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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Navy **Date:** February 2015

<b>Appropriation/Budget Activity</b> 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					<b>R-1 Program Element (Number/Name)</b> PE 0604214N / AV-8B Aircraft - Engine Dev							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	303.573	30.291	25.372	39.878	-	39.878	22.315	21.105	19.531	17.840	Continuing	Continuing
0652: AV-8B	303.573	30.291	25.372	39.878	-	39.878	22.315	21.105	19.531	17.840	Continuing	Continuing

## A. Mission Description and Budget Item Justification

The program provides for AV-8B Design, Development, Integration and Test of various platform improvements such as: Engine Life Management Program (ELMP), Escape Systems, Joint Mission Planning System (JMPS), and Block upgrades to various mission systems, communications systems, navigation equipment, weapons carriage and countermeasures, and the Obsolescence Replacement (OR)/Readiness Management Plan (RMP) including structural, hydraulic, electrical, environmental, and mechanical systems. The JMPS is required as part of the Department of the Navy directed migration to a common Navy and Marine Corps mission planning system. OR/RMP represents all engineering activities for development and design to support aircraft safety flight clearances, concept explorations, and developments to support Program Objective Memorandum. The program's Evolutionary Acquisition Strategy includes Design, Development, Integration and Test activities under the consolidated effort of Block Developments: H6.1, H6.2 and follow-on block upgrades, to include a H7.0 block upgrade that will be required to implement Link 16 capability. The H6.1 update will provide enhancements and software corrections that improve the AV-8B platform combat effectiveness, survivability, and relevance through avionics processor upgrades, mission planning updates, and Litening Operational Flight Programs. A H6.2 update, including the Common Avionics Program, provides AV-8B a self-contained Global Positioning System navigation capability that is required to access preferred airspaces, and will include a Litening Operational Flight Program. AV-8B funding supports peculiar flight test requirements. The Link 16 integration effort, which will require an H7.0 Operational Flight Program (OFP) upgrade beyond H6.2, will provide interoperability, combat identification, situational awareness, and information sharing. Connection to the Link 16 network is vital to the AV-8B's ability to operate within some Command and Control situations and Operational Plans, as designed today, as well as provide a tactical capability for the more effective and safe prosecution of both airborne and ground targets. Continued AV-8B combat relevance through 2025 is critical to the Marine Air-Ground Task Force's ability to generate aviation combat power throughout the transition to F-35B. J-series, K-series, Tactical Targeting Network Technology, and other emerging datalink technology messages are required to support current and future mission threads. Linked performance on par with current tactical platforms as well as design to communicate with F-35 is required for the AV-8B to remain tactically relevant to sundown. AIM-120 unique platform flight test will be required to utilize updated AIM-120C variants on the AV-8B and utilize the AIM-120 in mixed stores loadouts. The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and accessories. PMA-257 will accomplish this mission by conducting Engineering Project Description investigations and performing a series of planned Endurance Tests to derive engineering improvements to the engine. The OR/RMP is required to ensure the AV-8B air vehicle's sustained mission availability, and safe and reliable operational readiness until end of service. Air vehicle sustainment requires component and system analyses, technical planning, identification, prioritization, and diagnosis of emergent problems and the allocation of resources for the development, testing and flight clearance of engineering solutions in the areas of flight, crew safety, and escape systems and structural integrity, obsolescence, systems reliability and maintainability, inventory preservation, alternative mission development, or other emergent material or equipment conditions affecting AV-8B systems readiness. Activities include research/analysis for system safety deficiency corrections, fuel system safety improvements, structural analyses, monitoring and integrity analysis, component compatibility, component obsolescence analyses and mitigation development, explorations for aging equipment, reliability improvement analyses and design developments. FY 2016 continues development efforts and associated obsolescence and readiness requirements for ELMP, RMP, Link 16, weapons carriage, and OFP updates.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	33.325	25.372	48.325	-	48.325
Current President's Budget	30.291	25.372	39.878	-	39.878
Total Adjustments	-3.034	-	-8.447	-	-8.447
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.000	-			
• SBIR/STTR Transfer	-1.034	-			
• Program Adjustments	-	-	-38.743	-	-38.743
• Rate/Misc Adjustments	-	-	30.296	-	30.296

**Change Summary Explanation**

The FY 2016 funding request was reduced by \$1 million to account for the availability of prior year execution balances.

