Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy											Date: May 2021	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604214M *I AV-8B Aircraft - Engine Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
Total Program Element	524.857	27.057	16.749	10.146	-	10.146	-	-	-	-	-	-
0652: *AV-8B*	524.857	27.057	16.749	10.146	-	10.146	-	-	-	-	-	-

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 and software Operational Flight Programs (OFPs) to include JMPS integration, avionics and communications systems, navigation equipment, weapons carriage and countermeasures, studies and analyses of future capability expansion and unique flight testing, and the Obsolescence Replacement (OR)/Readiness Management Plan (RMP) including structural, hydraulic, electrical, environmental, and mechanical systems. OR/RMP represents all engineering activities for development and design to support aircraft safety flight clearances, concept explorations, responses to evolving threats, 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: H6.2 and follow-on block upgrades, to include a H7.0 block upgrade that will be required to implement full Link 16 capability, provide weapon improvements and integrate AIM-9X and Joint Standoff Weapon (JSOW). An H6.2 update included the Common Avionics Program, provided AV-8B a self-contained Global Positioning System navigation capability that is required to access preferred airspaces, including a Litening OFP V3, and initial Link 16 Precise Participant Location and Identification capability, which provided interoperability, digital combat identification and increased situational awareness on the battlefield. Link 16 is a Top 10 item in the Operational Advisory and Systems Safety Groups. The H7.0 OFP will fully implement the Harrier Link 16 integration, which will provide information sharing capabilities, integration of an increased number of Link 16 J-series messages and the ability to act on shared target track information. 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 and ability to respond to evolving and emergent threats through end of service 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, as well as compliance with crypto modernization requirements and ability to use GPS-modernized weapons, are required to support current and future mission threats. 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 transition. H7.0 will also include the integration and test of weapons and sensors such as, but not limited to, AIM-9X, JSOW and Litening OFP V4, and will integrate required Display Computer processing improvements to enable H7.0 functionality. Integration of these weapons, to include continued use of current weapons as they are upgraded to modernized GPS capability, is vital to the Harrier's continued combat relevance to the Marine Expeditionary Unit and Global Response Force Combatant Commanders particularly as obsolete AIM-9M inventory dwindles.

Additionally, software integration and stores expansion testing will be required for systems to include a Helmet Mounted Cueing System (HMCS), Unique Weapons, survivability and Countermeasures, Second Generation Anti-jam Tactical UHF Radio for NATO (SATURN) communication waveform and associated radio and communication systems upgrades, Advanced Precision Kill Weapons System (APKWS), AIM-9X, ALE-43, survivability upgrades, standoff weapons such as JSOW, Joint Air-to-Ground Missile (JAGM) and AIM-120 unique platform flight test which will be required to utilize updated AIM-120C variants on the AV-8B as well as test of emergent tactical requirements, and test of crypto modernization compliance. AV-8B funding also supports peculiar flight test requirements to include weapons

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy	Date: May 2021
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604214M *I AV-8B Aircraft - Engine Dev*

integration/carriage and avionics, software/firmware upgrades, and avionics hardware component redesign activity. Studies and analyses will be conducted on systems such as survivability systems, HMCS, SATURN Communications and associated radio and communication systems upgrades, and Beyond Line of Sight (BLOS) to assess feasibility of integrating on the AV-8B. The ELMP is a comprehensive plan to increase and maintain safety of flight and operational readiness of the AV-8B F402-RR-408 Engine and accessories. The program will accomplish this mission by conducting Engineering Project Description investigations to develop engineering solutions that address emergent safety, obsolescence, foreign object debris detection and prevention, fatigue life and maintenance issues. 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 and materials obsolescence analyses and mitigation development, explorations for aging equipment, reliability improvement analyses and design developments.

