Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy												Date: March 2019
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604234N *I Advanced Hawkeye*							
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	4,942.431	283.497	210.565	232.752	-	232.752	258.869	355.168	421.001	397.643	0.000	7,101.926
3051: *E-2D Adv Hawkeye*	4,924.552	273.840	198.565	232.752	-	232.752	258.869	355.168	421.001	397.643	0.000	7,062.390
9999: *Congressional Adds*	17.879	9.657	12.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	39.536
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 364												

A. Mission Description and Budget Item Justification

The E-2D Advanced Hawkeye (AHE) program develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components including Cooperative Engagement Capability Pre-Planned Product Improvement and Dual Transmit Satellite Communications that improve the E-2 weapon system to maintain open ocean mission capability while providing the United States Navy with an effective littoral surveillance, battle management, Naval Integrated Fire Control (NIFC) and Theater Air and Missile Defense (TAMD) capability. Key radar technologies are Space-Time Adaptive Processing, Electronically Scanning Array, solid state transmitter, high dynamic range digital receivers and Identification Friend or Foe (IFF)/radar aperture integration. The resultant detection system provides a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas, while simultaneously contributing to the emerging TAMD mission requirements. Mode 5 is an upgrade to the existing IFF System providing the warfighter positive, secure and reliable identification of friendly aircraft, surface and sub-surface platforms. Mode 5 replaces the National Security Administration de-certified Mode 4 IFF capability, which is no longer effective or suitable for modern military operations. Mode 5 will support the Joint Initial Operational Capability (IOC) as defined by the Joint Requirements Oversight Council.

The Navy declared IOC for the E-2D in October 2014 with the first operational deployment in FY15. The System Development and Demonstration contract completed in FY15 as the program transitions into the production, deployment, and sustainment phase. Throughout the development of the E-2D, the threat has continued to evolve increasing in both capability and capacity. The E-2D Research, Development, Test and Evaluation budget after IOC reflects the Navy's further investment into the E-2D to ensure that carrier based command and control continues to pace the FY2020 and beyond threat in support of Navy and Joint operations around the world.

The program will be aligning the capability development in areas where there are interwoven technologies that leverage each other to provide the most efficient and cost effective means of delivering these capabilities to the warfighters. The program will deliver these capabilities to the Fleet users on approximately a 24 month release cycle as part of combined Delta System/Software Configuration (DSSC) builds. The baseline IOC configuration is named DSSC build 1 (DSSC-1). The DSSC build schedule is outlined along with the capabilities that are planned to comprise each DSSC build. If a capability is delayed or accelerated it will move between DSSC builds which will be reflected in updates to this budget.

DSSC-2 Fleet released in August FY16. DSSC-2 incorporates several technologies developed under the System Development and Demonstration phase which include Dual Transmit Satellite Communications and an IFF technology refresh in preparation for Mode 5 and Mode S.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy	Date: March 2019
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DSSC-2.1 incorporates IFF Mode 5 capability early release to operational squadrons ahead of formal DSSC-3 release.

DSSC-3 is planned for operational test and Fleet release in FY19. DSSC-3 is comprised of the following capabilities:
E-2D Accelerated Mid-Term Interoperability Improvement Program, NIFC Increment 2 and Automatic Identification System, Embedded National Tactical Receiver.
DSSC-3AR is planned for operational test and Fleet release in FY19. DSSC-3AR is comprised of all capabilities listed in DSSC-3 plus Aerial Refueling.

DSSC-3.1 is planned for Developmental Test (DT)Assist and Fleet release in FY20. DSSC-3.1 is comprised of the following capabilities: Crypto Modernization/ Frequency Remapping (CM/FR), Hybrid-Beyond Line of Sight(H-BLOS)SIPRChat, and E-2D Navigation Warfare.

DSSC-4 is planned for operational test in FY21 and Fleet release in FY22. DSSC-4 provides critical capabilities needed to pace the 2020 threat and enabling components of NIFC increment 3. DSSC-4 is comprised of the following capabilities: E-2D Multifunctional Information Distribution System/Joint Tactical Radio System, Tactical Targeting Networking Technology, Secret Internet Protocol Router Chat, Data Fusion (phase 1), Sensor Netting, and DSSC-4 Counter Electronic Attack.

DSSC-5 is planned for operational test and Fleet release in FY24. DSSC-5 provides the capabilities necessary for E-2D to meet NIFC increment 3 requirements and is comprised of the following: Sensor Netting, Stores Performance Assessment Requested Quality, Data Fusion (Phase 2), E-2D AN/ALQ-217 Electronic Support Measures and DSSC-5 Counter Electronic Attack.

DSSC-6 is planned for operational test and Fleet release in FY26. DSSC-6 provides the capabilities necessary for E-2D to meet NIFC increment 3 requirements and is comprised of the following: Theater Combat ID, Survivability and DSSC-6 Counter Electronic Attack.

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	292.535	223.565	225.063	-	225.063
Current President's Budget	283.497	210.565	232.752	-	232.752
Total Adjustments	-9.038	-13.000	7.689	-	7.689
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-25.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	12.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.778	0.000			
• SBIR/STTR Transfer	-7.760	0.000			
• Program Adjustments	0.000	0.000	9.838	-	9.838
• Rate/Misc Adjustments	0.000	0.000	-2.149	-	-2.149

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy					Date: March 2019
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604234N *I Advanced Hawkeye*			
• Congressional Directed Reductions	-7.500	-	-	-	-
Adjustments					
• Congressional Add Adjustments	10.000	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2018	FY 2019
Project: 9999: *Congressional Adds*		
Congressional Add: *Radar Enhancements*	9.657	0.000
Congressional Add: *E-2D Hawkeye Advanced Radar*	0.000	12.000
Congressional Add Subtotals for Project: 9999	9.657	12.000
Congressional Add Totals for all Projects	9.657	12.000

Change Summary Explanation

Technical: N/A

Schedule:
1. Updated Advanced Hawkeye schedule for the Test and Evaluation to incorporate DSSC-3.1 for the DSSC builds.
2. Updated Counter Electronic Attack (CEA) schedule to reflect how capability will be delivered based on the DSSC build schedules and required technical maturity level.
3. Updated Data Fusion schedules to incorporate development of required technical maturity level.
4. Updated Sensor Netting to show capability will be included in DSSC-5.
5. Revised ALQ217 Electronic Support Measures Upgrade schedule to reflect June 2018 contract award. Incorporated survivability requirements.
6. Added Theater Combat Identification (CID)schedule in DSSC-6.
7. Deleted Fighter to Fighter schedule since capability intertwined with Data Fusion. Data Fusion schedule includes Fighter to Fighter (consolidated Data Fusion & Fighter to Fighter into one capability).

Decrease in FY 2020 funding request was reduced by $20.0 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
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COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3051: *E-2D Adv Hawkeye*	4,924.552	273.840	198.565	232.752	-	232.752	258.869	355.168	421.001	397.643	0.000	7,062.390
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 364

A. Mission Description and Budget Item Justification

The E-2D Advanced Hawkeye (AHE) program develops, demonstrates, tests, and procures the replacement of the AN/APS-145 radar system and other aircraft system components including Cooperative Engagement Capability Pre-Planned Product Improvement and Dual Transmit Satellite Communications that improve the E-2 weapon system to maintain open ocean mission capability while providing the United States Navy with an effective littoral surveillance, battle management, Naval Integrated Fire Control (NIFC) and Theater Air and Missile Defense (TAMD) capability. Key radar technologies are Space-Time Adaptive Processing, Electronically Scanning Array, solid state transmitter, high dynamic range digital receivers and Identification Friend or Foe (IFF)/radar aperture integration. The resultant detection system provides a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas, while simultaneously contributing to the emerging TAMD mission requirements. Mode 5 is an upgrade to the existing IFF System providing the warfighter positive, secure and reliable identification of friendly aircraft, surface and sub-surface platforms. Mode 5 replaces the National Security Administration de-certified Mode 4 IFF capability, which is no longer effective or suitable for modern military operations. Mode 5 will support the Joint Initial Operational (IOC) as defined by the Joint Requirements Oversight Council.