Technical: HX now defined as H7.0.

Schedule: H7.0 Software Development effort captured 1Q FY16 to 1Q FY18. AIM-120C Flight Test effort captured 2Q FY16 to 2Q FY18.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604214N / AV-8B Aircraft - Engine Dev				Project (Number/Name) 0652 / AV-8B			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0652: AV-8B	303.573	30.291	25.372	39.878	-	39.878	22.315	21.105	19.531	17.840	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program provides for AV-8B Design, Development, Integration and Test of the following improvements: The Engine Life Management Program (ELMP), Operational Flight Program (OFP) and Avionics/Weapons Integration, Escape System, and Readiness Management Plan (RMP). The ELMP is a comprehensive plan to increase safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and Gas Turbine Starter, as well as other critical engine components. The Program Office will accomplish this mission through the Component Improvement Program, which entails Engineering Project Description investigations and a series of planned Endurance Tests to derive safety and reliability improvements to the engine and engine components. The Joint Mission Planning System is required as part of the Department of Navy directed migration to a common Navy and Marine Corps mission planning system. H6.1 provides enhancements and software corrections, and H6.2 (Common Avionics Program) provides Global Positioning System navigation capabilities as well as software updates. H7.0 OFP will integrate APX-123 and Link 16 capability and provide software updates. Follow on OFP will integrate common avionics ADS-B (out), Mode 5, and Mode S Identification Friend or Foe capabilities. Other specific efforts include Airborne Variable Message Format Terminal and AIM-120C flight test, as AIM-120A/B will become obsolete, as well as AIM-120 mixed stores flight test. The program is working closely with the Common Avionics Program and the Allies (Spain and Italy) on all efforts. RMP represents all engineering activities for development and design to support aircraft safety, flight clearance and concept exploration for resolution of emergent safety, service life, escape systems, compatibility, obsolescence, and readiness issues.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Development of RMP Engineering Change Proposals	22.807	14.265	11.729	-	11.729
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Develop obsolescence solutions to improve safety, structural integrity, and systems reliability of the AV-8B aircraft.					
<b>FY 2014 Accomplishments:</b> Extensions to AV-8B End of Service date require extensive obsolescence mitigation efforts to preclude aircraft on ground. The program begun in PB13 will continue to address known, predicted, and emergent obsolescence equipment issues. Systems engineering will support ongoing and emergent analysis and design/development efforts required to identify Engineering Change Proposal (ECP) requirements to correct systems safety, structural integrity, and readiness issues.					
<b>FY 2015 Plans:</b> Extensions to AV-8B End of Service date require extensive obsolescence mitigation efforts to preclude aircraft on ground. The program begun in PB14 will continue to address known, predicted, and emergent obsolescence					