B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	27.441	20.054	17.872	-	17.872
Current President's Budget	27.057	16.749	10.146	-	10.146
Total Adjustments	-0.384	-3.305	-7.726	-	-7.726
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.305			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.384	0.000			
• Program Adjustments	0.000	0.000	-7.593	-	-7.593
• Rate/Misc Adjustments	0.000	0.000	-0.133	-	-0.133

Change Summary Explanation

The FY2022 funding request was reduced for the following: $2.802 million to account for the availability of prior year execution balances; $4.791M is due to USMC comprehensive assessment of Force Design focusing on modernization of the fleet and balance between legacy sustainment and TACAIR transition. The funding of all programs was assessed and reallocated to best support the Commandant's Planning Guidance for the future USMC force; and $0.133M for miscellaneous rate adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy											Date: May 2021	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604214M / *AV-8B Aircraft - Engine Dev*				Project (Number/Name) 0652 / *AV-8B*			
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
0652: *AV-8B*	524.857	27.057	16.749	10.146	-	10.146	-	-	-	-	-	-
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: Engine Life Management Program (ELMP), Operational Flight Programs (OFPs) 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 (GTS), as well as other critical engine components. The Program Office will accomplish this mission through the Component Improvement Program (CIP), which entails Engineering Project Description investigations to derive safety and reliability improvements to the engine and engine components. H7.0 OFP will integrate full Harrier Link 16 capability, provide software updates, integrate AIM-9X, a Litening Common OFP update, provide Advanced Precision Kill Weapons System (APKWS) integration improvements, Joint Standoff Weapon (JSOW) integration, and common avionics ADS-B (out), Mode 5, and Mode S Identification Friend or Foe capabilities as well as integrate required Radar Display Computer processing improvements to enable H7.0 functionality. Other efforts include compliance with crypto modernization requirements, testing compatibility with GPS-modernized weapons, peculiar integration and flight test requirements such as AIM-120C flight test, as AIM-120A/B will become obsolete, unique weapons, sensors, and countermeasures integration and stores expansion to include APKWS, Helmet Mounted Cueing System (HMCS), Beyond-Line-of-Sight (BLOS) communications, SATURN Communication Waveform and any associated radio/communication systems upgrades, AIM-9X, ALE-43, standoff weapons such as JSOW, and unique flight test, study and component redesign efforts of other avionics, sensors, or weapons systems , or emergent tactical requirements, as they arise. 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, design and test to support aircraft safety, flight clearance and concept exploration for resolution of emergent safety, service life, escape systems, compatibility, obsolescence, and readiness issues as well as response to fleet urgent operational requirements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**
Title: Development of RMP Engineering Change Proposals	4.239	1.852	1.898	0.000	1.898
Articles:	-	-	-	-	-
Description: Develop obsolescence solutions to improve safety, structural integrity, and systems reliability of the AV-8B aircraft.					
FY 2021 Plans: Extension of AV-8B End of Service date to 2028 requires continued research and innovation studies for airframe and subsystem Engineering Change Proposal (ECP) development to improve safety and reliability. The program will continue to address known, predicted, and emergent obsolescence equipment issues, continuing efforts from prior years. Continue fatigue life tracking analyses and algorithm update development. Continue Fuselage Fatigue Life Assessment to assure continued safe operation of the aircraft through the end of service date.					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604214M / *AV-8B Aircraft - Engine Dev*	**Project (Number/Name)** 0652 / *AV-8B*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Systems engineering will support ongoing and emergent analysis and design/ development/test efforts required to identify ECP requirements to correct systems safety, structural integrity, compatibility, and readiness issues including efforts required to respond to evolving and emergent threats, mission systems, communications systems, navigation equipment, weapons carriage and countermeasures, structural, hydraulic, electrical, environmental, and mechanical systems. ***FY 2022 Base Plans:*** Extension of AV-8B End of Service date to 2028 requires continued research and innovation studies for airframe and subsystem Engineering Change Proposal (ECP) development to improve safety and reliability. The program will continue to address known, predicted, and emergent obsolescence equipment issues, continuing efforts from prior years. Continue fatigue life tracking analyses and algorithm update development. Continue Fuselage Fatigue Life Assessment to assure continued safe operation of the aircraft through the end of service date. Systems engineering will support ongoing and emergent analysis and design/ development/test efforts required to identify ECP requirements to correct systems safety, structural integrity, compatibility, and readiness issues including efforts required to respond to evolving and emergent threats, mission systems, communications systems, navigation equipment, weapons carriage and countermeasures, structural, hydraulic, electrical, environmental, and mechanical systems. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increase from FY21 to FY22 reflects minor pricing adjustments.					
