compute precise target coordinates for employment of GPS aided weapons, reduce the potential for fratricide, and reduce the potential for collateral damage in civilian-occupied areas. This new equipment shortens the kill chain by reducing the time required to submit air support requests, provide target information to aircraft, and ensure pilots are tracking the correct target. By reducing the time required to execute close air support missions in "troops-in-contact" situations, the TACP-M program helps reduce the number of U.S. and coalition casualties due to enemy action. TACPs deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), airlift and AF surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment needed to interface with ground maneuver forces, aircraft conducting CAS operations, other Joint Fires assets, aerospace C2 aircraft/agencies, and Intelligence, Surveillance and Reconnaissance (ISR) platforms/agencies. The TACP-M program provides TACP, Air Support Operations Centers (ASOCs), and Tactical Operations Center (TOCs) personnel with the capability to precisely locate and target enemy ground forces by integrating various Laser Targeting Devices (LTD) and ultra high frequency satellite communications (UHF SATCOM) for beyond-line-of-sight (BLOS) Air Force Air Request Net operations. The purpose of the TACP-M program is to reduce reliance on voice transmission and replace analog equipment with the latest digital, data link and streaming video (e.g. Streaming Video Receiver) technology. Upgraded digital communications enable machine-to- machine interface between TACPs and Close Air Support (CAS) aircraft, Army units and other TACP units. Machine-to-machine communication provides reliable, high speed digital communications, ultimately supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flows/information exchange, and reduces potential fratricide. The TACP-M program supports the Overseas Contingency Operations (OCO) and significantly increased the mission effectiveness of the TACPs and ASOCs during Operation Enduring Freedom and Operation New Dawn. The TACP-M program continues to be instrumental in providing ground communications for TACPs during federal emergency relief operations and Homeland Defense initiatives.

TACP-M is divided into three segments: Dismounted, Mounted, and Software. The TACP provides modernized, modular, re-locatable and man portable capabilities via streamlined acquisition using non-developmental, off-the-shelf (OTS) Manpack Radios (MPR) or Handheld Radios (HHR), laser targeting devices (LTDs) (including Laser Range Finder (LRFs), Joint Effects Targeting System (JETS)laser designators and imagers), tactical computers, and ancillary equipment combined with Close Air Support System (CASS) software for dismounted, ASOC, and TOC use. TACP mounted segment upgrades existing TACP communications systems with new Software Communication Architecture (SCA)-CERTIFIED, Joint Tactical Radio System (JTRS) or available software programmable radios, legacy radios, and ancillary components, which provide reliable communications for CAS and other air support operations. TACP-M will integrate Internet Protocol (IP)-capable, SCA radios

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force		DATE: February 2011
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for voice & data UHF SATCOM and LOS UHF /VHF communications. TACP-M funds will continue to develop systems integration software (for dismounted and mounted) for multiple air/ground platforms (e.g. JETS (TECS software development), Small Diameter Bomb II (SDBII), F-35, Mine Resistant Ambush Protected (MRAP) vehicle, Gateway Lite, and ASOC Gateway vehicle) and will provide interoperability datalinks such as Situational Awareness Data Link (SADL), Link-16 and other transformational communications capabilities.

Mounted overseas contingency operations also require new digital communications/network enabled capabilities integrated in armored vehicle platforms including High Mobility, Multi-Wheeled Vehicles (HMMWV), Stryker, Mine Resistant Ambush Protected (MRAP) and other vehicle platforms used in times of conflict. The Air Force has requested acceleration of a vehicular communications capability into TACP Stryker Light Armored Vehicles (LAV) and other tactical vehicles.

