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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0207444F: <i>Tactical Air Control Party-Mod</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	8.939	16.226	10.250	-	10.250	10.077	10.225	10.681	10.873	Continuing	Continuing
676013: <i>Equipment Modernization</i>	-	8.939	16.226	10.250	-	10.250	10.077	10.225	10.681	10.873	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

Tactical Air Control Party-Modernization (TACP-M). TACP-M is a buy-to-budget program with requirements based on ACC's evolving combat needs and the capabilities available in the commercial market. Therefore, requirements are frequently adjusted to accommodate warfighter needs while working within available funding. The TACP-M program acquires capabilities for TACP operations. TACP members deploy with Army maneuver units and provide a command and control (C2) link for close air support (CAS), airlift, and Air Force surveillance/reconnaissance missions. TACPs are equipped with various targeting and communications equipment which interfaces with ground maneuver forces, CAS aircraft, joint fire assets, C2 aircraft/agencies, and Intelligence, Surveillance, and Reconnaissance (ISR) platforms/agencies. Throughout the performance of their duties, TACPs detect targets and compute precision coordinates to aircraft to ensure pilots track the correct target in the employment of GPS aided weapons. The actions performed by TACPs not only shorten the kill chain, but also reduce the potential for fratricide and collateral damage in civilian-occupied areas.

The TACP-M program provides equipment modernization capabilities to TACPs, Air Support Operations Center (ASOC), and Tactical Operations Center (TOC) personnel. The program supports 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.

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, supports joint and multinational interoperability, improves battlefield Situational Awareness (SA), increases targeting accuracy, reduces kill chain decision time, improves data flow/information exchange, and reduces potential fratricide. TACPs use software communication architecture (SCA)-certified, Joint Tactical Radio System (JTRS), software programmable radios, and ancillary components for reliable voice & data UHF SATCOM and LOS UHF /VHF communications. TACP-M is divided into three segments: software, dismounted and mounted. The mounted segment is further divided into fixed and mobile elements.

The software segment utilizes a common Close Air Support System Software(CASS) baseline across all TACP systems. The CASS software provides cross-service interoperability with numerous aircraft (A-10, F-16, F/A-18, etc), helicopters, unmanned air vehicles (Predator), land and naval artillery, network enabled weapons,

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<p>command & control nodes, and communications systems utilizing numerous messaging systems (such as Variable Message Format (VMF), Situational Awareness Data Link (SADL), and Link-16) to provide maximum flexibility and capability to the TACPs for the execution of joint fire support mission. In addition, TACP-M is working with various contractors and laboratories to conduct demonstrations and risk reduction efforts to assess advanced HMI and interoperability technologies for future fielding.</p> <p>The dismounted segment consists of integrated systems and equipment comprised of non-developmental and commercial-off-the-shelf (COTS) components which are carried by dismounted TACP. These include laser range finders, thermal imagers, laser designators, manpack and handheld radios, ruggedized tactical computers, streaming video receivers, and other required equipment. The dismounted segment also incorporates the development of an advanced Target Location Designation System (TLDS) which is also being managed under the Army-led Joint Effects Targeting System (JETS) program. TLDS will combine the capability of a laser marker, designator and thermal imagers into a small, lightweight system.</p> <p>The mounted (fixed) segment integrates computer and communications equipment into re-locatable vehicle, rack or transit case mounted systems for use in Tactical Operations Center (TOC) or Air Support Operations Center (ASOC) locations. The TACP mounted (fixed) segment includes the High Mobility, Multi-Wheeled Vehicle (HMMWV)-mounted Air Support Operations Center (ASOC) gateway, gateway lite, and the Dismounted Communications Package (DCP). The TACP-M Mounted (mobile) segment integrates similar equipment into mobile tactical vehicles employed by the Army and provides on-the-move tactical voice and data capability.</p> <p>Following the termination of the Vehicular Communications System (VCS) in FY11, the TACP community has capability gaps in vehicle mounted communications systems. As a result, and based on ACC priorities and available funding, the TACP-M team is working through the JCIDS process with ACC to identify and resolve capability gaps related to vehicle mounted communications, which is referred to as the Mobile Communications System (MCS). These gaps are being addressed in a stepwise fashion: an initial implementation of a very limited, PRC-117G-based, voice-only capability in approximately 220 TACP HMMWVs that were originally slated for the VCS. This limited capability is referred to as the Voice Communications Package (VCP), and replaces the more capable Mobile Communications Package (MCP) that was going to take multiple years to implement. A more robust capability, implementing voice and data communications through additional PRC-117G and PRC-150 radios, computers, streaming video, and advanced soldier radio waveforms, will follow as the requirement is formalized, funding becomes available and contracts can be awarded to fill the long-term need.</p> <p>Activities also include studies and analysis to support both current program planning and execution and future program planning.</p> <p>This program is in Budget Activity 7, Operational System Development, this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipated production funding in the current or subsequent fiscal year.</p>		