The Navy declared IOC for the E-2D in October 2014 with the first operational deployment in FY15. The System Development and Demonstration contract completed in FY15 as the program transitions into the production, deployment, and sustainment phase. Throughout the development of the E-2D, the threat has continued to evolve increasing in both capability and capacity. The E-2D Research, Development, Test and Evaluation budget after IOC reflects the Navy's further investment into the E-2D to ensure that carrier based command and control continues to pace the 2020 and beyond threat in support of Navy and Joint operations around the world.

The program will be aligning the capability development in areas where there are interwoven technologies that leverage each other to provide the most efficient and cost effective means of delivering these capabilities to the warfighters. The program will deliver these capabilities to the Fleet users on an approximately 24 month release cycle as part of combined Delta System/Software Configuration (DSSC) builds. The baseline IOC configuration is named DSSC build 1 (DSSC-1). The DSSC build schedule is outlined below along with the capabilities that are planned to comprise each DSSC build. If a capability is delayed or accelerated it will move between DSSC builds which will be reflected in updates to this budget.

DSSC-2 Fleet released in August FY16. DSSC-2 incorporates several technologies developed under the System Development and Demonstration phase which include Dual Transmit Satellite Communications and an IFF technology refresh in preparation for Mode 5 and Mode S.

DSSC-2.1 incorporates IFF Mode 5 capability early release to operational squadrons ahead of formal DSSC-3 release.

DSSC-3 is planned for operational test and Fleet release in FY19. DSSC-3 is comprised of the following capabilities:

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

1. The E-2D Accelerated Mid-Term Interoperability Improvement Program (AMIIP) will address the most severe Cooperative Engagement Capability and data link related interoperability issues. This capability will significantly improve the quality of the tactical surveillance picture across all participants, reduce the possibility of track mis-identification and mitigate Blue on Blue engagements. AMIIP provides stable sensor fusion foundation to support sensor/weapon coordination requirements.

2. NIFC enhancements will incorporate weapon system software improvements to implement capabilities and performance improvements needed to meet NIFC increment 2 requirements. These capabilities come from software development in both the E-2D Classified and NIFC Enhancement and Testing lines.

DSSC-3AR is planned for operational test and Fleet release in FY19. DSSC-3AR is comprised of all capabilities listed in DSSC-3 plus Aerial Refueling (AR).

1. An AR capability will allow the E-2D AHE to receive fuel from various organic and non-organic tanker aircraft. It provides Expanded Battle Space Surveillance and Targeting through significantly enhanced persistence and increased flexibility (range & endurance). AR will better enable the E-2D AHE to fully support current Carrier Strike Group /Joint 24/7 Theater Operations by providing more versatile stationing and/or forward basing options. Previous domestic E-2 concept demonstration effort successfully established the feasibility of tanking behind the F/A-18E/F and KC-130 aircraft under E-2 Squadrons, PE 0204152N.

DSSC-3.1 is planned for Developmental Test (DT)Assist and Fleet release in FY20. DSSC-3.1 is comprised of the following capabilities:

1. Crypto Modernization/Frequency Remapping: The E-2D Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/JTRS) with concurrent Multi-netting will be integrated into the E-2D. This effort includes replacing the Multifunctional Information Distribution System-Low Volume Terminal (MIDS LVT) radio with MIDS/JTRS that has incorporated Link-16 concurrent Multi-netting (CMN-4) and replacing the JTIDS High Power Amplifier Group with a Link-16 High Power Amplifier which will address Crypto Modernization and Frequency Remapping.

2. Hybrid-Beyond Line of Sight(H-BLOS)SIPRChat will provide a Secret Internet Protocol Router Network (SIPRNet)Chat capability via INMARSAT.

3. E-2D Navigation Warfare (NAVWAR) prevents loss of Global Positioning System (GPS) by using a Controlled Reception Pattern Antenna (CRPA) and antenna electronics (AE) unit which will function to provide GPS access in an Electronic Attack (EA) environment. NAVWAR significantly reduces the likelihood of loss of critical GPS Position, Navigation and Timing functionality that is fundamental to E-2D battlespace awareness and its contributions to multiple link networks.

DSSC-4 is planned for operational test in FY21 and Fleet release in FY22. DSSC-4 provides critical capabilities needed to pace the 2020 threat and enabling components of NIFC increment 3. DSSC-4 is comprised of the following capabilities:

1. The E-2D Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/JTRS)Tactical Targeting Networking Technology (TTNT) integrates Advanced Tactical Data Link functionality into the E-2D. This effort includes replacing the MIDS LVT radio with MIDS/JTRS that has incorporated Link-16 Concurrent Multi-Netting and TTNT. MIDS/JTRS TTNT is a key enabler for E-2D sensor netting capability in support of the NIFC mission.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

2. The fully integrated E-2D Secret Internet Protocol Router Chat capability will support integration of current collaboration tools including tactical "chat" (text) communications, real-time tasking, and Air Tasking Order distribution. Recent real world operations have demonstrated a migration of Command and Control communications from voice to Internet protocol based networks.

3. E-2D Data Fusion Phase 1 provides a fusion engine to blend all on-board sensor derived track data (e.g. Electronic Surveillance) with already blended radar, Identify Friend or Foe and Cooperative Engagement Capability track files, enhancing situational awareness and tactical decision making. Successful E-2D NIFC engagements depend on a clear/unambiguous tactical picture and the shortest possible decision pipeline.

4. The E-2D DSSC-4 Counter Electronic Attack (CEA) capability will allow the E-2D radar system to maintain performance in an advanced hostile intentional electromagnetic interference environment. The E-2D CEA program will ensure continuous E-2D effectiveness is maintained in an Electronic Attack environment supporting the NIFC capability and overall Navy and Joint Integrated Air and Missile Defense strategy.

5. E-2D Sensor Netting provides fusion of data from off-board sources via a high bandwidth network that will allow E-2D to support the second spiral of performance improvement for NIFC capability. Additional details are classified.

DSSC-5 is planned for operational test in FY23 and Fleet release in FY24. DSSC-5 provides the capabilities necessary for E-2D to meet NIFC increment 3 requirements and is comprised of the following capabilities:

1. E-2D Sensor Netting provides fusion of data from off-board sources via a high bandwidth network that will allow E-2D to support the second spiral of performance improvement for NIFC capability. Additional details are classified.

2. E-2D Stores Performance Assessment Requested Quality (SPARQ) establishes real-time requirements for E-2D sensor contribution to system of system NIFC solutions. SPARQ expands and optimizes operational employment envelopes, improving Air Wing ability to take advantage of System of System capabilities of NIFC, reducing kill chain timelines.

3. E-2D Data Fusion Phase 2 provides a fusion engine to blend all off-board tactical data (e.g. Satellite Receiver System data, Fighter to Fighter backlink data) with already fused on-board tracks from the E-2D Data Fusion Phase 1 effort. Completing the Data Fusion of all track sources available to E-2D greatly enhances situational awareness and tactical decision making. Integrating Link-16 Network Participation Group 20 messages improves interoperability between E-2D and participating US Navy fighters, including 5th generation aircraft. This enhances the combat effectiveness of the E-2D, increases situational awareness and shortens kill-chain timeliness (including NIFC).

4. E-2D AN/ALQ-217 Electronic Support Measures (ESM) Combat Identification (CID) upgrades integrates digital receiver and processing technology, enables E-2 multi-ship geo-location and Time Difference Of Arrival with other sensors across L-16 and Tactical Targeting Networking Technology (TTNT), and provides a precision internal clock source to enable netted detection of advanced threat radar systems. Connectivity to Electronic Warfare (EW) netted sensors will provide multiple nodes, real time, enhanced CID capabilities.