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 recieved 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: Vehicle Communications System	3.922	3.037	-	-	-
Description: Vehicle Communications System (VCS) - Design, develop, fabricate, integrate , test, provide associated documentation (e.g. technical manuals) in support of delivering a digital multiple-channel, mobile VCS to replace the aging analog GRC-206 communications pallet. *FY 2010 Accomplishments:* Complete the design/development/documentation of the VCS for integration into High Mobility Multi-Wheeled Vehicles (HMMWVs). Fabricate and integrate VCS developmental units into HMMWVs for contractor, qualification, and operational testing and evaluation of the VCS. Complete all contractor and qualification testing. Start detailed operational test planning and activities. Initiate study and development effort to integrate VCS into an additional TACP vehicle type (e.g. Stryker). Initiation of a capability development effort for VCS capabilities integration into future tactical vehicles. *FY 2011 Plans:* Continue development effort to integrate VCS into additional TACP vehicle type (e.g. Stryker). Continue investigating additional vehicle types for integration of VCS. This effort requires contractor and engineering support to accomplish the engineering, management, and test planning activities. *FY 2012 Base Plans:* TACP RDT&E efforts have moved to PE 0207444F, BPAC 676013 effective FY2012. *FY 2012 OCO Plans:*					
Title: Close Air Support System	6.136	7.298	-	-	-

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 0207423F: *Advanced Communications Systems*	**PROJECT** 674934: *Tactical Air Control Party (TACP)*

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**
Description: Close Air Support System (CASS) Software - Upgrade TACP digital communications mission software to enable machine-to-machine (MTM) interfaces between TACPs and multiple systems (e.g. CAS aircraft, Command and Control (C2) nodes, etc). Develop new capabilities to satisfy ORD requirements to improve battlefield Situational Awareness, increase targeting accuracy, reduce the kill chain, and improve data flow/information exchange and reduce fratricide. *FY 2010 Accomplishments:* Develop new MTM interfaces to Small Diameter Bomb II and Joint Strike Fighter (F35). Develop new MTM interfaces with C2 nodes and aircraft across the USAF, Joint, and Coalition environment and as well as developing new capabilities to satisfy ORD requirements. Develop, integrate, and test CASS mission software to be hosted on VCS. This effort will include contractor support, engineering support, test and evaluation. This effort also continues support to the Joint Digital Aided Close Air Support (DACAS) initiative to drive all major players in the Close CAS arena to a common standard. *FY 2011 Plans:* Continue to develop new MTM interfaces to Small Diameter Bomb II and Joint Strike Fighter (F35). Develop new interfaces with Joint Air Ground Integration Cell, C2 nodes, and aircraft across the USAF, Joint, and Coalition environment as well as developing new capabilities to satisfy ORD requirements. This effort will include contractor support, engineering support, test and evaluation. This effort also continues support to the Joint Digital Aided Close Air Support (DACAS) initiative to drive all major players in the Close CAS arena to a common standard. *FY 2012 Base Plans:* TACP RDT&E efforts have moved to PE 0207444F, BPAC 676013 effective FY2012. *FY 2012 OCO Plans:*					
Title: Joint Effect Targeting System *Description:* Joint Effect Targeting System (JETS) - An Army-led program to develop, integrate, and test an integrated CAS targeting system that is smaller, lighter, and more accurate than current systems. JETS consists of two sub-systems: the Target Location and Designation System (TLDS) that provides target acquisition, high-accuracy target location, and laser designation; and the Target Effects Coordination System (TECS) that provides connectivity to the digital C4I systems and aircraft. JETS will be incrementally developed where TLDS is Increment 1 and TECS is Increment 2.	6.500	6.963	-	-	-

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 0207423F: *Advanced Communications Systems*	**PROJECT** 674934: *Tactical Air Control Party (TACP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: AF funds will support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are; provide a reduction in hardware weight from current similar systems; provide a highly accurate target location capability, and achieve connectivity for TECS. In support to the overall JETS requirement, total targeted weight for all hardware shall be at or under a total system weight of 17 pounds with all supporting items including power sources. Support two TECS test excursions. This effort includes contractor support, engineering support, and test and evaluation. ***FY 2011 Plans:*** AF funds will continue support the development of a prototype TLDS system through the JETS program office. The primary TLDS capability requirements are; provide a reduction in hardware weight from current similar systems; provide a highly accurate target location capability, and achieve connectivity for TECS. Support TECS test excursions. This effort includes contractor support, engineering support, and test and evaluation. ***FY 2012 Base Plans:*** TACP RDT&E efforts have moved to PE 0207444F, BPAC 676013 effective FY2012. ***FY 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	16.558	17.298	-	-	-

