Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army											DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*					R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*							
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	-	115.890	78.538	76.588	-	76.588	97.762	20.371	6.094	92.349	Continuing	Continuing
C97: *ACFT Avionics*	-	115.890	17.294	25.815	-	25.815	31.058	7.346	1.468	30.443	Continuing	Continuing
VU3: *Networking And Mission Planning*	-	0.000	61.244	50.773	-	50.773	66.704	13.025	4.626	61.906	Continuing	Continuing

[#] 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

The FY 2014 budget request funds the development of Aircraft Avionics systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Program Element support research, development, and test efforts in the Engineering and Manufacturing Development (EMD) phases of these systems. Beginning in FY 2013, funding on this Program Element was split into Projects C97, Aircraft Avionics, and VU3, Networking and Mission Planning.

The Joint Tactical Radio System (JTRS) is the transformational system that provides Army Aviation interoperability capability for Future Force and Joint Force operations. The JTRS integration effort provides for the non-recurring engineering required to integrate and qualify the JTRS certified radios with Link 16 and/or other advanced networking waveforms into the AH-64E and Unmanned Aircraft Systems (UAS). Funding in FY 2014 will complete the Apache Block III (AB3) Link 16 non-developmental item radio integration through AB3 Lot 4 Follow-On Operational Test and Evaluation. In addition, FY14 funding initiates integration activities to install and qualify a JTRS certified networking radio on the Grey Eagle and AB3 Lot 6 platforms and also supports continued development of common radio control software for use on multiple platform integrations.

The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to the Tactical Internet and Fire Support internet for Army aircraft. With interfaces supporting a transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker transceivers. IDM provides a flexible, software driven digital messaging system that is interoperable with existing Army and Joint forces battlefield operating systems. The IDM provides Situational Awareness and Variable Message Format messages capability to the cockpit.

The Joint Precision Approach and Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operations missions including those operating from fixed base, ship, tactical, and special mission environments under a wide range of meteorological and jamming conditions. The Army plans to integrate JPALS capabilities as defined by the Navy (Shipboard operations) and the Air Force (Land-based operations) through the JPALS Army Risk Reduction (JARR) and the JPALS Common Avionics Technology Development (JCATD) efforts. JARR defined implementation alternatives for aircraft integration. JCATD continues the alternative analysis.

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*

The Doppler Global Positioning System (GPS) Navigation System (DGNS) Upgrade program conducts system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules map display, and prepares Engineering Change Proposals to the existing DGNS ASN-128D Line Replaceable Units as a result of those trade studies. The effort also derives DGNS compliance matrices for current and planned Global Air Traffic Management (GATM) capabilities for the upcoming decade.

The Future Airborne Capability Environment (FACE), previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. This includes the non-recurring engineering for integration, test, and air worthiness qualification. As part of the Army's migration to a net-centric fighting force, it is necessary for aircraft to access certain critical services that enable seamless access and operation on the future force network.

The Aviation Data Exploitation Capability (ADEC) is an Army Aviation program to develop, integrate, and test specific capabilities needed at the Aviation unit level to implement and support improvements within aviation maintenance, operations, safety and training. ADEC will standardize data and information formats and provide a comprehensive and fully integrated automated information system. ADEC provides a common and interoperable capability required to implement Condition Based Maintenance, Military Flight Operations Quality Assurance, and Platform Maintenance Environment processes.

The Aircraft Notebook (ACN) will provide users with an aviation centric suite of software utilized for streamlined documentation and completion of aviation maintenance activities

B. Program Change Summary ($ in Millions)

	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	119.573	78.538	119.844	-	119.844
Current President's Budget	115.890	78.538	76.588	-	76.588
Total Adjustments	-3.683	0.000	-43.256	-	-43.256
• Congressional General Reductions	-0.075	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.608	-			
• Adjustments to Budget Years	-	-	-43.256	-	-43.256

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army											DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*					**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*					**PROJECT** C97: *ACFT Avionics*		

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
C97: *ACFT Avionics*	-	115.890	17.294	25.815	-	25.815	31.058	7.346	1.468	30.443	Continuing	Continuing
Quantity of RDT&E Articles												

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

Note

Several systems/functions shift from Project C97 to Project VU3 in FY 2013. They include the Improved Data Modem IDM), the Aviation Mission Planning System (AMPS), Future Airborne Capability Environment (FACE), Aviation Data Exploitation Capability (ADEC), the Aircraft Notebook (ACN) and the Degraded Visual Environment (DVE) system.