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Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604214N / AV-8B Aircraft - Engine Dev	Project (Number/Name) 0652 / AV-8B			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
equipment issues. Systems engineering will support ongoing and emergent analysis and design/development efforts required to identify ECP requirements to correct systems safety, structural integrity, and readiness issues. Begin design of Brake Temperature monitoring system to prevent brake fires and improve safety. Begin the development of Improved Main Landing Gear strut servicing indication system to improve safety and reliability. Conduct system engineering study and design work for Outrigger Landing Gear service indicating system to improve safety and reliability. Begin system engineering analyses and design for GR-9 component compatibility.  <b>FY 2016 Base Plans:</b> Extension to AV-8B End of Service date requires continued obsolescence mitigation efforts to preclude aircraft on ground. The program begun in PB15 will continue to address known, predicted, and emergent obsolescence equipment issues. Systems engineering will support ongoing and emergent analysis and design/development efforts required to identify Engineering Change Proposal requirements to correct systems safety, structural integrity, compatibility, and readiness issues. Complete design of Brake Temperature monitoring system to prevent brake fires and improve safety. Continue the development of Improved Main Landing Gear strut servicing indication system and Environmental Control System capacity (Turbine) improvements. Continue system engineering analyses and design for GR-9 component compatibility and Heads Up Display combining glass. Begin Vinson/Advanced Narrowband Digital Voice Terminal Cryptographic Modernization obsolescence remediation to improve safety and reliability.  <b>FY 2016 OCO Plans:</b> N/A						
<b>Title:</b> Operational Flight Program (OFP) and Avionics Weapons Systems Development and Integration  <b>Articles:</b>  <b>Description:</b> Develop Airborne Variable Message Format Terminal, formerly Strikelink/A. Aircraft Operational Flight Program (OFP) updates, mission planning updates, Litening Pod software updates, support aircraft avionics development efforts, integrate weapon such as AIM-120C, and conduct Link 16 integration efforts.  <b>FY 2014 Accomplishments:</b> Funds will provide for future capability expansion studies and analyses, peculiar flight test requirements, and aircraft OFP/Litening Pod software updates and developmental test as part of the H6.1 and H6.2 block upgrades.  <b>FY 2015 Plans:</b> Funds will provide for future capability expansion studies and analyses, peculiar flight test requirement, and aircraft OFP/Litening Pod software updates and developmental test as part of the H6.2 upgrade. Begin Global		2.368 -	4.458 -	21.697 -	- -	21.697 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Positioning System performance test in preparation for H6.2 upgrade development testing, which will require use of ranges and telemetry, and associated telemetry analysis. Begin developmental testing of second Mission Systems Computer processor card that will be used in H6.2.  <b>FY 2016 Base Plans:</b> Funds will provide for future capability expansion studies and analyses, peculiar flight test requirements, and aircraft Operational Flight Program/Litening Pod software updates and developmental test as part of the H6.2 upgrade. Continue developmental testing of second Mission Systems Computer processor card. Procure AIM-120 test assets and begin AIM-120C flight testing. Begin H7.0 OFP/Link 16 integration efforts.  <b>FY 2016 OCO Plans:</b> N/A						
<b>Title:</b> F402-RR-408 Engine Safety and Reliability Enhancements  <b>Articles:</b>  <b>Description:</b> Improve Safety and Reliability of the F402-RR-408 Engine for the AV-8B Harrier.  <b>FY 2014 Accomplishments:</b> The Component Improvement Program (CIP) will conduct investigations to develop improvements and develop design solutions for correction of deficiencies and issues resulting from safety, obsolescence and structural fatigue for the engine and accessories.  <b>FY 2015 Plans:</b> The engineering CIP will conduct investigations to develop improvements and develop design solutions for correction of deficiencies and issues resulting from safety, obsolescence and structural fatigue for the engine and accessories.  <b>FY 2016 Base Plans:</b> The engineering CIP will conduct investigations to develop improvements and develop design solutions for correction of deficiencies and issues resulting from safety, obsolescence, and structural fatigue for the engine and accessories.  <b>FY 2016 OCO Plans:</b> N/A		5.116 -	6.649 -	6.452 -	- -	6.452 -
Accomplishments/Planned Programs Subtotals		30.291	25.372	39.878	-	39.878

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Navy							<b>Date:</b> February 2015	
<b>Appropriation/Budget Activity</b> 1319 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604214N / AV-8B Aircraft - Engine Dev			<b>Project (Number/Name)</b> 0652 / AV-8B	

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APN/0514: AV-8B Series Modification	96.712	61.722	41.890	41.365	83.255	38.055	35.200	35.867	36.578	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

All efforts under obsolescence replacement Readiness Management Program provide investigations and analysis of testing and flight clearance authorization necessary to assess overall system capability and integration of projects. Funding for the Engine Life Management Program will be placed on a cost-type contract to Rolls-Royce to address safety of flight issues, top readiness degraders, engine removal and mission failure drivers in order to improve Fleet readiness and reduce cost of ownership. It is also developed to assess life management program issues and design fixes for any service revealed deficiencies. The program's Evolutionary Acquisition Strategy includes Design, Development, Integration and Test activity under the consolidated effort of Block Developments: H2.0, H4.0, H5.0, H6.0, H6.1, H6.2, H7.0 and following Operational Flight Programs (OFP). The development and integration of Joint Mission Planning System occurred concurrently with H2.0. H4.0 Block improvements included the Tactical Aircraft Moving Map Capability. H5.0 Block Upgrade provided Dual Mode Laser Guided Bomb, Litening Centerline/Station 4 (improvement of current weapons carriage capability). H6.0 Block Upgrade provided ALE-47 countermeasures system integration, and weapon carriage expansion. The program is working closely with the Allies (Spain and Italy) and the Common Avionics Program on H6.1 and H6.2 efforts. The H6.1 update will provide enhancements and software corrections that improve the AV-8B platform combat effectiveness, survivability, and relevance through avionics processor upgrades and Litening Common Operational Flight Program. The H6.2 update is being accomplished in conjunction with the Common Avionics Program and provides a Global Positioning System Navigation capability for AV-8B as well as a Litening Common Operational Flight Program update. Link 16 integration will require an H.7.0 Operational Flight Program subsequent to H6.2 and will provide the AV-8B with APX-123 and Link 16 capability. Follow-on OFP will be accomplished in conjunction with Common Avionics Program and will integrate ADS-B (out), Mode 5, and Mode S. Peculiar flight test efforts to include weapons integration such as AIM-120 will be conducted by NAWCWD and AV-8B flight test squadrons.