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 0207423F: *Advanced Communications System, OPAF*	71.683	132.963	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

   TACP-M is executing an incremental development for the TACP CASS software. TACP CASS software systems engineering, design, integration, and fielding support is being provided under a cost plus fixed fee contract. TACP-M awarded a fixed price development contract (with options for production) for the Vehicular Communication System (VCS) in FY09 under full and open competition. JETS is a joint interest development program managed by the Army.

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.

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2012 Air Force		**DATE:** February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ESC Sys Int Software Dev't	C/CPFF	Rockwell Collins:Poway, CA	2.601	3.614	Jan 2011	-		-		-	Continuing	Continuing	TBD
ESC Sys Int Software Dev't - 2	TBD	TBD:TBD,	-	1.000	Jun 2011	-		-		-	0.000	1.000	1.000
VCS (GRC-206 Replacement)	C/FFP	BAE Systems, Inc:Rockville, MD	2.230	2.239	Jan 2011	-		-		-	Continuing	Continuing	TBD
JETS	MIPR	Army - SSL Division:Ft Belvoir, VA	6.500	6.963	May 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	11.331	13.816		-		-		-			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	TBD	TBD:TBD,	1.104	1.291	Feb 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	1.104	1.291		-		-		-			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Agency Support	Various	Various:Various,	2.240	1.999	Dec 2010	-		-		-	Continuing	Continuing	TBD
		Subtotal	2.240	1.999		-		-		-			

Remarks
Development, operational and interoperability testing

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2012 Air Force												**DATE:** February 2011

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support	Various	Various:Various	1.883	0.192	Jan 2011	-		-		-	Continuing	Continuing	TBD
		Subtotal	1.883	0.192		-		-		-			

	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	16.558	17.298	-	-	-			

Remarks

Exhibit R-4, **RDT&E Schedule Profile:** 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 0207423F: *Advanced Communications Systems*	**PROJECT** 674934: *Tactical Air Control Party (TACP)*

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 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207423F: *Advanced Communications Systems*	**PROJECT** 674934: *Tactical Air Control Party (TACP)*

Schedule Details

Events	Start		End	
	Quarter	**Year**	**Quarter**	**Year**
Software Development and Test - TACP-CASS v1.4.2	1	2010	4	2011
Software Development and Test- TACP-CASS v1.4.4	2	2010	2	2013
Software Development and Test- TACP-CASS v1.4.5	2	2012	2	2015
Software Development and Test-TACP-CASS v1.4.6	3	2014	4	2016
Joint Effects Targeting Systems - Development and Testing	3	2010	2	2013

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 0207423F: *Advanced Communications Systems*					PROJECT 675189: *C2ISR JTRS Integration*	

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
675189: *C2ISR JTRS Integration*	44.872	50.234	90.083	-	90.083	194.387	249.469	494.156	610.430	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Joint Tactical Radio System (JTRS) is the Department of Defense (DoD) family of interoperable, modular, software-defined radios that will form the foundation of radio frequency information transmission for Joint Vision 2020. Joint Tactical Radio Systems (JTRS) will link the power of the Global Information Grid (GIG) to the warfighter in applying fire effects and achieving overall battlefield superiority. By developing and implementing an open architecture of cutting-edge radio waveform technology, multiple radio types (e.g., handheld, ground-mobile, airborne, maritime, etc.) are now capable of communicating with one another.   JTRS radios are intended to interoperate with existing radio systems and improve Joint warfighting through a series of new, joint networking waveforms enabling communication via voice, data, and video over mobile, ad-hoc, internet protocol (IP) based networks. Each radio will operate as a node in the network to ensure secure wireless communication and networking services for airborne, mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and, in time, disaster response personnel. JTRS will make the Air Force more effective in Joint warfighting through a series of new, joint networking waveforms. These waveforms included the Mobile User Objective System (MUOS), which provides next generation SATCOM beyond-line-of-sight (BLOS)communications, as well as the Wideband Networking Waveform (WNW) and the Soldier Radio Waveform(SRW) which provide interoperability with Army ground forces from the bridade level down to the dismounted soldier. Together these waveforms enable Joint Close Air Support (JCAS), Combat Search and Rescue (CSAR) and other Joint missions. The JTRS program is built around an open Software Communications Architecture (SCA), allowing common software waveform applications to be implemented across the family of radios to provide joint-service, allied, and coalition interoperability. The Enterprise Business Model, incorporating a common set of shared open system standards, promotes competition and reduces procurement costs for the DoD.