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5. The E-2D DSSC-5 Counter Electronic Attack (CEA) capability will allow the E-2D radar system to maintain performance in an advanced hostile intentional electromagnetic interference environment. The E-2D CEA program will ensure continuous E-2D effectiveness is maintained in an Electronic Attack environment supporting the NIFC capability and overall Navy and Joint Integrated Air and Missile Defense strategy.

DSSC-6 is planned for operational test and Fleet Release in FY26. DSSC-6 provides the capabilities necessary for E-2D to meet NIFC increment 3 requirements and is comprised of the following capabilities:

1. E-2D Theater Combat Identification (CID) including Mission Computer Display Rearchitecture enables the E-2D to distribute Combat Identification (CID) data to the Carrier Strike Group (CSG). E-2D will receive National Technical Means (NTM) and tactical CID data at all security levels and filter/distribute at the highest possible security levels to the tactical edge. Using the Open Mission Systems (OMS) design, the new mission computer architecture will provide multi-level security and cyber hardening provisions to support current and planned capabilities. The OMS design will allow faster integration of these capabilities required to pace the evolving threat.

2. The E-2D DSSC 6 Counter Electronic Attack (CEA) capability will allow the E-2D radar system to maintain performance in an advanced hostile intentional electromagnetic interference environment. The E-2D CEA program will ensure continuous E-2D effectiveness is maintained in an Electronic Attack environment supporting the NIFC capability and overall Navy and Joint Integrated Air and Missile Defense strategy.