A. Mission Description and Budget Item Justification

The FY 2014 budget request funds the development of Aircraft Avionics systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Project support research, development, and test efforts in the Engineering and Manufacturing Development (EMD) phases of these systems.

The Joint Tactial Radio System (JTRS) is the transformational system that provides Army Aviation interoperability capability for Future Force and Joint Force operations. The JTRS integration effort provides for the non-recurring engineering required to integrate and qualify the JTRS certified radios with Link 16 and/or other advanced networking waveforms into the AH-64E and Unmanned Aircraft Systems (UAS). Funding in FY 2014 will complete the Apache Block III (AB3) Link 16 non-developmental item radio integration through AB3 Lot 4 Follow-On Operational Test and Evaluation. In addition, FY14 funding initiates integration activities to install and qualify a JTRS certified networking radio on the Grey Eagle and AB3 Lot 6 platforms and also supports continued development of common radio control software for use on multiple platform integrations.

The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to the Tactical Internet and Fire Support internet for Army aircraft. With interfaces supporting a transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker transceivers. IDM provides a flexible, software driven digital messaging system that is interoperable with existing Army and Joint forces battlefield operating systems. The IDM provides Situational Awareness and Variable Message Format messages capability to the cockpit.

The Joint Precision Approach and Landing System (JPALS) is a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operations missions including those operating from fixed base, ship, tactical, and special mission environments under a wide range of meteorological and jamming conditions. The Army plans to integrate JPALS capabilities as defined by the Navy (Shipboard operations) and the Air Force (Land-based operations) through the JPALS Army Risk Reduction (JARR) and the JPALS Common Avionics Technology Development (JCATD) efforts. JARR defined implementation alternatives for aircraft integration. JCATD continues the alternative analysis.

Exhibit R-2A, **RDT&E Project Justification:** PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT Avionics*

The DGNS Upgrade program conducts system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules (IFR) map display, and prepares Engineering Change Proposals (ECPs) to the existing ASN-128D Line Replaceable Units (LRUs) as a result of those trade studies. The effort also derives DGNS compliance matrices for current and planned GATM capabilities for the upcoming decade.

The Aviation Mission Planning System (AMPS) interfaces with Army Mission Command Systems (AMCS) and initializes communication, navigation, situational awareness, and weapons systems on fleet aircraft. This effort will develop XPlan core mission planning software, integrate it into AMPS, and modify the Aircraft Weapons and Electronics (AWE) modules that will interact with XPlan.

The Future Airborne Capability Environment (FACE), previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. This includes the non-recurring engineering for integration, test, and air worthiness qualification. As part of the Army's migration to a net-centric fighting force, it is necessary for aircraft to access certain critical services that enable seamless access and operation on the future force network.

The Aviation Data Exploitation Capability (ADEC) is an Army Aviation program to develop, integrate, and test specific capabilities needed at the Aviation unit level to implement and support improvements within aviation maintenance, operations, safety and training. ADEC will standardize data and information formats and provide a comprehensive and fully integrated automated information system. ADEC provides a common and interoperable capability required to implement Condition Based Maintenance, Military Flight Operations Quality Assurance, and Platform Maintenance Environment processes.

The Aircraft Notebook (ACN) will provide users with an aviation centric suite of software utilized for streamlined documentation and completion of aviation maintenance activities. ACN will include the hardware solution as well as the digital logbook functionality and legacy software applications. ACN will reduce the Information Technology footprint within an aviation unit by integrating multiple software tools onto one hardware platform.

The Degraded Visual Environment (DVE) system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft.