Air Force JTRS will support the development of a common integration solution and acquisition plan across multiple AF platforms as well as unique integration solutions to meet platform specific requirements. Non-recurring engineering investment in JTRS integration hardware, software, and risk reduction efforts is required to successfully integrate these digital radios on Air Force platforms, display information received and transmitted over these radios for operator use, and integrate JTRS information with information from other aircraft systems. This hardware and software includes racks, cabling, digital processors and data displays necessary to integrate JTRS radio sets, onto multiple Air Force platforms. Development activities support the close coordination with the JTRS JPEO, industry, and the platform program offices to ensure successful and efficient integration of JTRS radios onto a wide variety of unique AF platforms. 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: Systems Engineering and integration	16.107	27.430	66.752	-	66.752

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 0207423F: *Advanced Communications Systems*	PROJECT 675189: *C2ISR JTRS Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: Systems engineering and integration to develop and certify solutions to Air Force unique requirements for the integration of JTRS radios into Air Force platforms. **FY 2010 Accomplishments:** Funds system engineering and integration to deliver an interoperable, fully synchronized, and deployable JTRS system. **FY 2011 Plans:** Funds development and certification of Air Force unique requirements for JTRS AMF-Fixed terminals. Funds development and risk reduction efforts for a common integration solution for integration of AMF-SA terminals onto Air Force platforms. **FY 2012 Base Plans:** Funds hardware and software development of a common integration solution for the integration of AMF-SA terminals onto a variety of Air Force platforms. Also funds risk reductions activities and the development of integration solutions to meet the unique requirements of each host platform. **FY 2012 OCO Plans:**					
Title: Platform Planning and Integration **Description:** Platform planning and integration support **FY 2010 Accomplishments:** Funds technical, engineering, and enterprise architecture support to MAJCOMs developing operational requirements and CONOPs. **FY 2011 Plans:** Funds non-recurring engineering (NRE) for integration of JTRS Multi Functional Information Distribution System (MIDS) terminal on the JSTARS aircraft. Funds integration efforts for the JTRS AMF-SA onto the C-130 AMP and AWACS aircraft. **FY 2012 Base Plans:** Continues to fund non-recurring engineering (NRE) for integration of JTRS Multi Functional Information Distribution System (MIDS) terminal on the JSTARS aircraft. Continues to fund integration efforts for the JTRS	18.872	19.794	18.854	-	18.854

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
AMF-SA onto the C-130 AMP and AWACS aircraft. Assists other Air Force platforms in determining integration requirements and architectures. *FY 2012 OCO Plans:*					
Title: Test and Evaluation	9.893	3.010	4.477	-	4.477
Description: Interoperability testing and evalution to perform risk reduction to ensure successful platform integration. *FY 2010 Accomplishments:* Funds Engineering Design Models (EDMs) to perform interoperability testing, evaluation, and risk reduction to ensure successful integration on various platforms. Extensive evaluations and reporting to be accomplished. *FY 2011 Plans:* Funds Engineering Design Models (EDMs) to perform interoperability testing, evaluation, and risk reduction to ensure successful integration on various platforms. Extensive evaluations and reporting to be accomplished. *FY 2012 Base Plans:* Interoperability testing and evalution to perform risk reduction to ensure successful platform integration. *FY 2012 OCO Plans:*					
Accomplishments/Planned Programs Subtotals	44.872	50.234	90.083	-	90.083