3. E-2D Survivability develops additional capabilities for the ALQ-217 ESM. It enables Integrated Fire Control (IFC) in a Highly Contested (HC) environment. This capability will ensure the E-2D can perform its intended mission at locations required to support Naval and Joint force operations.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Full Scale Fatigue Test	17.502	9.879	10.318	0.000	10.318
Articles:	-	-	-	-	-
Description: Full Scale Fatigue Test efforts for the E-2D Advanced Hawkeye Program. The USN requires that a fatigue test be conducted on the E-2D aircraft to determine the design service life of the airframe. Durability testing is being performed on a test article that is representative of production aircraft. The objective of the 20,000 equivalent flight hours fatigue test is to identify fatigue critical locations, substantiate the 10,000 flight hours service life for the E-2D airframe fuselage and horizontal stabilizer, and demonstrate that the E-2D aircraft structure satisfies the program service life requirement.					
FY 2019 Plans: Funds provided for continued support of Full Scale Fatigue Tests. The test program will continue towards the final goal of 20,000 test hours. Inspections and analysis will be performed at 500 effective flight hour intervals.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Effort to configure and instrument replacement Outer Wing Panels will continue at the 10,000 hour interval. Repairs of the test article will be conducted as required. ***FY 2020 Base Plans:*** Funds provided for continued support of Full Scale Fatigue Tests. The test program will continue towards the final goal of 20,000 test hours. Inspections and analysis will be performed at 500 effective flight hour intervals. Repairs of the test article will be conducted as required. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** N/A					
Title: Delta System/Software Configuration (DSSC) Integration, Test and Cyber Program Protection ***Articles:*** ***Description:*** Funds integration, engineering risk reduction efforts, developmental and operational test of E-2D. Develops cyber hardening, reaction and restoration defensive capabilities to increase E-2D resiliency in a cyber-warfare contested environment. Perform scans and Security Technical Implementation Guidance (STIGS) to identify vulnerabilities, develop mitigations, and comply with Risk Management Framework (RFM) to achieve and maintain a CyberSAFE certification and an Authority to Operate. ***FY 2019 Plans:*** Funding provided for DSSC 3 Operational Test and fleet release. ***FY 2020 Base Plans:*** Funding provided to continue engineering risk reduction efforts, conduct DSSC-4 software merge and Aerial Refueling envelope expansion test. Incorporate E-2D Cyber warfare program protection needed to pace the 2020 threat for critical capabilities in support of DSSC builds. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increase from FY19 to FY20 due to incorporation of cyber program protection for E-2D.	15.266 -	15.098 -	34.354 -	0.000 -	34.354 -
Title: Aerial Refueling ***Articles:***	57.961 -	18.910 -	0.000 -	0.000 -	0.000 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: Funds the system development and testing to support the incorporation of Aerial Refueling (AR) capability into the E-2D AHE aircraft. Emphasis during system development is on system redesign, air vehicle design, human systems integration and design, including interior/lighting modifications and seat replacement. Flight testing is required to evaluate fuel systems changes, aerial refueling capability, field of view, thermal and aerodynamic loads, kinematic performance, and handling qualities. Planned for DSSC-3AR ***FY 2019 Plans:*** Funding provided for operational test readiness review. ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** No Funding requested in FY20.					
Title: E-2D Counter Electronic Attack (CEA)	22.214	20.401	24.200	0.000	24.200
Articles:	-	-	-	-	-
Description: Funds the mission system development and testing of the capability to counter advanced radar electronic attack threats. The E&MD effort will focus on integration of capabilities in the radar and mission computer display systems that include system integration, and laboratory and flight test validation. Planned for DSSC-4, 5 and 6. ***FY 2019 Plans:*** Program will begin requirements development for DSSC-5 Counter Electronic Attack, Conduct Functional Readiness Review and Execute Developmental Test for DSSC-4 Counter Electronic Attack. ***FY 2020 Base Plans:*** Funds provided for continuation of DSSC-5 Counter Electronic Attack requirements development. Conduct delta functional readiness review, System Readiness Review and begin Hardware/Software development for DSSC-5 Counter Electronic Attack. ***FY 2020 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increase from FY19 to FY20 due to beginning of hardware/software development.					
Title: Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/JTRS)Tactical Targeting Networking Technology (TTNT) ***Articles:*** ***Description:*** MIDS/JTRS TTNT provides Advanced Tactical Data Link functionality into the E-2D. This effort includes replacing the Multifunctional Information Distribution System - Low Volume Terminal (MIDS LVT) radio with MIDS/JTRS that has incorporated Link-16 concurrent Multi-netting (CMN-4) and TTNT. MIDS/JTRS TTNT is a key enabler for E-2D sensor netting capability in support of the Naval Integrated Fire Control-Counter Air mission. Planned for DSSC-4. ***FY 2019 Plans:*** Funds provided to conduct TTNT integration test readiness review. ***FY 2020 Base Plans:*** Funds provided for test readiness review and functional readiness review. Begin developmental test. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decreases from FY19 to FY20 due to current program plan.	11.539 -	9.781 -	3.061 -	0.000 -	3.061 -
Title: SIPR Chat ***Articles:*** ***Description:*** The E-2D Secret Internet Protocol Router (SIPR) Chat capability will support integration of current collaboration tools including tactical "chat" (text) communications, real-time tasking, and Air Tasking Order distribution. Recent real world operations have demonstrated a migration of Command and Control communications from voice to Internet protocol based networks. A Hybrid Beyond Line of Sight solution that utilizes the same hardware configuration as DSSC-4 has been identified that provides the SIPRChat capability to the fleet beginning in FY20 (DSSC-3.1). The fully integrated SIPRChat solution will field in DSSC-4 beginning FY22. ***FY 2019 Plans:***	5.279 -	2.782 -	2.837 -	0.000 -	2.837 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Funds provided for continued System Development & Design. Conduct Test Readiness Review to support and enable SIPRChat capability. ***FY 2020 Base Plans:*** Funds provided to conduct Functional Readiness Review and Begin development test. Conduct developmental test assist for DSSC-3.1 H-BLOS SIPRchat solution. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** N/A					
Title: Naval Integrated Fire Control (NIFC) ***Articles:*** ***Description:*** NIFC requires System of Systems level testing. Assesses and addresses Naval weapon systems' Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance gaps. ***FY 2019 Plans:*** Funds provided for continued NIFC flight test. Additionally, continues E-2D participation in NIFC-CA increment developmental and operational systems of systems ground, simulation, and flight testing. Continues fleet training development for NIFC capabilities. ***FY 2020 Base Plans:*** Funds provided for continued NIFC flight test. Additionally, continues E-2D participation in NIFC increment developmental and operational systems of systems ground, simulation, and flight testing. Continues fleet training development for NIFC capabilities. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** N/A	37.756 -	25.973 -	25.601 -	0.000 -	25.601 -
Title: Accelerated Mid-Term Interoperability Improvement Program (AMIIP) ***Articles:*** ***Description:*** Address the most severe data link related interoperability issues. This capability will significantly improve the quality of the tactical surveillance picture, reduce the possibility of leakers, mitigate Blue on Blue	3.627 -	0.000 -	0.000 -	0.000 -	0.000 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
engagements and mid-identification of tracks. Provides stable sensor fusion foundation to support sensor/ weapon coordination requirements. Planned for DSSC-3. ***FY 2019 Plans:*** N/A ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** No Funding requested in FY20.					
Title: Sensor Netting	15.390	17.535	18.703	0.000	18.703
Articles:	-	-	-	-	-
Description: Provides fusion of data from off-board sources via a high bandwidth network that will allow E-2D to support second spiral of performance improvements for Naval Integrated Fire Control Testing (NIFC) capabilities. Additional details are classified. Planned for DSSC-5; however, an Early Operational Capability (EOC) of this weapon system improvement is planned for DSSC-4 (software only capabilities to deliver to the fleet) & the full capabilities will be delivered in DSSC-5. ***FY 2019 Plans:*** Funds provided for completion of system requirements development for Sensor Netting DSSC 4. Continuation of software development & integration of the mission computer and associated systems to provide the Sensor Netting solution for DSSC-4. Program will conduct Preliminary Design Review and Critical Design Review for Sensor Netting DSSC-4. Start software development and integration for Sensor Netting DSSC-5. Conduct Integrated Baseline Review and Preliminary Design Review for Sensor Netting DSSC-5. ***FY 2020 Base Plans:*** Funds provided for the continuation of software development & integration of the mission computer and associated systems to provide the Sensor Netting DSSC-5 solution. Program will conduct SIL Testing, Test Readiness Review (TRR) and Functional Readiness Review of the DSSC-4 solution, including completion of					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Developmental Testing (DT) prior to integration into the DSSC-4 final build. In addition, program will conduct Critical Design Review of the DSSC-5 solution. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increases from FY19 to FY20 due to current program plan.					
Title: Data Fusion	26.922	22.563	27.508	0.000	27.508
Articles:	-	-	-	-	-
Description: E-2D Data Fusion and Fighter to Fighter Backlink are complementary capabilities to be integrated together, therefore, Fighter to Fighter has been incorporated as part of Data Fusion Phase 2. E-2D Data Fusion Phase 1 provides a fusion engine to blend all on-board sensor derived track data (e.g. Electronic Surveillance) with already blended radar, Identify Friend or Foe and Cooperative Engagement Capability track files, enhancing situational awareness and tactical decision making. Successful E-2D NIFC engagements depend on a clear/unambiguous tactical picture and the shortest possible decision pipeline. Planned for DSSC-4. E-2D Data Fusion Phase 2 provides a fusion engine to blend all off-board tactical data (e.g. Satellite Receiver System data, Fighter to Fighter backlink data) with already fused on-board tracks from the E-2D Data Fusion Phase 1 effort. Completing the Data Fusion of all track sources available to E-2D greatly enhances situational awareness and tactical decision making. Integrating Link-16 Network Participation Group 20 messages which improves interoperability between E-2D and participating US Navy fighters, including 5th generation aircraft. This enhances the combat effectiveness of the E-2D, increases situational awareness and shortens kill-chain timeliness (including NIFC). Planned for DSSC-5 ***FY 2019 Plans:*** Funds provided for Phase 1 to begin systems engineering and integration. Program will conduct preliminary design review and critical design review for Phase 1. Program will begin requirements development for Phase 2 and conduct a system requirements review and preliminary design review for Phase 2. ***FY 2020 Base Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Funds provided to continue Phase 1 systems engineering and integration. Program will conduct test readiness review, functional readiness review and begin SIL test for Phase 1. Program will begin systems engineering and integration for Phase 2 and conduct critical design review for Phase 2. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increases from FY19 to FY20 due to current program plan.					
Title: Navigation Warfare (NAVWAR)	9.095	8.571	8.169	0.000	8.169
Articles:	-	-	-	-	-
Description: E-2D Navigation Warfare (NAVWAR) prevents loss of Global Positioning System (GPS) by using a Controlled Reception Pattern Antenna (CRPA) and Antenna Electronics (AE) unit which will function to provide GPS access in an Electronic Attack (EA) environment. NAVWAR significantly reduces the likelihood of loss of critical GPS Position, Navigation and Timing functionality that is fundamental to E-2D battlespace awareness and its contributions to multiple link networks. Without NAVWAR capability, the E-2D AHE will be unable to provides its services in GPS contested airspace, putting Navy units at unacceptable risk and hindering Joint operational flexibility. NAVWAR capability will allow the E-2D AHE to operate in areas where signal disruption and jamming would prohibit unprotected GPS reception. With this new capability, the E-2D AHE will be able to provide continuous operations in a degraded GPS environment for mission areas that depend on GPS for precise position, navigation, and timing. Planned for DSSC-3.1. ***FY 2019 Plans:*** Funds provided to continue SIL test. Conduct Test Readiness Review, Functional Readiness Review and begin Developmental Test. ***FY 2020 Base Plans:*** Funds provided to continued developmental test. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decreases from FY19 to FY20 due to current program plan.					
Title: Stores Performance Assessment Requested Quality (SPARQ)	8.676	8.003	7.806	0.000	7.806
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: E-2D Stores Performance Assessment Requested Quality (SPARQ) establishes real-time requirements for E-2D sensor contribution to system of systems Naval Integrated Fire Control (NIFC) solutions. SPARQ expands and optimizes operational employment envelopes, improving Air Wing ability to take advantage of system of systems capabilities of NIFC, reduces operational workload and latency of execution. Planned for DSSC-5. ***FY 2019 Plans:*** Funds provided for completion of system requirements development. Continuation of software development of the mission computer and associated systems to provide the SPARQ solution. Program will conduct Integrated Baseline Review and Preliminary Design Review. ***FY 2020 Base Plans:*** Funds provided for continuation of software development of the mission computer and associated systems to provide the SPARQ solution. Program will conduct Critical Design Review. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** N/A					
Title: Theater Combat Identification (CID) ***Articles:***	0.000 -	0.000 -	17.608 -	0.000 -	17.608 -
Description: E-2D Theater Combat Identification (CID) including Mission Computer Display Rearchitecture enables the E-2D to distribute Combat Identification (CID) data to the Carrier Strike Group (CSG). E-2D will receive National Technical Means (NTM) and tactical CID data at all security levels and filter/distribute at the highest possible security levels to the tactical edge. Using the Open Mission Systems (OMS) design, the new mission computer architecture will provide multi-level security and cyber hardening provisions to support current and planned capabilities. The OMS design will allow faster integration of these capabilities required to pace the evolving threat. ***FY 2019 Plans:*** N/A ***FY 2020 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
New Start. Funds provided to conduct Integrated Baseline Review. Begin requirements development. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY20 is first year of funding for E-2D Theater Combat Identification (CID).					
Title: ALQ-217 Electronic Support Measures Upgrade & Survivability	26.713	30.434	43.053	0.000	43.053
Articles:	-	-	-	-	-
Description: ALQ-217 digital upgrade greatly enhances Combat Identification (CID), battle space awareness, and effectiveness of blue forces. Expands capabilities of ALQ-217 hardware and software to enable defensive countermeasures to enable Carrier Strike Group (CSG) Air Defense in Highly Contested (HC) environments. Planned for DSSC-5. E-2D Survivability develops additional capabilities for the ALQ-217 ESM. This capability is required to ensure the E-2D can perform its intended mission at locations required to support Naval and Joint Force operations. Planned for DSSC-6. ***FY 2019 Plans:*** Funds provided for the continuation of ALQ217 ESM requirements development. Will begin hardware and software development & integration, conduct Preliminary Design Review and Critical Design Review. ***FY 2020 Base Plans:*** Funds provided for the continuation of ALQ217 ESM hardware and software development & integration. Will conduct Functional Readiness Review and perform Chamber ground tests. Funds provided for Survivability requirements development and will conduct Systems Requirements Review. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increases from FY19 to FY20 due to revised program plan to incorporate survivability.					
Title: Crypto Modernization/Frequency Remapping	15.900	8.635	9.534	0.000	9.534
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: The E-2D Multifunctional Information Distribution System/Joint Tactical Radio System (MIDS/ JTRS) with concurrent Multi-netting will be integrated into the E-2D. This effort includes replacing the Multifunctional Information Distribution System-Low Volume Terminal (MIDS LVT) radio with MIDS/JTRS that has incorporated Link-16 concurrent Multi-netting (CMN-4) and replacing the JTIDS High Power Amplifier Group with a Link-16 High Power Amplifier which will address Crypto Modernization and Frequency Remapping. Planned for DSSC-3.1. ***FY 2019 Plans:*** Funds are provided to continue hardware & software development & integration and conduct Test Readiness Review and Functional Readiness Review. Begin developmental test. ***FY 2020 Base Plans:*** Funds are provided for completion of developmental test assist. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increases from FY19 to FY20 due to current program plan.					
Accomplishments/Planned Programs Subtotals	273.840	198.565	232.752	0.000	232.752