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT Avionics*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Joint Tactical Radio System (JTRS) integration and qualification for Apache AH-64E and Unmanned Aircraft Systems (UAS) platforms. *Articles:*	14.6460	17.2940	25.815
Description: The JTRS integration effort provides for the non-recurring engineering required to integrate and qualify the JTRS compliant radios and/or other advanced networking waveforms into the AH-64E and UAS platforms for both production cut-in and retrofit activities. *FY 2012 Accomplishments:* Continued Link 16 integration activities for AH-64E to support ground eletromagnetic environmental effect and integration tests. Initiated Apache early software integration for implementation of Networking Waveforms. Continued reusable radio control software development with completion of system requirements identification and initiation of detailed design. Selected and began qualification of JTRS antennas for use on all platforms. Continued to use antenna co-site effort to determine platform JTRS antenna locations and associated co-site analysis. Developed hardware and software modifications for integration of a JTRS compliant radio onto the UAS Shadow. Conducted Shadow JTRS flight test. *FY 2013 Plans:* Continue Link 16 integration activities for AH-64E to support ground and flight tests. Continue JTRS integration onto the Shadow platform and conduct final JTRS engineering change proposal qualification activities for UAS Shadow. Complete qualification of JTRS antennas for use on all platforms. Continue to use antenna co-site effort to determine platform JTRS antenna locations and associated co-site analysis. *FY 2014 Plans:* Initiate JTRS integration activities on AH-64E and the UAS Grey Eagle for implementation of a networking radio with Soldier Radio Waveform (SRW) and/or other advanced networking waveform. Complete Link 16 integration activities for AH-64E for implementation onto Lot 4 aircraft.			
Title: Joint Precision Approach and Landing System (JPALS) *Articles:*	8.2970	0.000	0.000
Description: The JPALS introduces a precision approach and landing system providing joint operational capability for U.S. forces assigned to conventional and special operation missions including those operating from fixed base, ship, tactical, and special mission environments under a wide range of meteorological and jamming conditions. *FY 2012 Accomplishments:* Completed the AIG effort related to the AH-64D platform, Block III. Completed non-recurring engineering efforts for M-Code development. Completed Small Antenna System anti-jamming antenna co-site analysis and M-Code recurring prototyping.			

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT Avionics*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Completed the JCATD effort, and continued to support JPALS Increment 1 and 2 development and Program Management coordination meetings, Technical Interchange Meetings, and working groups.			
Title: Improved Data Modem (IDM) **Articles:** *Description:* The IDM is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to Tactical internet and Fire Support internet for Army Aviation. The IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164 and the Blue Force Tracker transceivers. Funds are required to continue development of an Open Systems Architecture (OSA) and Joint Battle Command -Platform (Aviation) (JBC-P(A)) solution compatible with the AH-64D, CH-47F, HH/UH-60M, OH-58D. This effort provides the foundation to develop and qualify a new hardware architecture to host IDM and Army Common Operating Environment applications to ensure interoperability on the future digital battlefield. *FY 2012 Accomplishments:* Conducted and evaluated IDM OSA hardware and software against the qualification plans. Conducted test activities and maintained ASIF Test lab. Achieved Airworthiness rating and authorization to operate for the IDM OSA. Delivered engineering releases of IDM OSA hardware and software to platforms to aid integration efforts. Continued development, integration, and testing of JBC-P(A).	25.306 0	0.000	0.000
Title: Doppler Global Positioning System (GPS) Navigation System (DGNS) Upgrade **Articles:** *Description:* The DGNS Upgrade program conducts system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules map display, and prepares engineering change proposals (ECP) to the existing DGNS Line Replaceable Units as a result of those trade studies. The effort also derives DGNS compliance matrices for current and planned GATM capabilities for the upcoming decade. *FY 2012 Accomplishments:* Completed the DGNS Upgrade ECP effort.	8.157 0	0.000	0.000
Title: Aviation Mission Planning System (AMPS) **Articles:** *Description:* The AMPS is a mission planning battle synchronization tool that automates aviation mission planning tasks, including tactical command and control, mission planning, and flight planning. It interfaces with Army Mission Command Systems and associated networks which furnish the aviation commander with continuous situational awareness, allowing the commander to rapidly adjust mission plans. The electronic formats are loaded onto the aircraft platforms, initializing the communication,	0.900 0	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT C97: *ACFT Avionics*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
navigation, situational awareness, and weapons systems on the aircraft including the AH-64 A/D, CH-47 D/F, OH-58D Kiowa Warrior, UH-60 A/L/M/Q, HH-60 L/M, and UAS. This effort will allow for the integration of new route server, calculation engine, and tabular editor components into the AMPS configuration and modifications to the Aircraft Weapons Electronics (AWE) modules to make use of the new components. *FY 2012 Accomplishments:* Completed design, development, integration, and test of additional software components needed for the XPLAN application. Completed the updates required to modify platform AWEs allowing them to function in the XPLAN architecture. Completed development platform AWEs to support new aircraft to include the Block III programs for UH-60M, CH-47, and OH-58D CDS4.			
Title: Future Airborne Capability Environment (FACE) *Articles:* *Description:* FACE, previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. This includes the non-recurring engineering for integration, test, and air worthiness qualification. As part of the Army's migration to a net-centric fighting force, it is necessary for aircraft to access certain critical services that enable seamless access and operation on the future force network. *FY 2012 Accomplishments:* Began integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence via FACE.	10.076 0	0.000	0.000
Title: Aviation Data Exploitation Capability (ADEC) *Articles:* *Description:* The ADEC is an Army Aviation program to develop, integrate, and test specific capabilities needed at the Aviation unit level to implement and support improvements within aviation maintenance, operations, safety and training. ADEC will standardize data and information formats and provide a comprehensive and fully integrated automated information system. ADEC provides a common and interoperable capability required to implement Condition Based Maintenance, Military Flight Operations Quality Assurance, and Platform Maintenance Environment processes. ADEC is the transformation system required for interoperability with the Army's future logistic systems. *FY 2012 Accomplishments:*	9.764 0	0.000	0.000