**E. Performance Metrics**

Achieve Engine Life Management Program Rolls-Royce Component Improvement Program contract award 1st Quarter FY 2016.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604214N / AV-8B Aircraft - Engine Dev				Project (Number/Name) 0652 / AV-8B					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - ELMP	C/CPFF	Rolls-Royce PLC : Bristol, GB	27.819	1.598	Feb 2014	1.960	Dec 2014	1.887	Dec 2015	-		1.887	9.449	42.713	42.713
Primary Hardware Development - ELMP	C/FFP	ONTIC (Goodrich) PS : Pitstone, GB	5.761	0.050	Mar 2014	0.300	Mar 2015	0.300	Mar 2016	-		0.300	1.500	7.911	7.911
Primary Hardware Development - OFP	WR	NAWCWD : China Lake, CA	46.051	-		0.250	Dec 2014	4.374	Dec 2015	-		4.374	Continuing	Continuing	Continuing
Primary Hardware Development - RMP	C/CPFF	GE Aviation DS : Grand Rapids, MI	16.839	-		-		-		-		-	3.371	20.210	20.210
Primary Hardware Development	C/CPFF	Stauder : St. Peters, MO	12.449	-		-		-		-		-	7.580	20.029	20.029
Primary Hardware Development - RMP	WR	NAWCAD : Patuxent River, MD	0.220	-		0.467	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Primary Hardware Development - RMP	C/FFP	Boeing : St. Louis, MO	0.391	4.356	Nov 2013	0.500	Jan 2015	-		-		-	2.000	7.247	7.247
Primary Hardware Development - OFP	C/FFP	Boeing : St. Louis, MO	0.000	-		0.531	Jan 2015	2.695	Dec 2015	-		2.695	-	3.226	3.226
Systems Engineering - RMP	C/FFP	Boeing : St. Louis, MO	10.450	2.765	Nov 2013	7.271	Jan 2015	5.842	Jan 2016	-		5.842	18.793	45.121	45.121
Systems Engineering - RMP	WR	NAWCWD : China Lake, CA	2.382	0.120	Nov 2013	0.121	Nov 2014	0.091	Nov 2015	-		0.091	Continuing	Continuing	Continuing
Systems Engineering - RMP	WR	NAWCAD : Patuxent River, MD	2.837	3.200	Nov 2013	2.396	Nov 2014	4.561	Nov 2015	-		4.561	Continuing	Continuing	Continuing
Systems Engineering - OFP	WR	NAWCAD : Patuxent River, MD	0.000	-		-		0.383	Nov 2015	-		0.383	Continuing	Continuing	Continuing
Systems Engineering - RMP	WR	TBD : Other Gov	0.000	-		0.104	Jan 2015	0.106	Jan 2016	-		0.106	Continuing	Continuing	Continuing
Prior year cost no longer funded in the FYDP	Various	Various : Various	13.600	-		-		-		-		-	-	13.600	-
Subtotal			138.799	12.089		13.900		20.239		-		20.239	-	-	-
Remarks Primary Hardware Development and System Engineering efforts increase in FY16 for H7.0 OFP/Link 16 integration efforts.															