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• APN/0195: *E-2D AHE*	987.313	1,174.371	870.612	-	870.612	839.757	1,011.019	1,233.669	195.638	0.000	18,392.796
• APN/0605: *Initial Spares - E-2*	10.350	12.497	6.926	-	6.926	3.632	3.395	3.115	3.110	Continuing	Continuing
• APN/0544: *E-2 Series*	53.713	82.980	117.059	-	117.059	184.307	243.124	240.587	265.830	785.310	3,468.675

Remarks

D. Acquisition Strategy

Milestone C Acquisition Strategy was approved by Milestone Decision Authority, Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) on 29 Dec 2008. Milestone C approval to proceed into Production and Deployment was given 11 June 2009 by USD (AT&L). Certification for entrance into Initial Operational Test & Evaluation was received on 06 Feb 2012. Full Rate Production Acquisition Strategy approved on 20 August 2012. Initial Operational Test & Evaluation concluded 1 October 2012. Successfully held a Defense Acquisition Board for Full Rate Production. Received a successful decision to enter into Full Rate Production on 01 March 2013. Initial Operational Capability achieved on 10 October 2014.

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E. Performance Metrics

Successfully held a Gate 6 review on 23 January 2018.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware-Fatigue	C/CPFF	Northrop Grumman Corporation (NGC) : Melbourne, FL	29.652	16.703	Feb 2018	9.530	Nov 2018	9.302	Nov 2019	-		9.302	53.619	118.806	118.806
Primary Hardware Dev-AMIIP/SIPRChat & TTNT	C/CPIF	Northrop Grumman Corporation (NGC) : Melbourne, FL	99.084	9.898	Jun 2018	4.122	Feb 2019	5.898	Nov 2019	-		5.898	0.000	119.002	119.002
Primary Hardware Dev-TTNT	SS/FFP	Data Link Solutions : Cedar Rapids, IA	20.568	1.619	Dec 2017	0.000		0.000		-		0.000	0.000	22.187	22.187
Primary Hardware Dev - TTNT	SS/CPFF	ViaSat : Carlsbad, CA	5.247	0.000		0.000		0.000		-		0.000	0.000	5.247	5.247
Primary Hardware-Aerial Refueling	SS/CPIF	Northrop Grumman Corporation (NGC) : Melbourne, FL	254.029	28.019	Oct 2017	9.874	Feb 2019	0.000		-		0.000	0.000	291.922	291.922
Primary Hardware Dev-NAVWAR	SS/CPFF	Northrop Grumman Corporation (NGC) : Melbourne, FL	2.380	7.010	Dec 2017	4.144	Dec 2018	4.910	Dec 2019	-		4.910	0.000	18.444	18.444
Primary Hardware Dev - TTNT	SS/CPFF	NorthStar Scientific Corp. : Kapole, HI	8.634	0.000		0.000		0.000		-		0.000	0.000	8.634	8.634
Primary Hardware Dev - CMFR	C/CPFF	Northrop Grumman Corporation : Melbourne, FL	3.200	4.334	Jul 2018	0.000		0.000		-		0.000	0.000	7.534	7.534
Primary Hardware Dev - ESM	C/CPFF	Lockheed Martin : New York, NY	6.043	9.614	Jun 2018	16.650	Dec 2018	18.298	Dec 2019	-		18.298	17.550	68.155	68.155
Primary Hardware Dev - Theater CID	C/CPIF	Navy Syst Mgt Activity : Arlingron, VA	0.000	0.000		0.000		10.338	Dec 2019	-		10.338	243.409	253.747	253.747
Primary Hardware Dev - Cyber	C/CPIF	Northrop Grumman Corporation (NGC) : Melbourne, FL	0.000	0.000		0.000		7.780	Dec 2019	-		7.780	119.960	127.740	127.740
Training Development	SS/FFP	Rockwell Collins : Cedar Rapids, IA	17.624	14.178	Dec 2017	1.903	Dec 2018	1.740	Dec 2019	-		1.740	13.039	48.484	48.484
Primary Software Dev - Thearter CID	C/CPIF	Navy Syst Mgt Activity : Arlington, VA	0.000	0.000		0.000		5.356	Dec 2019	-		5.356	0.000	5.356	5.356

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Dev - Various	Various	Navy Syst Mgt Activity : Arlington, VA	83.394	25.215	Dec 2017	25.847	Dec 2018	26.453	Dec 2019	-		26.453	490.937	651.846	651.846
Primary Software Development - ESM	C/CPFF	Lockheed Martin : New York, NY	2.990	5.000	Dec 2017	9.607	Dec 2018	9.866	Dec 2019	-		9.866	16.737	44.200	44.200
System Engineering	Various	Various : Various	0.913	0.000		1.227	Dec 2018	3.766	Dec 2019	-		3.766	9.069	14.975	14.975
Prior Year Prod Dev costs no longer funded in FYDP	Various	Various : Various	3,603.253	0.000		0.000		0.000		-		0.000	0.000	3,603.253	-
		Subtotal	4,137.011	121.590		82.904		103.707		-		103.707	964.320	5,409.532	N/A

Remarks

Totals may not add due to rounding.
Primary Software Development, Navy Syst Mgt Activity cost category increased due to fact of life changes in contract award.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Navy Syst Mgt Activity : Arlington, VA	23.420	0.200	Dec 2017	0.200	Dec 2018	0.200	Dec 2019	-		0.200	1.204	25.224	25.224
Software Development-SN	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	7.735	12.793	Dec 2017	14.368	Dec 2018	13.023	Dec 2019	-		13.023	27.601	75.520	77.520
Software Development-Data Fusion	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	16.340	22.491	Dec 2017	12.214	Dec 2018	12.340	Dec 2019	-		12.340	32.845	96.230	96.230
Software Development-CEA	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	2.022	1.822	Dec 2017	1.343	Dec 2018	2.552	Dec 2019	-		2.552	0.500	8.239	8.239
Software Development - SPARQ	C/CPFF	Navy Syst Mgt Activity : Arlington, VA	6.017	7.651	Dec 2017	7.163	Dec 2018	6.930	Dec 2019	-		6.930	11.583	39.344	39.344