Exhibit R-2A, **RDT&E Project Justification:** PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT Avionics*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2012**	**FY 2013**	**FY 2014**
Continued design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Continued the advanced component development and prototyping of the baseline MFOQA applications, Aviation Maintenance Software Suite, and CAFRS integration.			
Title: Aircraft Notebook (ACN) ***Articles:***	5.444 0	0.000	0.000
Description: The ACN will provide users with an aviation centric suite of software utilized for streamlined documentation and completion of aviation maintenance activities. ACN will include the hardware solution as well as the digital logbook functionality and legacy software applications. ACN will reduce the Information Technology footprint within an aviation unit by integrating multiple pieces of software onto one piece of hardware. ***FY 2012 Accomplishments:*** Continued software design, development, integration, and testing of the ACN applications.			
Title: Degraded Visual Environment (DVE) ***Articles:***	33.300 0	0.000	0.000
Description: The DVE system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft. ***FY 2012 Accomplishments:*** Continued the development of the DVE hardware and software.			
Accomplishments/Planned Programs Subtotals	115.890	17.294	25.815

Exhibit R-2A, **RDT&E Project Justification:** PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT Avionics*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• Network and Mission Plan: *Network and Mission Plan*	118.432	190.789	152.569		152.569	182.009	186.239	185.675	172.847	Continuing	Continuing
• COMMS, NAV Surveillance: *COMMS, NAV Surveillance*	117.855	133.191	126.949		126.949	166.082	155.377	96.003	110.888	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project is comprised of multiple systems supporting aircraft avionics. While the detailed acquisition strategy varies from program to program, the general strategy is for each individual program to complete the development and testing efforts in coordination with the aircraft platforms on integration issues, use the various contracts of the aircraft platforms original equipment manufacturers on integration efforts, and utilize the Aviation & Missile Research, Development, and Engineering Center for software development. This requires the use of various contract methods and types to accomplish the aircraft avionics development efforts. All required acquisition program documentation is prepared.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)							R-1 ITEM NOMENCLATURE PE 0604201A: AIRCRAFT AVIONICS					PROJECT C97: ACFT Avionics		

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Spt (ACN)	Various	Various:Various	0.528	0.441	Dec 2011	-		-		-		-	0.000	0.969	0.000
PM Spt (IDM)	Various	Various:Various	0.174	0.175	Dec 2011	-		-		-		-	0.000	0.349	0.000
PM Spt (ADEC)	Various	Various:Various	1.500	1.295	Dec 2011	-		-		-		-	0.000	2.795	0.000
PM Spt (DVE)	Various	Various:Various	0.872	0.927	Dec 2011	-		-		-		-	0.000	1.799	0.000
Subtotal			3.074	2.838		0.000		0.000		0.000		0.000	0.000	5.912	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JTRS Common Radio Control Software Development	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	1.378	1.295	Mar 2012	2.725	Mar 2013	2.886	Dec 2013	-		2.886	Continuing	Continuing	Continuing
JTRS Antenna Development and Co-Site	C/CPFF	AMRDEC, Prototype Integration Facility:Redstone Arsenal, AL	1.108	0.778	Feb 2012	1.772	Feb 2013	0.650	Mar 2014	-		0.650	0.000	4.308	0.000
JBC-P(A) development and testing (IDM)	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	6.000	5.000	Feb 2012	-		-		-		-	0.000	11.000	0.000
Tri-Service XPlan component integration/ AWE modifications (AMPS)	PO	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	3.003	0.900	Feb 2012	-		-		-		-	0.000	3.903	0.000
JTRS Networking Radio Integration and Qualification onto Shadow	SS/CPFF	AAI Corporation:Huntvalley, MD	3.312	1.350	Aug 2012	-		-		-		-	0.000	4.662	0.000
JTRS Networking Radio Integration and Qualification onto Grey Eagle	SS/CPFF	General Atomics:San Diego, CA	0.000	-		-		3.500	Dec 2013	-		3.500	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013		