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 0207423F: *Advanced Communication System, APAF*	8.755	11.571	58.542	0.000	58.542	24.262	19.338	54.034	142.831	Continuing	Continuing
• PE 0207423F (1): *Advanced Communication System, OPAF*	59.591	31.693	95.852	0.000	95.852	80.630	195.540	104.074	224.659	Continuing	Continuing

D. Acquisition Strategy

In 2005, the DoD established the Joint Program Executive Office (JPEO) for JTRS. The JPEO has full directive authority for all JTRS research, development, testing, adn evaluation of waveforms, radios, common ancillaries, network management, and associated software. The JPEO is funded jointly by the Services in PE 0604280N.

Exhibit R-2A, **RDT&E Project Justification:** PB 2012 Air Force		**DATE:** February 2011
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Air Force JTRS Program Office will perform system engineering integration, to deliver an interoperable, fully synchronized, deployable JTRS system under various contract awards. The program office will lead the development of common integration hardware and sofware that can be used across multiple Air Force platforms. The AF JTRS program office will also work with the JPEO, industry, and the platform program offices to develop integration solutions specific to each platform. This effort will assist various AF platform users in acquiring and integrating the next generation communications system, to include all key documentation (CONOPS, TTPs, ICDs, TRDs, etc.)

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.

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 0207423F: *Advanced Communications Systems*	**PROJECT** 675189: *C2ISR JTRS Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering, Planning, and Integration-1	SS/CPIF	Northrop Grumman:Melbourne, FL	29.654	12.212	Jan 2011	9.900	Jan 2012	-		9.900	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-2	SS/CPIF	Boeing and Lockheed Martin:Various,	2.755	7.000	Jan 2011	7.750	Jan 2012	-		7.750	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-3	SS/CPIF	General Atomics:San Diego, CA	14.295	-		-		-		-	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-4	C/CPFF	L3COM:Greenville, TX	15.453	-		-		-		-	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration	SS/CPAF	Northrop Grumman:San Diego, CA	4.151	-		-		-		-	0.000	4.151	4.151
Systems Engineering, Planning, and Integration-5	SS/CPIF	Rockwell Collins:Various,	17.760	-		-		-		-	Continuing	Continuing	TBD
Systems Engineering, Planning, and Integration-6	SS/CPIF	JTRS JPEO:San Diego, CA	2.507	9.830	Mar 2011	-		-		-	0.000	12.337	12.337
Systems Engineering, Planning, and Integration-7	TBD	Various:Various,	6.693	14.100	Feb 2011	59.002	Jan 2012	-		59.002	0.000	79.795	79.795
		Subtotal	93.268	43.142		76.652		-		76.652			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Activities and Support	TBD	Various:Various,	11.008	4.082	Feb 2011	8.954	Feb 2012	-		8.954	0.000	24.044	24.044
		Subtotal	11.008	4.082		8.954		-		8.954	0.000	24.044	24.044

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force											DATE: February 2011		
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Planning and Test Agency Support	TBD	Various:Various,	9.893	3.010	Feb 2011	4.477	Feb 2012	-		4.477	0.000	17.380	17.380
Subtotal			9.893	3.010		4.477		-		4.477	0.000	17.380	17.380

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-	0.000	0.000	0.000

			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			114.169	50.234	90.083	-	90.083			

Remarks

Exhibit R-4, **RDT&E Schedule Profile:** PB 2012 Air Force		**DATE:** February 2011
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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 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0207423F: *Advanced Communications Systems*	**PROJECT** 675189: *C2ISR JTRS Integration*

Schedule Details

Events	Start		End	
	Quarter	**Year**	**Quarter**	**Year**
Systems Engineering	1	2010	4	2016
Platform Planning and Integration	1	2010	4	2016
Operational & Interoperability Test Planning	2	2010	4	2016