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Support ($ in Millions)

				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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-SIPRChat	WR	SPAWAR : San Diego	11.333	0.000		0.000		0.000		-		0.000	0.000	11.333	11.333
Software Development-TTNT	SS/CPIF	Northrop Grumman Corporation (NGC) : Melbourne, FL	0.200	1.583	Dec 2017	0.000		0.000		-		0.000	0.000	1.783	1.783
Software Development-NAVWAR	SS/CPIF	Northrop Grumman Corporation (NGC) : Melbourne, FL	2.900	0.550	Dec 2017	0.418	Dec 2018	0.070	Dec 2019	-		0.070	0.320	4.258	4.258
Software Development - ESM	SS/CPIF	Northrop Grumman Corporation : Melbourne, FL	0.000	0.000		1.241	Dec 2018	0.000		-		0.000	0.000	1.241	1.241
Software Development - CMFR	C/CPFF	Northrop Grumman Corporation : Melbourne, FL	1.748	9.416	Jul 2018	4.467	Dec 2018	9.137	Dec 2019	-		9.137	9.137	33.905	33.905
Government Engineering Support	WR	Naval Air Warfare Center Aircraft Division (NAWCAD : Pax River, MD	128.141	17.848	Nov 2017	15.750	Dec 2018	16.067	Dec 2019	-		16.067	70.742	248.548	-
Government Engineering Support	WR	Naval Air Warfare Center Training Systems Division : Orlando, FL	12.545	0.472	Nov 2017	0.400	Nov 2018	0.400	Dec 2019	-		0.400	0.000	13.817	-
Government Engineering Support	Various	Various : Various	17.227	0.496	Nov 2017	0.509	Nov 2018	0.120	Nov 2019	-		0.120	0.120	18.472	-
Integrated Logistics Support	Various	Various : Various	10.772	3.149	Nov 2017	3.035	Nov 2018	2.943	Nov 2019	-		2.943	18.206	38.105	-
Contractor Engineering Support ETS	C/CPFF	Precise : Lexington Park, MD	0.390	1.258	Jan 2018	2.477	Jan 2019	1.481	Jan 2020	-		1.481	9.403	15.009	15.009
Technical Data	Various	Various : Various	1.544	0.000		0.000		0.000		-		0.000	0.000	1.544	-
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	110.150	0.000		0.000		0.000		-		0.000	0.000	110.150	-
		Subtotal	352.484	79.729		63.585		65.263		-		65.263	181.661	742.722	N/A

Remarks

Totals may not add due to rounding.

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental T&E	WR	NAWCAD : Pax River, MD	194.590	47.791	Nov 2017	40.051	Nov 2018	44.050	Nov 2019	-		44.050	351.598	678.080	-
Developmental T&E	Various	Various : Various	36.380	0.100	Oct 2017	0.100	Nov 2018	0.100	Nov 2019	-		0.100	0.000	36.680	-
Developmental T&E - ROR	SS/CPFF	Northrop Grumman Corporation(NGC) : Melbourne, FL	7.272	5.980	Nov 2017	2.500	Nov 2018	3.186	Dec 2019	-		3.186	21.088	40.026	40.026
Developmental T&E ETS	C/CPFF	Various : Various	11.169	1.703	Feb 2018	1.618	Feb 2019	2.227	Feb 2020	-		2.227	14.047	30.764	30.764
Operational T&E	WR	NAWCAD : Pax River, MD	24.773	2.801	Nov 2017	0.000		0.000		-		0.000	1.650	29.224	29.224
Operational T&E	Various	Various : Various	10.481	1.013	Nov 2017	6.347	Nov 2018	12.670	Nov 2019	-		12.670	79.400	109.911	-
Test Assets	Various	Various : Various	6.601	12.783	Nov 2017	1.131	Nov 2018	1.152	Dec 2019	-		1.152	7.257	28.924	-
Prior Year T&E costs no longer funded in FYDP	Various	Various : Various	73.994	0.000		0.000		0.000		-		0.000	0.000	73.994	-
		Subtotal	365.260	72.171		51.747		63.385		-		63.385	475.040	1,027.603	N/A

Remarks

Totals may not add due to rounding.
Developmental Test & Evaluation (T&E), Developmental T&E (Engineering & Technical Services) and Operational T&E - various contractors and award dates throughout the fiscal year. FY20 NAWCAD Pax increased funding due to scheduled Fleet Release for DSSC-3 & DSSC-4 Software merge.
Operational T&E requirement increase from FY19 to FY20 due to scheduled test for NIFC.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	Various : Various	3.089	0.350	Oct 2017	0.329	Oct 2018	0.397	Oct 2019	-		0.397	1.761	5.926	-
Program Mgmt Supt	Various	Vsrious : Various	0.094	0.000		0.000		0.000		-		0.000	0.000	0.094	-

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Mgmt costs no longer funded in FYDP	Various	Various : Various	66.614	0.000		0.000		0.000		-		0.000	0.000	66.614	-
		Subtotal	69.797	0.350		0.329		0.397		-		0.397	1.761	72.634	N/A

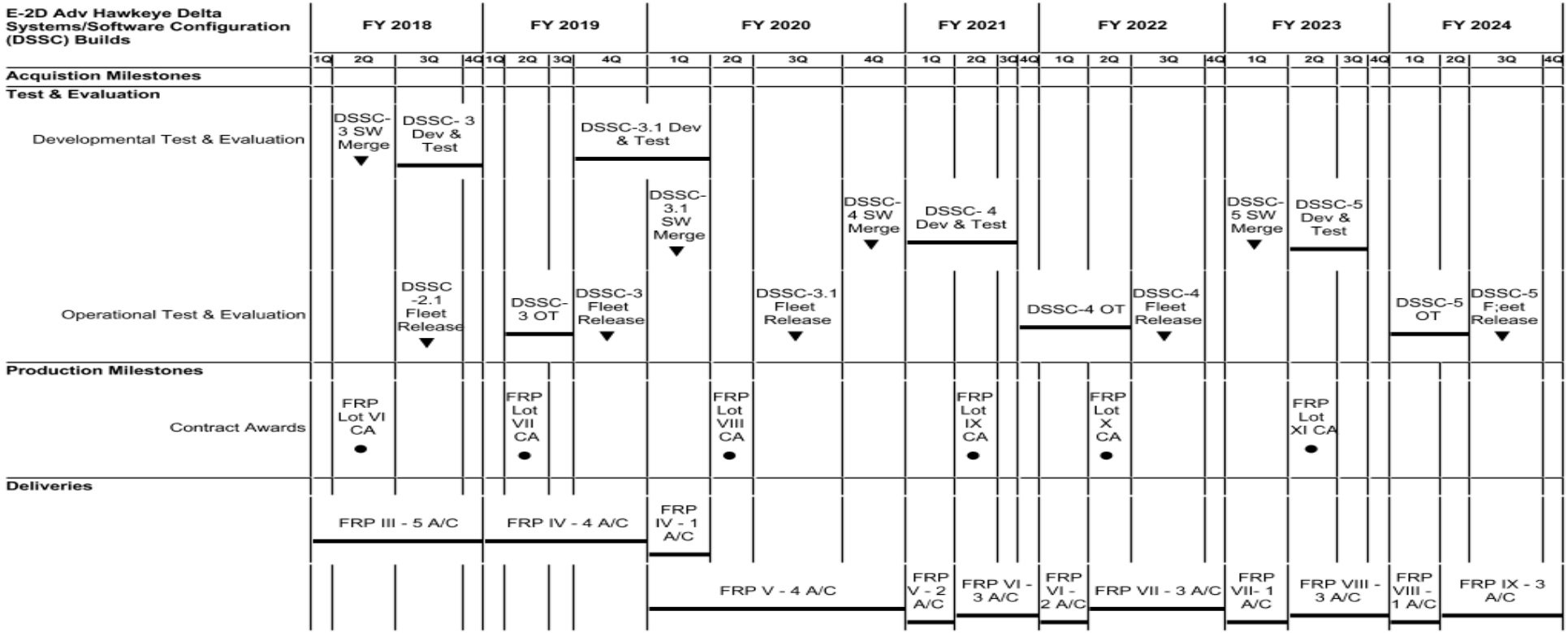
Remarks

Totals may not add due to rounding.
Contractor Engineering Support, Government Engineering Support, Program Support and Travel - various contractors and/or award dates throughout fiscal year.