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604201A: AIRCRAFT AVIONICS	PROJECT C97: ACFT Avionics

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JTRS Networking Radio Integration and Qualification onto AH-64E	SS/CPAF	Boeing:Mesa, AZ	0.000	-	-	-	-	7.219	Dec 2013	-	-	7.219	Continuing	Continuing	Continuing
Air Integration Guides (AIG) (JPALS)	Various	Various:Various	1.700	0.231	Feb 2012	-	-	-	-	-	-	-	0.000	1.931	0.000
JPALS Common Avionics Technology Development (JCATD)	C/CPFF	Honeywell:Clearwater, FL	7.607	5.792	Dec 2011	-	-	-	-	-	-	-	0.000	13.399	0.000
Middleware integration via FACE	Various	Various:Various	0.000	10.076	Feb 2012	-	-	-	-	-	-	-	0.000	10.076	0.000
Design, develop, and integrate ADEC software and hardware	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	6.657	6.773	Feb 2012	-	-	-	-	-	-	-	0.000	13.430	0.000
DGNS Upgrade	C/CPFF	BAE Systems:Nashua, NH	2.934	8.157	Dec 2011	-	-	-	-	-	-	-	0.000	11.091	0.000
Develop and qualify OSA hardware to host IDM	Various	Various:Various	1.082	17.131	Feb 2012	-	-	-	-	-	-	-	0.000	18.213	0.000
Develop and qualify the DVE hardware and software	Various	Various:Various	4.169	32.373	Feb 2012	-	-	-	-	-	-	-	0.000	36.542	0.000
Design, develop, and integrate ACN software and hardware	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	4.381	3.400	Feb 2012	-	-	-	-	-	-	-	0.000	7.781	0.000
JTRS Engineering Design Model (EDM) technical support	C/CPIF	Lockheed Martin:San Diego, CA	0.000	1.175	Feb 2012	0.500	Feb 2012	-	-	-	-	-	0.000	1.675	0.000
JTRS Link-16 Integration onto AH-64E	SS/CPFF	Boeing:Mesa, AZ	15.135	10.048	Dec 2011	12.297	Dec 2012	9.751	Dec 2013	-	-	9.751	0.000	47.231	0.000
Engineering Change Proposals (JTRS)	TBD	Various:Various	0.000	-	-	-	-	0.659	Mar 2014	-	-	0.659	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army													DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*								**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*					**PROJECT** C97: *ACFT Avionics*		

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			58.466	104.479		17.294		24.665		0.000		24.665			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering, Logistics, and Technical Support (ADEC)	Various	Various:Various	1.314	0.761	Feb 2012	-		-		-		-	0.000	2.075	0.000
System Engineering, Logistics, and Technical Support (JPALS)	Various	Various:Various	1.986	2.274	Feb 2012	-		-		-		-	0.000	4.260	0.000
Data (ADEC)	Various	Various:Various	0.487	0.570	Feb 2012	-		-		-		-	0.000	1.057	0.000
System Engineering, Logistics, and Technical Support (ACN)	Various	Various:Various	1.016	0.925	Feb 2012	-		-		-		-	0.000	1.941	0.000
Data (ACN)	Various	Various:Various	0.114	0.201	May 2012	-		-		-		-	0.000	0.315	0.000
System Engineering, Technical Support (JTRS)	C/T&M	TBD:TBD	0.000	-		-		0.750	Feb 2014	-		0.750	Continuing	Continuing	Continuing
Subtotal			4.917	4.731		0.000		0.750		0.000		0.750			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation (JTRS)	TBD	Various:Various	0.000	-		-		0.400	Feb 2014	-		0.400	Continuing	Continuing	Continuing
Test and Evaluation (ACN)	Various	Various:Various	0.569	0.477	Feb 2012	-		-		-		-	0.000	1.046	0.000
ASIF Test Lab (IDM)	Various	AMCOM:Redstone Arsenal, AL	3.000	3.000	Feb 2012	-		-		-		-	0.000	6.000	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army														DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)									R-1 ITEM NOMENCLATURE PE 0604201A: AIRCRAFT AVIONICS					PROJECT C97: ACFT Avionics		

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation (ADEC)	Various	Various:Various	0.182	0.365	Feb 2012	-		-		-		-	0.000	0.547	0.000
Subtotal			3.751	3.842		0.000		0.400		0.000		0.400			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	70.208	115.890	17.294	25.815	0.000	25.815			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604201A: AIRCRAFT AVIONICS	PROJECT C97: ACFT Avionics