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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	9.515	16.226	10.511	-	10.511
Current President's Budget	8.939	16.226	10.250	-	10.250
Total Adjustments	-0.576	0.000	-0.261	-	-0.261
• Congressional General Reductions	-	0.000			
• Congressional Directed Reductions	-	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	-	0.000			
• Congressional Directed Transfers	-	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.576	0.000	-0.261	-	-0.261

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
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Title: Close Air Support System (CASS)	4.991	12.461	8.820
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Description: CASS Software - For FY14, we are continuing work on some capabilities (F-35, Joint Digital Aided Close Air Support (DACAS) Block I, Small Diameter Bomb (SDB) II, etc.) and beginning work on others, such as calls for fires (CFF), mission area specific software, CASS Built-In-Test capability, AH6 Apache, DACAS Exchange Network Parameters (XNP) for example. The form of the FY13 and FY14 effort descriptions should remain the same, but the examples cited should include some of the above. In addition, TACP is working with various contractors and laboratories to conduct demonstrations and risk reduction efforts to assess advanced HMI and interoperability technologies for future fielding.

FY 2012 Accomplishments:
Continued to develop new machine-to-machine (MTM) interfaces with weapons (e.g. Small Diameter Bomb II), new interfaces with joint air ground integration cell, C2 nodes, indirect fires integration, and aircraft across the USAF, joint (e.g. F-35) and coalition environment, and satisfy validated warfighter requirements. This effort also continues to support the Joint DACAS Block 1 initiative which will provide a common CASS terminal execution phase capability across service and coalition forces. CASS software will also be focused on developing a simplified user interface which is user-tailorable to specific TACP missions. This effort will include contractor support, engineering support, test and evaluation.

FY 2013 Plans:
Continuing to develop new MTM interfaces with weapons (e.g. Small Diameter Bomb II), new interfaces with Joint Air Ground Integration Cell, C2 nodes, indirect fires integration, and aircraft across the USAF, joint (e.g. F-35) and coalition environment, and satisfy validated warfighter requirements. This effort also continues to support the Joint DACAS Block 1 initiative which will provide a common CASS terminal execution phase capability across service and coalition forces. CASS software will also

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p>be focused on developing a simplified user interface which is user tailorable to specific TACP missions. This effort will include contractor support, engineering support, test and evaluation with an initial dismounted software effort potentially fielding in FY14.</p> <p>FY 2014 Plans: Will continue to develop new MTM interfaces with weapons (e.g. Small Diameter Bomb II), new interfaces with Joint Air Ground Integration Cell, C2 Nodes, indirect fires integration, and aircraft across the USAF, joint (e.g. F-35) and coalition environment, and satisfy validated warfighter requirements. This effort also continues to support the Joint DACAS Block 1 initiative which will provide a common CASS terminal execution phase capability across service and coalition forces. CASS software will also be focused on developing a simplified user interface which is TACP mission tailorable e.g ASOC Gateway, Vehicle Mount & Joint Terminal Attack Controller (JTAC)while maintaining consistent base engine across multiple platforms. The new effort will require to have CASS adopt flexible architecture to enable modular upgrades and capability enhancements thus lowering sustainment costs. Need to develop terminal control interface of ammunition in flight.</p>				
<p>Title: Program Management Support (PMA)</p> <p>Description: Program Management Administration (PMA) - PMA supports CASS, JETS and MC acquisition programs with engineering and technical support.</p> <p>Program Management Administration (PMA): FY14 funding is for program support activities required for device development. Permits the System Program Office to discharge responsibilities to support the fielding and installation of new and developing capabilities. This includes the initial bed down and operability testing, technical interchange meetings, and events incident to fielding both hardware and software products, and maintaining configuration control of fielded products.</p> <p>FY 2012 Accomplishments: Continued to support CASS, JETS and MC acquisition programs with engineering and technical support.</p> <p>Continued to support activities required for device production. Permits the System Program Office to discharge responsibilities to support the fielding and installation of new and developing capabilities. This includes the initial bed down and operability testing, technical interchange meetings, and events incident to fielding both hardware and software products, and maintaining configuration control of fielded products.</p> <p>FY 2013 Plans: Continuing to support CASS, JETS and MC acquisition programs with engineering and technical support.</p> <p>Continuing to support activities required for device production. Permits the System Program Office to discharge responsibilities to support the fielding and installation of new and developing capabilities. This includes the initial beddown and operability</p>		1.643	1.693	1.430