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4,924.552	273.840		198.565		232.752		-		232.752	1,622.782	7,252.491	N/A

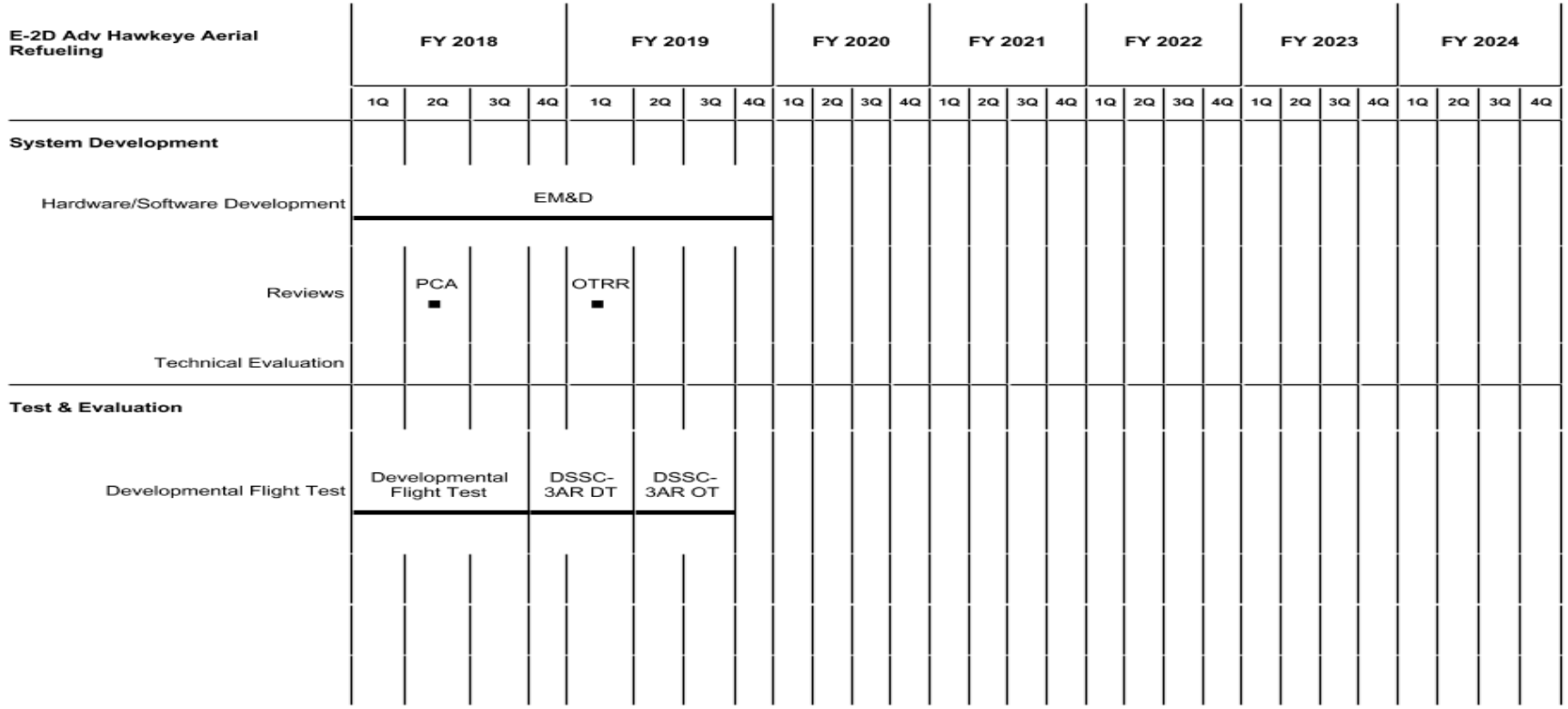
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



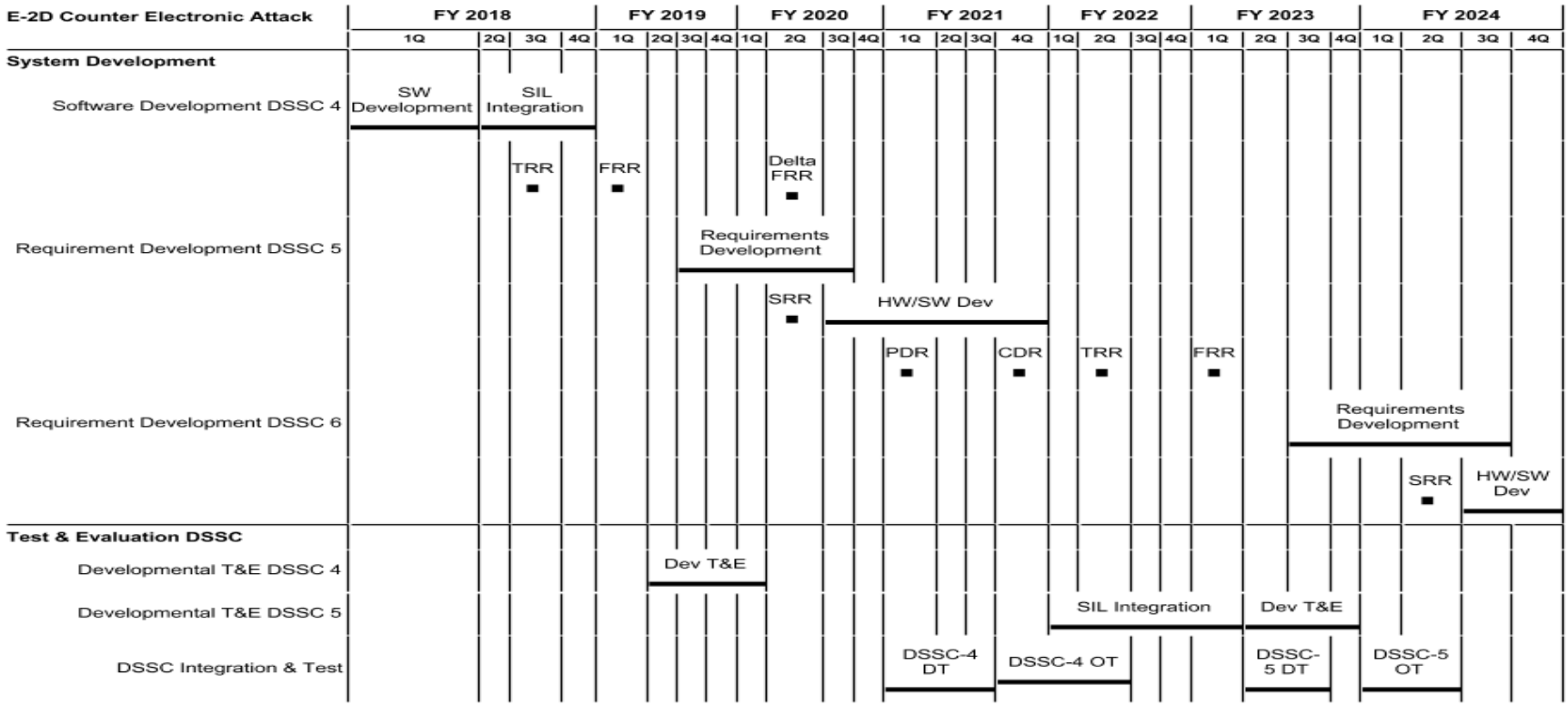
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