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JTRS AH-64E Networking Radio Integration and Qualification																												
JTRS Grey Eagle Integration and Qualification																												
Middleware Integration via FACE																												

Exhibit R-4A, **RDT&E Schedule Details:** PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** C97: *ACFT Avionics*

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JTRS AH-64E Networking Radio Integration and Qualification	1	2014	4	2016
JTRS Grey Eagle Integration and Qualification	1	2014	4	2016
Middleware Integration via FACE	2	2012	4	2012

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army											DATE: April 2013	

APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*					R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*				PROJECT VU3: *Networking And Mission Planning*			

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
VU3: *Networking And Mission Planning*	-	0.000	61.244	50.773	-	50.773	66.704	13.025	4.626	61.906	Continuing	Continuing
Quantity of RDT&E Articles												

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

Note

Several systems/functions shift from Project C97 to Project VU3 in FY 2013. They include the Improved Data Modem (IDM), the Aviation Mission Planning System (AMPS), Future Airborne Capability Environment (FACE), Aviation Data Exploitation Capability (ADEC), the Aircraft Notebook (ACN), and the Degraded Visual Environment (DVE) system.

A. Mission Description and Budget Item Justification

The FY 2014 budget request funds the development of Networking and Mission Planning systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Project support research, development, and test efforts in the Engineering and Manufacturing Development (EMD) phases of these systems.

The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to the Tactical Internet and Fire Support internet for Army aircraft. With interfaces supporting a transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker transceivers. IDM provides a flexible, software driven digital messaging system that is interoperable with existing Army and Joint forces battlefield operating systems. The IDM provides Situational Awareness and Variable Message Format messages capability to the cockpit.

The Future Airborne Capability Environment (FACE), previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. This includes the non-recurring engineering for integration, test, and air worthiness qualification. As part of the Army's migration to a net-centric fighting force, it is necessary for aircraft to access certain critical services that enable seamless access and operation on the future force network.

The Aviation Data Exploitation Capability (ADEC) is an Army Aviation program to develop, integrate, and test specific capabilities needed at the Aviation unit level to implement and support improvements within aviation maintenance, operations, safety and training. ADEC will standardize data and information formats and provide a comprehensive and fully integrated automated information system. ADEC provides a common and interoperable capability required to implement Condition Based Maintenance, Military Flight Operations Quality Assurance, and Platform Maintenance Environment processes.

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604201A: AIRCRAFT AVIONICS	PROJECT VU3: Networking And Mission Planning

The Aircraft Notebook (ACN) will provide users with an aviation centric suite of software utilized for streamlined documentation and completion of aviation maintenance activities. ACN will include the hardware solution as well as the digital logbook functionality and legacy software applications. ACN will reduce the Information Technology footprint within an aviation unit by integrating multiple software tools onto one hardware platform.

The Degraded Visual Environment (DVE) system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft.

The Aviation Logistics Enterprise - Platform (ALE-P) will replace the Unit Level Logistics System-Aviation (Enhanced) (ULLS-A[E]), which has transitioned into sustainment, and the Unmanned Aviation Systems-Initiative (UAS-I), which currently only provides automated logistics capabilities for the UAS community. ALE-P will provide an Aviation enterprise capability interface to the Global Combat Support System-Army (GCSS-Army). ALE-P will be a system of software and hardware that forms a Logistics Management and Decision Support System (DSS). ALE-P will interface with the ACN and the ADEC as an integrated Family of Systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Improved Data Modem (IDM)	0.000	2.072	0.000
Articles:		0	
Description: The IDM is the common solution for digitizing Army Aviation. It performs as an internet controller and gateway to Tactical internet and Fire Support internet for Army Aviation. The IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164 and the Blue Force Tracker transceivers. Funds are required to continue development of an Open Systems Architecture (OSA) and Joint Battle Command -Platform (Aviation) (JBC-P(A)) solution compatible with the AH-64D, CH-47F, HH/UH-60M, OH-58D. This effort provides the foundation to develop and qualify a new hardware architecture to host IDM and Army Common Operating Environment applications to ensure interoperability on the future digital battlefield. FY 2013 Plans: Deliver engineering releases of IDM OSA hardware and software to aircraft platforms to aid integration efforts. Continue development, integration, and testing of JBC-P(A) products.			
Title: Future Airborne Capability Environment (FACE)	0.000	5.200	0.000
Articles:		0	