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p>testing, technical interchange meetings, and events incident to fielding both hardware and software products, and maintaining configuration control of fielded products.</p> <p>FY 2014 Plans: Will continue to support management with engineering and technical for development and implementation. PMA supports CASS, JETS and MC acquisition programs with engineering and technical support.</p> <p>Will continue to support activities required for device production. Permits the System Program Office to discharge responsibilities to support the fielding and installation of new and developing capabilities. This includes the initial beddown and operability testing, technical interchange meetings, and events incident to fielding both hardware and software products, and maintaining configuration control of fielded products.</p> <p>TACP M is also supporting ACC efforts to utilize the Combat Capability Developer Process in order to better align with the Joint Command & Control (JC2)& Capability Development Document(CDD). Note: JC2 replaced Net Enabled Command & Control(NECC).</p>				
<p>Title: Joint Effects Targeting System (JETS)</p> <p>Description: JETS is 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 Locations and Designation System (TDLS) that provides target acquisition, high-accuracy target location and laser designation. JETS will be incrementally developed.</p> <p>FY 2012 Accomplishments: Continued to 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. This effort includes contractor support, engineering support, and test and evaluation.</p> <p>FY 2013 Plans: Continuing to 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. This effort includes contractor support, engineering support, and test and evaluation.</p> <p>FY 2014 Plans: N/A</p>		1.552	1.560	0.000
<p>Title: Mobile Communication System</p>		0.753	0.512	0.000

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
<p>Description: Repaced Vehicular Communication System (VCS), Mobile Communication Capability (MCC) - Design, develop, fabricate, integrate, test, provide associated documentation (e.g. technical manuals) in support of delivering a digital multiple channel, mobile communication system to replace the aging analog GRC-206 communications pallet.</p> <p>FY 2012 Accomplishments: After VCS HMMWV cancellation in FY11, Tactical Air Control Party-Modernization RDT&E efforts are focusing studies and analyses on developing Joint Capabilities Integration and Development System (JCIDS) documentation in support of a long term replacement for the aging GRC-206 communications pallet and other TACP systems.</p> <p>FY 2013 Plans: Continuing to perform studies and analyses to develop TACP-M Joint Capabilities Integration and Development System (JCIDS) documentation in support of a long term replacement for the aging GRC-206 communications pallet and close air support software and other TACP efforts.</p>			
Accomplishments/Planned Programs Subtotals	8.939	16.226	10.250

D. Other Program Funding Summary (\$ in Millions)										
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>
• OPAF: BA03: Line Item #	53.839	35.304	27.329		27.329	48.781	25.260	25.714	26.177	Continuing
837100: <i>Tactical C-E Equipment</i>										Continuing

Remarks

E. 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. JETS is an Army-managed joint interest development program the Air Force will continue to support.