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Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604214N / AV-8B Aircraft - Engine Dev				Project (Number/Name) 0652 / AV-8B					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - RMP	WR	NAWCWD : China Lake, CA	13.744	0.100	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Integrated Logistics Support - RMP	WR	NAWCAD : Patuxent River, MD	0.000	1.234	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Integrated Logistics Support - OFF	WR	NAWCAD : Patuxent River, MD	0.000	0.030	Nov 2013	-		0.231	Nov 2015	-		0.231	Continuing	Continuing	Continuing
Integrated Logistics Support - OFF	WR	FST : Cherry Pt, NC	0.000	-		-		0.231	Nov 2015	-		0.231	Continuing	Continuing	Continuing
Integrated Logistics Support - OFF	WR	NAWCAD : Lakehurst, NJ	0.000	-		-		0.085	Nov 2015	-		0.085	Continuing	Continuing	Continuing
Technical Data	C/CPFF	Various : Various	2.331	-		-		-		-		-	0.320	2.651	2.651
Studies and Analysis - OFF	WR	NAWCWD : China Lake, CA	0.000	0.222	Nov 2013	0.224	Nov 2014	0.227	Nov 2015	-		0.227	Continuing	Continuing	Continuing
Studies and Analysis - RMP	C/FFP	Boeing : St. Louis, MO	0.000	2.668	Nov 2013	0.501	Jan 2015	-		-		-	-	3.169	3.169
Studies and Analysis - OFF	C/FFP	Boeing : St. Louis, MO	0.000	0.853	Nov 2013	0.781	Nov 2014	-		-		-	-	1.634	1.634
Studies and Analysis	Various	Various : Various	5.478	-		-		-		-		-	1.815	7.293	7.293
Prior year cost no longer funded in the FYDP	Various	Various : Various	31.415	-		-		-		-		-	-	31.415	-
Subtotal			52.968	5.107		1.506		0.774		-		0.774	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation - RMP	C/CPFF	Boeing : St. Louis, MO	1.500	2.976	Dec 2013	1.233	Jan 2015	-		-		-	4.456	10.165	10.165
Developmental Test & Evaluation - RMP	WR	NAWCWD : China Lake, CA	37.047	4.598	Feb 2014	0.300	Jan 2015	0.833	Jan 2016	-		0.833	Continuing	Continuing	Continuing
Developmental Test & Evaluation - OFF	WR	NAWCWD : China Lake, CA	8.379	0.920	Feb 2014	2.877	Jan 2015	3.734	Jan 2016	-		3.734	Continuing	Continuing	Continuing



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Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604214N / AV-8B Aircraft - Engine Dev				Project (Number/Name) 0652 / AV-8B					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation - RMP	WR	NAWCAD : Patuxent River, MD	0.258	0.182	Dec 2013	0.360	Jan 2015	0.075	Jan 2016	-		0.075	Continuing	Continuing	Continuing
Developmental Test & Evaluation - OFP	C/CPFF	Raytheon : Tucson, AZ	0.000	-		-		8.334	Jun 2016	-		8.334	2.237	10.571	10.571
Operational Test & Evaluation - OFP	WR	COMOPTEVFOR : Norfolk, VA	23.137	0.075	Feb 2014	0.158	Dec 2014	0.161	Jan 2016	-		0.161	Continuing	Continuing	Continuing
Test Asset - RMP	C/CPFF	Northrup Grumman : Bethpage, NY	0.756	0.524	Mar 2014	-		-		-		-	-	1.280	1.280
Prior year cost no longer funded in the FYDP	Various	Various : Various	3.796	-		-		-		-		-	-	3.796	-
Subtotal			74.873	9.275		4.928		13.137		-		13.137	-	-	-
Remarks															
Developmental Test & Evaluation OFP increase in FY16 for AIM-120 test assets and to begin AIM-120 flight testing.															
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Tec SRVC (Non-FFRDC) - RMP	C/CPFF	Engility : Chantilly, VA	0.100	0.105	Dec 2013	0.106	Dec 2014	0.111	Dec 2015	-		0.111	-	0.422	0.422
Engineering & Tec SRVC (Non-FFRDC) - ELMP	C/CPFF	Zenetex : Herndon, VA	0.000	0.921	May 2014	0.705	May 2015	0.659	Jun 2016	-		0.659	-	2.285	2.285
Engineering & Tec SRVC (Non-FFRDC)	C/CPFF	Various : Various	5.135	-		-		-		-		-	7.500	12.635	12.635
Government Engineering Support - ELMP	WR	NAWCAD : Patuxent River, MD	4.274	1.103	Nov 2013	2.380	Nov 2014	2.330	Nov 2015	-		2.330	Continuing	Continuing	Continuing
Government Engineering Support - OFP	WR	NAWCAD : Patuxent River, MD	1.327	0.174	Nov 2013	0.312	Nov 2014	1.071	Nov 2015	-		1.071	Continuing	Continuing	Continuing
Government Engineering Support - OFP	WR	NAWCTSD : Orlando, FL	0.000	-		-		0.050	Dec 2015	-		0.050	Continuing	Continuing	Continuing
Government Engineering Support	WR	Various : Various	5.463	-		-		-		-		-	Continuing	Continuing	Continuing