Title: Operational Flight Program (OFP) and Avionics Weapons Systems Development and Integration	18.901	12.312	6.062	0.000	6.062
Articles:	-	-	-	-	-
Description: Develop, integrate, and test aircraft OFP updates, mission planning updates, Litening Pod software updates/capability expansions, support aircraft avionics development efforts, integrate and test unique weapons systems, sensors, and countermeasures such as AIM-120C, AIM-9X, HMCS, APKWS, BLOS Communications, Crypto Modernization activities, SATURN communication waveform capabilities and associated radio/ communication systems upgrades, avionics component obsolescence redesign efforts, survivability upgrades, ALE-43, standoff weapons such as JSOW and other weapons/avionics and sensor systems, avionics component redesign efforts and emergent tactical requirements as they arise, perform stores expansion testing, crypto modernization compatibility testing/integration, GPS-modernization compatibility testing/integration and conduct					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604214M / *AV-8B Aircraft - Engine Dev*	**Project (Number/Name)** 0652 / *AV-8B*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Digital Interoperability (to include Link 16) development, integration, and test efforts. Evaluate future capability expansions via studies and analyses. ***FY 2021 Plans:*** Funds provided for completion of H7.0 OFP/Link 16/AIM-9X software integration and integrated flight test efforts leading toward release of the H7.0 OFP. Funds also provided for future capability expansion studies and analysis efforts, future OFP requirement development (HX), efforts required to respond to evolving and emerging threats, peculiar flight test requirements to include various required weapons/sensors/countermeasures/crypto modernization/ GPS modernization compatibility testing/stores expansion integration and testing such as AIM-9X, ALE-43, JSOW, SATURN and other weapons/avionics systems as they arise. ***FY 2022 Base Plans:*** Funds will provide for completion and release of H7.0 OFP/Link 16/ AIM-9X integration and flight test efforts. Funds will also provide for efforts on the follow-on OFP software upgrade (HX), future capability studies and analysis efforts, efforts required to respond to evolving and emerging threats, peculiar flight test requirements to include various required weapons/sensors/countermeasures/crypto modernization/GPS modernization compatibility testing/stores expansion integration and testing such weapons/stores updates, ALE-43, SATURN, associated radio and communication system upgrades and other weapons/avionics systems as they arise. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease from FY21 to FY22 reflects completion of final testing of H7.0 OFP functionality and fielding in 4th quarter FY22.					
Title: F402-RR-408 Engine Safety and Reliability Enhancements	3.917	2.585	2.186	0.000	2.186
Articles:	-	-	-	-	-
Description: Improve Safety and Reliability of the F402-RR-408 Engine and accessories for the AV-8B Harrier. ***FY 2021 Plans:*** The engineering CIP conducted engineering investigations to develop ECPs for improvements and design solutions to correct deficiencies resulting from safety, obsolescence and structural fatigue for the engine and engine accessories, to maintain readiness and to meet mission requirements. Conduct research and innovation studies for FOD mitigation and other operational environment changes to improve engine safety and reliability. ***FY 2022 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604214M / *AV-8B Aircraft - Engine Dev*	**Project (Number/Name)** 0652 / *AV-8B*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
The engineering CIP will conduct engineering investigations to develop ECPs for improvements and design solutions to correct deficiencies resulting from safety, obsolescence and structural fatigue for the engine and engine accessories, to maintain readiness and to meet mission requirements. Conduct research and innovation studies for FOD mitigation and other operational environment changes to improve engine safety and reliability. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease from FY21 to FY22 reflects a decreased requirement for engineering investigations and development of engineering change proposals as the AV-8B program focus transitions from modernization to sustainment.					
Accomplishments/Planned Programs Subtotals	27.057	16.749	10.146	0.000	10.146