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** VU3: *Networking And Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Description: FACE, previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. This includes the non-recurring engineering for integration, test, and air worthiness qualification. As part of the Army's migration to a net-centric fighting force, it is necessary for aircraft to access certain critical services that enable seamless access and operation on the future force network. *FY 2013 Plans:* Continue integration of the selected middleware into the Army Aviation Platforms to support the Army Common Operating Environment convergence via FACE.			
Title: Aviation Data Exploitation Capability (ADEC) **Articles:** **Description:** The ADEC is an Army Aviation program to develop, integrate, and test specific capabilities needed at the Aviation unit level to implement and support improvements within aviation maintenance, operations, safety and training. ADEC will standardize data and information formats and provide a comprehensive and fully integrated automated information system. ADEC provides a common and interoperable capability required to implement Condition Based Maintenance, Military Flight Operations Quality Assurance, and Platform Maintenance Environment processes. ADEC is the transformation system required for interoperability with the Army's future logistic systems. *FY 2013 Plans:* Continue design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Continue the advanced component development of Phase I applications. *FY 2014 Plans:* Continue design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Start the advanced component development of Phase II applications and conduct OT&E.	0.000	9.200 0	9.534
Title: Degraded Visual Environment (DVE) **Articles:** **Description:** The DVE system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles	0.000	43.500 0	29.558

Exhibit R-2A, **RDT&E Project Justification:** PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** VU3: *Networking And Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2012**	**FY 2013**	**FY 2014**
and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft. *FY 2013 Plans:* Continue development of the DVE hardware and software. *FY 2014 Plans:* Conduct technical design and development of DVE system.			
Title: Aviation Logistics Enterprise-Platform (ALE-P) ***Articles:*** **Description:** ALE-P will replace the Unit Level Logistics System-Aviation (Enhanced) (ULLS-A[E]) which has transitioned into sustainment and the Unmanned Aviation Systems-Initiative (UAS-I) which currently only provides automated logistics capabilities for the UAS community. ALE-P will provide an Aviation enterprise capability interface to the Global Combat Support System-Army (GCSS-Army). ALE-P will be a combination of software and hardware that forms a Logistics Management and Decision Support System (DSS). ALE-P will interface with the ACN and the ADEC as an integrated Family of Systems. There is no installation of ALE-P because it consists of loading software on a server which is done by training/fielding teams. *FY 2013 Plans:* Begin design, development, testing, and integration of ALE-P hardware and software and begin OT&E activities. *FY 2014 Plans:* Continue development, test, and integration of ALE-P hardware and software and OT&E activities.	0.000	1.272 0	8.227
Title: Aircraft Notebook (ACN) **Description:** The ACN will provide users with an aviation centric suite of software utilized for streamlined documentation and completion of aviation maintenance activities. ACN will include the hardware solution as well as the digital logbook functionality and legacy software applications. ACN will reduce the Information Technology footprint within an aviation unit by integrating multiple pieces of software onto one piece of hardware. *FY 2014 Plans:*	0.000	0.000	3.454

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*	PROJECT VU3: *Networking And Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continue design, development, integration, and testing of the hardware and software needed to realize the ACN system. Continue the advanced component development of Phase III applications, the development of platform specific software, ADEC and ALE-P integration and Initial Operational Test and Evaluation.			
Accomplishments/Planned Programs Subtotals	0.000	61.244	50.773

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• Network and Mission Plan: *Network and Mission Plan*	136.432	190.789	152.569		152.569	182.009	186.239	185.675	172.847	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project is comprised of multiple systems supporting aircraft avionics. While the detailed acquisition strategy varies from program to program, the general strategy is for each individual program to complete the development and testing efforts in coordination with the aircraft platforms on integration issues, use the various contracts of the aircraft platforms original equipment manufacturers on integration efforts, and utilize the Aviation & Missile Research, Development, and Engineering Center for software development. This requires the use of various contract methods and types to accomplish the aircraft avionics development efforts. All required acquisition program documentation is prepared.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** VU3: *Networking And Mission Planning*

Management Services ($ in Millions)

				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
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**	**Cost To Complete**	**Total Cost**	**Target Value of Contract**
PM Support (IDM)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		0.321	Oct 2012	-		-		-	0.000	0.321	0.000
PM Support (ADEC)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		0.349	Oct 2012	1.707	Sep 2014	-		1.707	0.000	2.056	0.000
PM Support (ACN)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.223	Oct 2013	-		1.223	0.000	1.223	0.000
PM Support (ALE-P)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.427	Oct 2013	-		1.427	Continuing	Continuing	Continuing
PM Support (DVE)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		1.396	Oct 2012	2.827	Oct 2013	-		2.827	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		2.066		7.184		0.000		7.184			