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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support - ELMP	WR	NAWCWD : China Lake, CA	0.000	0.861	Jul 2014	0.835	Dec 2014	0.848	Dec 2015	-		0.848	Continuing	Continuing	Continuing
MGT & PROF SUPPT SRVC (NON-FFRDC)	C/CPFF	Various : Various	8.365	0.570	Dec 2013	0.596	Dec 2014	0.555	Dec 2015	-		0.555	12.542	22.628	22.628
Program Management Support	WR	Various : Various	11.217	-		-		-		-		-	Continuing	Continuing	Continuing
Travel	WR	Various : Various	1.052	0.086	Oct 2013	0.104	Oct 2014	0.104	Oct 2015	-		0.104	Continuing	Continuing	Continuing
Subtotal			36.933	3.820		5.038		5.728		-		5.728	-	-	-
Remarks Government engineering support increase in FY16 due to engineering efforts required to support increase in budget for AIM-120 and Link 16 efforts.															
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			303.573	30.291		25.372		39.878		-		39.878	-	-	-
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy**

**Date:** February 2015

**Appropriation/Budget Activity**

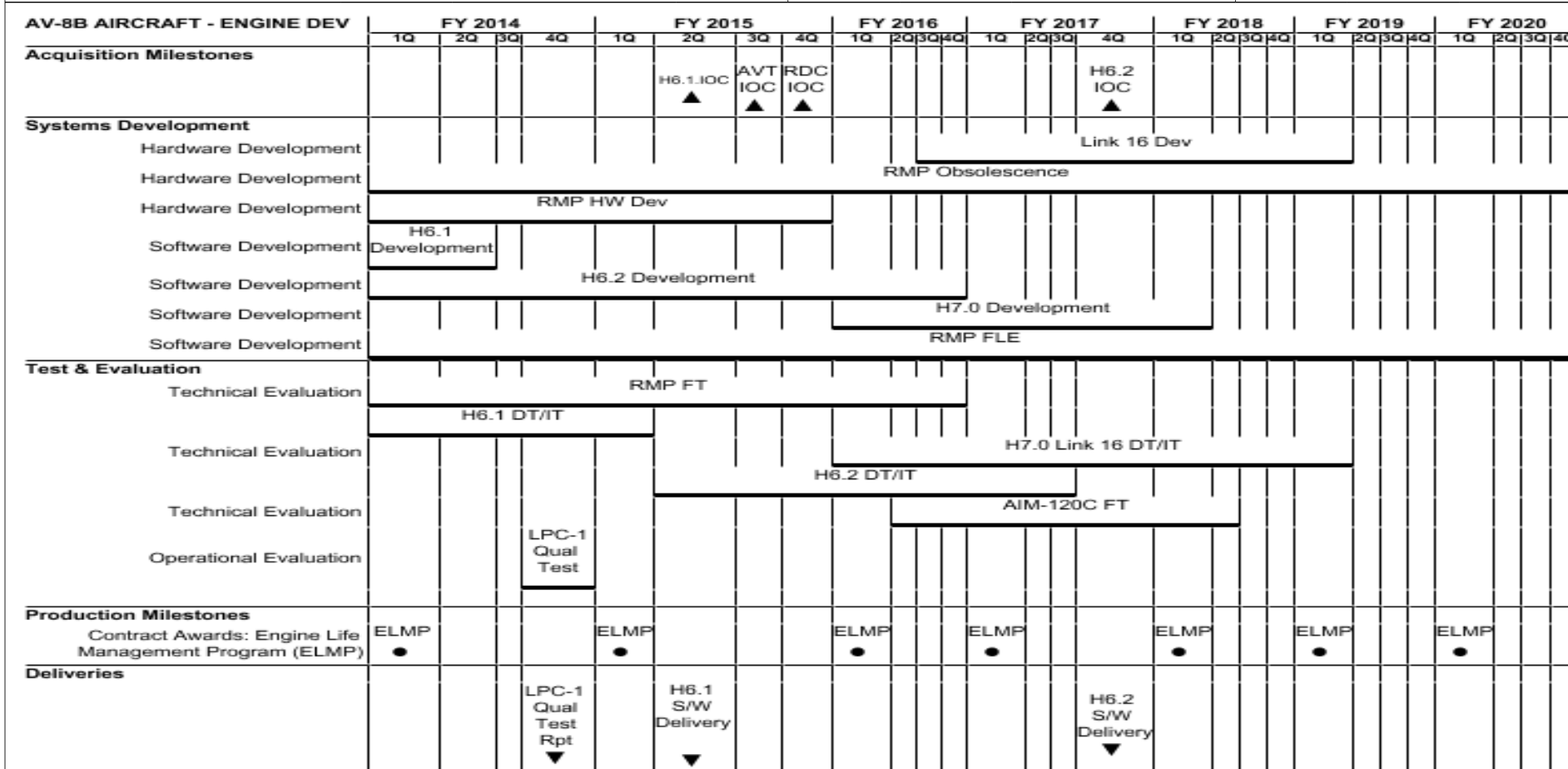
1319 / 5

**R-1 Program Element (Number/Name)**

PE 0604214N / AV-8B Aircraft - Engine Dev

**Project (Number/Name)**

0652 / AV-8B



2016PB - 0604214N - 0652

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Navy			<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604214N / AV-8B Aircraft - Engine Dev	<b>Project (Number/Name)</b> 0652 / AV-8B	

**Schedule Details**

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AV-8B AIRCRAFT - ENGINE DEV</b>				
Acquisition Milestones: RDC IOC	4	2015	4	2015
Acquisition Milestones: H6.1 IOC	2	2015	2	2015
Acquisition Milestones: H6.2 IOC	4	2017	4	2017
Acquisition Milestones: AVT IOC	3	2015	3	2015
Systems Development: Hardware Development: Link 16 Development	3	2016	1	2019