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• APN/0514: *AV-8 Series*	35.559	32.684	17.882	-	17.882	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

The Obsolescence Replacement (OR)/RMP ensures the maximum reliability and readiness levels for the AV-8B Type/Model/Series by maintaining post production engineering and logistic support with the Original Equipment Manufacturers (OEMs). RMP tracks readiness degraders, identifies and addresses obsolescence for non-avionics systems, and identifies and addresses emerging in-service material developments related to ease of maintenance, safety, airframe life management and improved performance. The multi-disciplined team of program management, engineering, logistics, and financial personnel develop Engineering Change Proposals (ECPs), Rapid Action Minor Engineering Changes, Interim Rapid Action Changes to publications, trainer and support equipment modifications necessary to maintain aircraft reliability and safety. The RMP additionally supports the constant improvement and analysis of fleet Fatigue Life Expended data to maximize aircraft structural life and to support the NAVAIR annual Structural Appraisal of Fatigue Effects report required by OPNAV, and structural fatigue life assessments to assure continued safe operation of the aircraft through the end of service date. Funding for the ELMP 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 of the F402-RR-408 and accessories. 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 OFPs. H7.0 OFP will provide the AV-8B integration of additional required Link 16 J-series messages, integration of AIM-9X and JSOW weapons, and APKWS integration updates. H7.0 will also be accomplished in conjunction with the Common Avionics Program and will integrate ADS-B (out), Mode 5, and Mode S capabilities. Peculiar flight test efforts to include weapons, avionics, survivability, and sensor integration such as AIM-120, AIM-9X, APKWS, ALE-43, ALR-67, HMCS, standoff

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604214M / *AV-8B Aircraft - Engine Dev*	**Project (Number/Name)** 0652 / *AV-8B*

weapons such as JSOW, crypto modernization compliance integration/testing, GPS modernization compatibility, SATURN communication waveform and associated radio/communication systems upgrades, and other avionics/weapons and sensor systems and emergent tactical requirements and avionics component redesign actions as they arise. Studies and analyses will be accomplished to assess future capability expansion feasibility and integration concepts to include weapons expansion, BLOS communications, SATURN communication waveform and associated radio/communication systems upgrades, survivability upgrades, and other potential avionics, weapons, or software capabilities as they arise.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604214M / *AV-8B Aircraft - Engine Dev*	**Project (Number/Name)** 0652 / *AV-8B*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - ELMP	C/CPFF	Rolls-Royce PLC : Bristol, GB	39.352	1.188	Dec 2019	0.355	Dec 2020	0.350	Dec 2021	-		0.350	-	-	-
Primary Hardware Development - ELMP	C/CPFF	ONTIC (Goodrich) PS : Pitstone, GB	7.649	0.000		0.000		0.000		-		0.000	-	-	-
Primary Hardware Development - OFP	WR	NAWCWD : China Lake, CA	88.252	8.659	Nov 2019	6.692	Nov 2020	0.557	Nov 2021	-		0.557	-	-	-
Primary Hardware Development - OFP	C/CPFF	Boeing : St. Louis, MO	15.161	0.000		0.000		0.000		-		0.000	-	-	-
Primary Hardware Development - OFP	C/CPFF	Raytheon : Waltham, MA	4.805	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering - RMP	C/CPFF	Boeing : St. Louis, MO	38.264	0.350	Jan 2020	0.494	Jan 2021	0.563	Jan 2022	-		0.563	-	-	-
Systems Engineering - RMP	WR	NAWCWD : China Lake, CA	3.914	0.184	Nov 2019	0.091	Nov 2020	0.102	Nov 2021	-		0.102	-	-	-
Systems Engineering - RMP	WR	NAWCAD : Patuxent River, MD	10.335	2.380	Nov 2019	1.071	Nov 2020	1.053	Nov 2021	-		1.053	-	-	-
Systems Engineering - OFP	WR	NAWCWD : China Lake, CA	0.887	0.065	Nov 2019	0.000		0.184	Nov 2021	-		0.184	-	-	-
Systems Engineering - OFP	C/CPFF	Raytheon : TBD	1.200	0.100	Aug 2020	0.000		0.100	Jun 2022	-		0.100	-	-	-
Prior year cost no longer funded in the FYDP	Various	Various : Various	44.016	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	253.835	12.926		8.703		2.909		-		2.909	-	-	N/A