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-3, RDT&E Project Cost Analysis: PB 2014 Air Force **DATE:** April 2013

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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CASS Sys Int Software Dev't	TBD	TBD:TBD, NA	-	3.551	May 2012	10.938	Jun 2013	6.904	Jan 2014	-		6.904	Continuing	Continuing	TBD
Mobile Communication System	TBD	TBD:TBD, NA	-	0.753	Apr 2012	0.000		0.000		-		0.000	Continuing	Continuing	TBD
JETS	MIPR	Army - SSL Division:Ft Belvoir, VA	-	2.128	Jan 2012	2.072	Feb 2013	0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	6.432		13.010		6.904		0.000		6.904			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

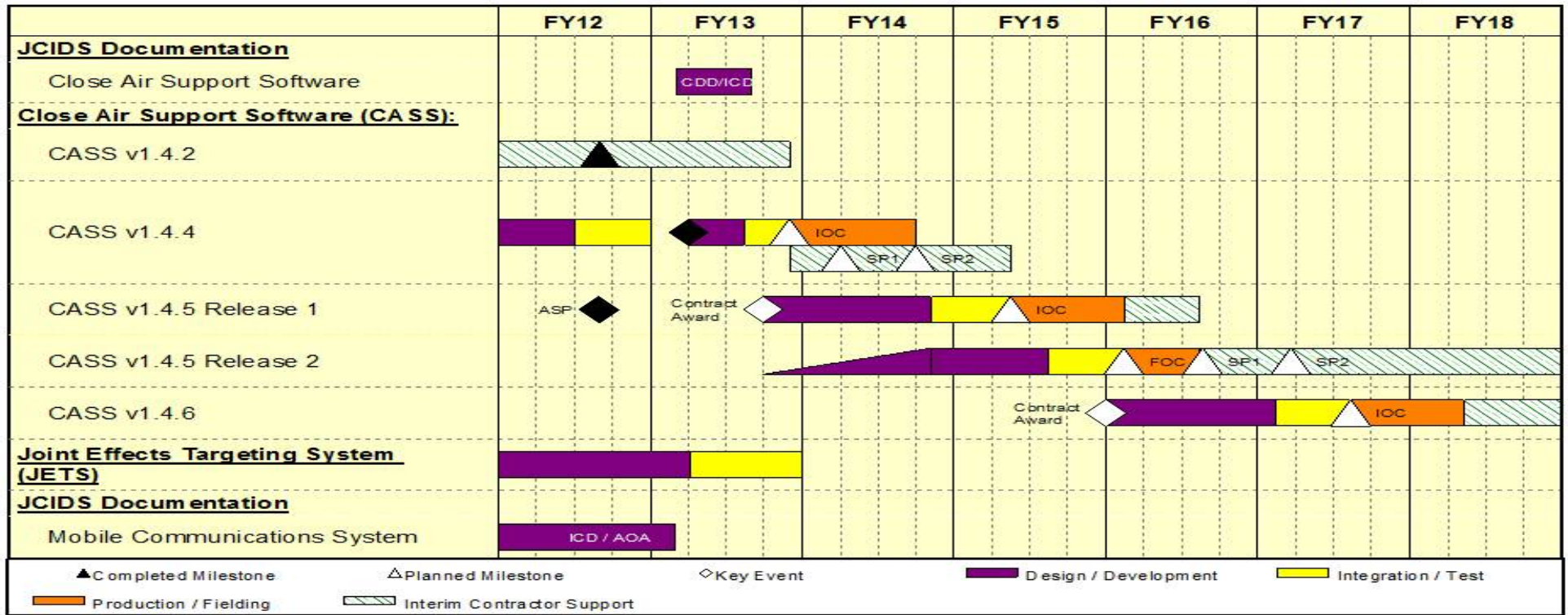
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Agency Support	Various	Various:Various, NA	-	1.440	Nov 2011	1.523	Nov 2012	1.915	Nov 2013	-		1.915	Continuing	Continuing	TBD
Subtotal			0.000	1.440		1.523		1.915		0.000		1.915			

Remarks
Development, operational and interoperability testing

Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	Various	Various:Various, NA	-	1.067	Jan 2012	1.693	Jan 2013	1.431	Jul 2014	-		1.431	Continuing	Continuing	TBD

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force		DATE: April 2013
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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force		DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JCIDS Documentation	1	2012	4	2013
Close Air Support System (CASS) v1.4.2	1	2012	4	2013
Close Air Support System (CASS) v1.4.4	1	2012	2	2015
Close Air Support System (CASS) v1.4.5 Release 1	4	2013	3	2016
Close Air Support System (CASS) v1.4.5 Release 2	4	2013	4	2018
Close Air Support System (CASS) v1.4.6	1	2016	4	2018
Joint Effects Targeting Systems	1	2012	4	2013
JCIDS Documentation_Mobile Communications System	1	2012	1	2013