Product Development ($ in Millions)

				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
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**	**Cost To Complete**	**Total Cost**	**Target Value of Contract**
Middleware integration via FACE	Various	TBD:TBD	0.000	-		5.200	Jan 2013	-		-		-	0.000	5.200	0.000
Develop and qualify the software and hardware for ALE-P.	Various	Various:Various	0.000	-		1.272	Feb 2013	3.675	Feb 2014	-		3.675	Continuing	Continuing	Continuing
Develop and qualify OSA hardware to host IDM	Various	Various:Various	0.000	-		0.500	Jan 2013	-		-		-	0.000	0.500	0.000
Qualify ADEC software and hardware	Various	Various:Various	0.000	-		6.883	Jan 2013	5.722	Apr 2014	-		5.722	0.000	12.605	0.000
Develop and qualify DVE hardware and software	Various	Various:Various	0.000	-		42.104	Jan 2013	-		-		-	Continuing	Continuing	Continuing
Qualify ACN software and hardware	TBD	Various:Various	0.000	-		-		0.735	Jul 2014	-		0.735	0.000	0.735	0.000
		Subtotal	0.000	0.000		55.959		10.132		0.000		10.132			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army														DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*										R-1 ITEM NOMENCLATURE PE 0604201A: *AIRCRAFT AVIONICS*				PROJECT VU3: *Networking And Mission Planning*		

Support ($ in Millions)

				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
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	Cost To Complete	Total Cost	Target Value of Contract
System Engineering, Logistics, and Technical Support (DVE)	Various	Various:Various	0.000	-		-		7.904	Jan 2013	-		7.904	Continuing	Continuing	Continuing
System Engineering, Logistics, and Technical Support (ADEC)	Various	Various:Various	0.000	-		0.599	Feb 2013	0.313	Feb 2014	-		0.313	0.000	0.912	0.000
System Engineering, Logistics, and Technical Support (ACN)	Various	Various:Various	0.000	-		-		0.129	Feb 2014	-		0.129	0.000	0.129	0.000
System Engineering, Logistics, and Technical Support (ALE-P)	Various	Various:Various	0.000	-		-		1.387	Feb 2014	-		1.387	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.599		9.733		0.000		9.733			

Test and Evaluation ($ in Millions)

				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
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	Cost To Complete	Total Cost	Target Value of Contract
Aviation Systems Integration Facility Test Lab (IDM)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		1.251	Jan 2013	-		-		-	0.000	1.251	0.000
SVT and LUE for DVE ONS System	TBD	TBD:TBD	0.000	-		-		18.827	Jun 2014	-		18.827	Continuing	Continuing	Continuing
ADEC	Various	AMCOM:Redstone Arsenal, AL	0.000	-		1.369	Feb 2013	1.792	Feb 2014	-		1.792	0.000	3.161	0.000
ACN	TBD	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.367	Apr 2014	-		1.367	0.000	1.367	0.000
ALE-P	TBD	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.738	Feb 2014	-		1.738	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		2.620		23.724		0.000		23.724			

| **Exhibit R-3**, **RDT&E Project Cost Analysis:** PB 2014 Army | | | | | | | | | | **DATE:** April 2013 |

| **APPROPRIATION/BUDGET ACTIVITY**
2040: *Research, Development, Test & Evaluation, Army*
BA 5: *System Development & Demonstration (SDD)* | **R-1 ITEM NOMENCLATURE**
PE 0604201A: *AIRCRAFT AVIONICS* | **PROJECT**
VU3: *Networking And Mission Planning* |

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	61.244	50.773	0.000	50.773			

Remarks

Exhibit R-4, **RDT&E Schedule Profile:** PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** VU3: *Networking And Mission Planning*

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Middleware Integration via FACE					███	███	███																					
Develop hardware and software (ALE-P)							███	███	███	███	███	███	███	███	███	███	███	███										

Exhibit R-4A, **RDT&E Schedule Details:** PB 2014 Army		**DATE:** April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604201A: *AIRCRAFT AVIONICS*	**PROJECT** VU3: *Networking And Mission Planning*

<p align="center">Schedule Details</p>

Events	Start		End	
	Quarter	**Year**	**Quarter**	**Year**
Middleware Integration via FACE	2	2012	4	2013
Develop hardware and software (ALE-P)	2	2013	3	2016