Remarks

Line 3: Decrease from FY21 to FY22 due to completion of final testing of H7.0 OFP functionality and fielding in 4th quarter FY22.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - RMP	C/CPFF	Boeing : St. Louis, MO	3.016	0.000		0.000		0.000		-		0.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604214M / *AV-8B Aircraft - Engine Dev*	Project (Number/Name) 0652 / *AV-8B*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis - RMP	C/CPFF	Boeing : St. Louis, MO	7.862	0.995	Jul 2020	0.000		0.250	Jul 2022	-		0.250	-	-	-
Studies and Analysis - OFP	WR	NAWCWD : China Lake, CA	0.960	0.000		0.000		0.000		-		0.000	-	-	-
Studies and Analysis - OFP	C/CPFF	Boeing : St. Louis, MO	5.182	0.000		0.000		0.000		-		0.000	-	-	-
Studies & Analysis - ELMP	C/CPFF	Moog, Inc. : Salt Lake City, UT	6.557	0.000		0.000		0.000		-		0.000	-	-	-
Studies & Analysis - ELMP	C/CPFF	Trex : San Diego, CA	0.000	0.716	Jan 2020	0.000		0.000		-		0.000	-	-	-
Prior year cost no longer funded in the FYDP	Various	Various : Various	55.452	0.000		0.000		0.000		-		0.000	-	-	-
Studies & Analysis - OFP	C/CPFF	Viasat : Carlsbad, CA	0.000	0.050	Nov 2020	0.385	Nov 2021	0.000		-		0.000	-	-	-
		Subtotal	79.029	1.761		0.385		0.250		-		0.250	-	-	N/A

Remarks

Line 19: Decrease from FY21 to FY22 due to completion of STT cryptographic modifications.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation - OFP	WR	NAWCWD : China Lake, CA	31.283	7.575	Jan 2020	2.588	Jan 2021	3.108	Jan 2022	-		3.108	-	-	-
Operational Test & Evaluation - OFP	WR	COMOPTEVFOR : Norfolk, VA	25.270	0.322	Jan 2020	0.278	Jan 2021	0.361	Jan 2022	-		0.361	-	-	-
Developmental Test & Evaluation - RMP/OFP	Various	Various : Various	0.605	0.000		0.157	Jan 2021	0.111	Jan 2022	-		0.111	-	-	-
Prior year cost no longer funded in the FYDP	Various	Various : Various	68.682	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	125.840	7.897		3.023		3.580		-		3.580	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604214M / *AV-8B Aircraft - Engine Dev*	Project (Number/Name) 0652 / *AV-8B*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Tec SRVC (Non-FFRDC) - RMP	C/CPFF	Trident : Huntsville, AL	1.426	0.000		0.000		0.131	Mar 2022	-		0.131	-	-	-
Engineering & Tec SRVC (Non-FFRDC) - ELMP	C/CPFF	LTM, Inc : Havelock, NC	6.422	0.734	Jun 2020	1.392	Jun 2021	0.922	Jun 2022	-		0.922	-	-	-
Engineering & Tec SRVC (Non-FFRDC)	C/CPFF	Various : Various	10.991	0.250	Dec 2019	0.000		0.291	Dec 2021	-		0.291	-	-	-
MGT & PROF SUPPT SRVC (NON-FFRDC)	C/CPFF	Various : Various	9.309	0.089	Jun 2020	0.232	Jun 2021	0.000		-		0.000	-	-	-
Government Engineering Support - ELMP	WR	NAWCAD : Patuxent River, MD	11.618	1.229	Nov 2019	0.838	Nov 2020	0.889	Nov 2021	-		0.889	-	-	-
Government Engineering Support - OFP	WR	NAWCAD : Patuxent River, MD	5.829	1.971	Nov 2019	1.980	Nov 2020	1.029	Nov 2021	-		1.029	-	-	-
Travel	WR	Various : Various	2.009	0.200	Oct 2019	0.196	Oct 2020	0.145	Oct 2021	-		0.145	-	-	-
Prior year cost no longer funded in the FYDP	Various	Various : Various	18.549	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	66.153	4.473		4.638		3.407		-		3.407	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	524.857	27.057		16.749		10.146		-		10.146	-	-	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604214M / *AV-8B Aircraft - Engine Dev*	**Project (Number/Name)** 0652 / *AV-8B*