Systems Development: Hardware Development: RMP Obsolescence Development	1	2014	4	2020
Systems Development: Hardware Development: RMP Hardware Dev	1	2014	4	2015
Systems Development: Software Development: H6.1 Development (program started in 2010)	1	2014	2	2014
Systems Development: Software Development: H6.2 Development	1	2014	4	2016
Systems Development: Software Development: H7.0 Development	1	2016	1	2018
Systems Development: Software Development: RMP Fatigue Life Expended Development	1	2014	4	2020
Test & Evaluation: Technical Evaluation: RMP Flight Test	1	2014	4	2016
Test & Evaluation: Technical Evaluation: H6.1 DT/IT	1	2014	1	2015
Test & Evaluation: Technical Evaluation: H7.0 Link 16 DT/IT	1	2016	1	2019
Test & Evaluation: Technical Evaluation: H6.2 DT/IT	2	2015	3	2017
Test & Evaluation: Technical Evaluation: AIM-120C Flight Test	2	2016	2	2018
Test & Evaluation: Operational Evaluation: LPC-1 Qual Test	4	2014	4	2014
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY14	1	2014	1	2014
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY15	1	2015	1	2015

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Navy **Date:** February 2015

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604214N / AV-8B Aircraft - Engine Dev	<b>Project (Number/Name)</b> 0652 / AV-8B
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY16	1	2016	1	2016
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY17	1	2017	1	2017
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY18	1	2018	1	2018
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY19	1	2019	1	2019
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY20	1	2020	1	2020
Deliveries: LPC-1 Qual Test Reports	4	2014	4	2014
Deliveries: H6.1 S/W Delivery	2	2015	2	2015
Deliveries: H6.2 S/W Delivery	4	2017	4	2017