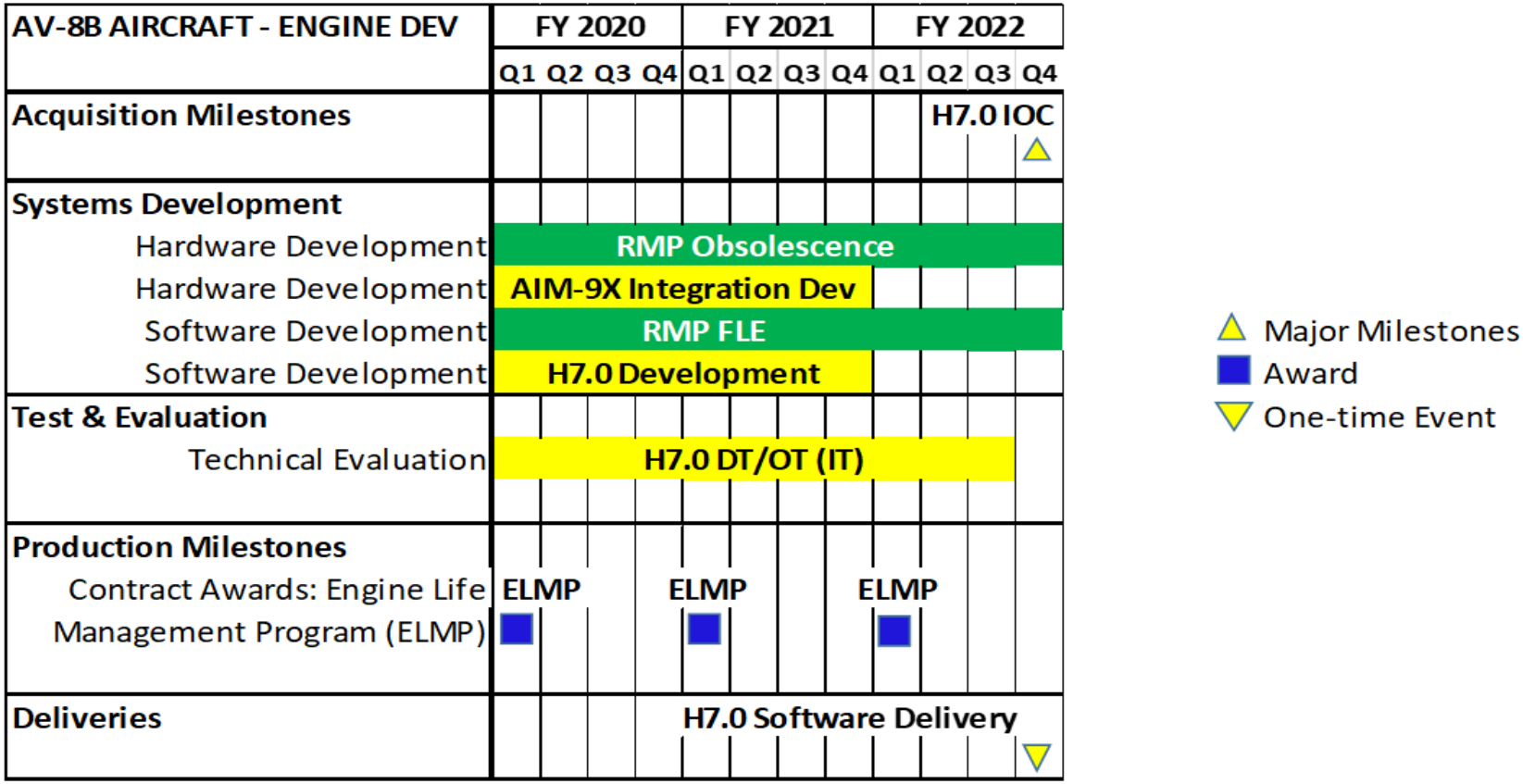

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604214M / *AV-8B Aircraft - Engine Dev*	**Project (Number/Name)** 0652 / *AV-8B*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AV-8B AIRCRAFT - ENGINE DEV				
Acquisition Milestones: H7.0 IOC	4	2022	4	2022
Systems Development: Hardware Development: AIM-9X Integration Development	1	2020	4	2021
Systems Development: Hardware Development: RMP Obsolescence Development	1	2020	4	2022
Systems Development: Software Development: H7.0 Development	1	2020	4	2021
Systems Development: Software Development: RMP Fatigue Life Expended Development	1	2020	4	2022
Test & Evaluation: Technical Evaluation: H7.0 Link 16 DT/OT (IT)	1	2020	3	2022
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY20	1	2020	1	2020
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY21	1	2021	1	2021
Production Milestones: Contract Awards: Engine Life Management Program (ELMP): ELMP Contract Award FY22	1	2022	1	2022
Deliveries: H7.0 S/W Delivery	4	2022	4	2022