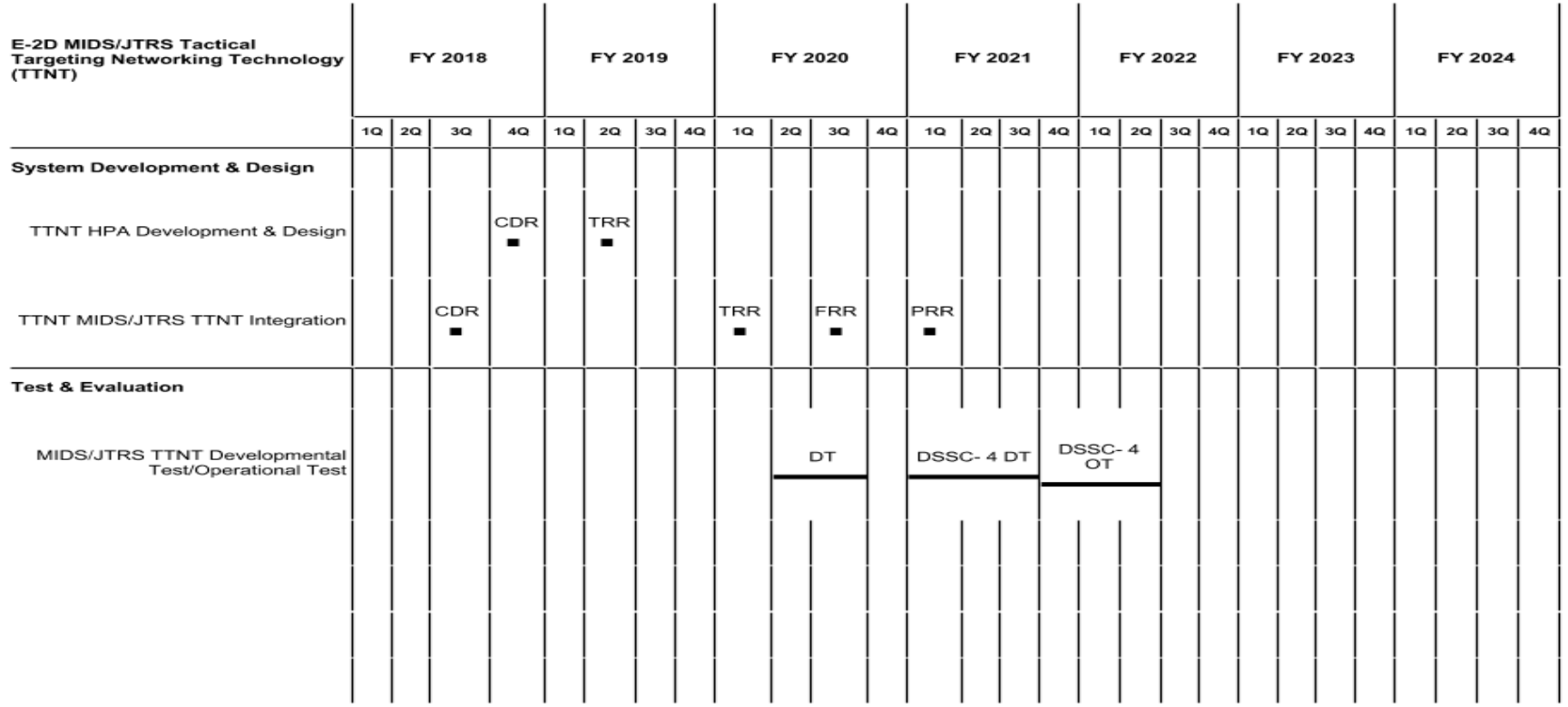
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



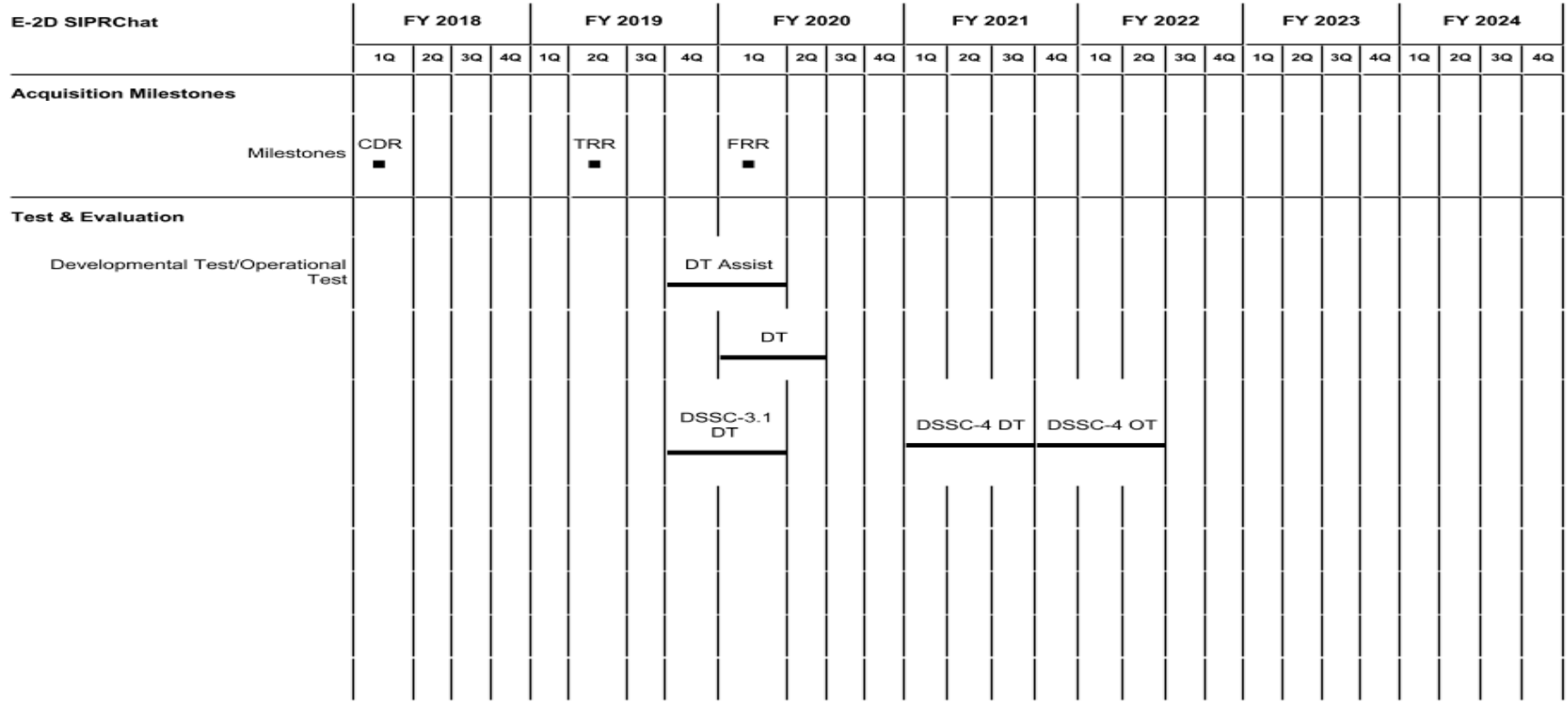
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



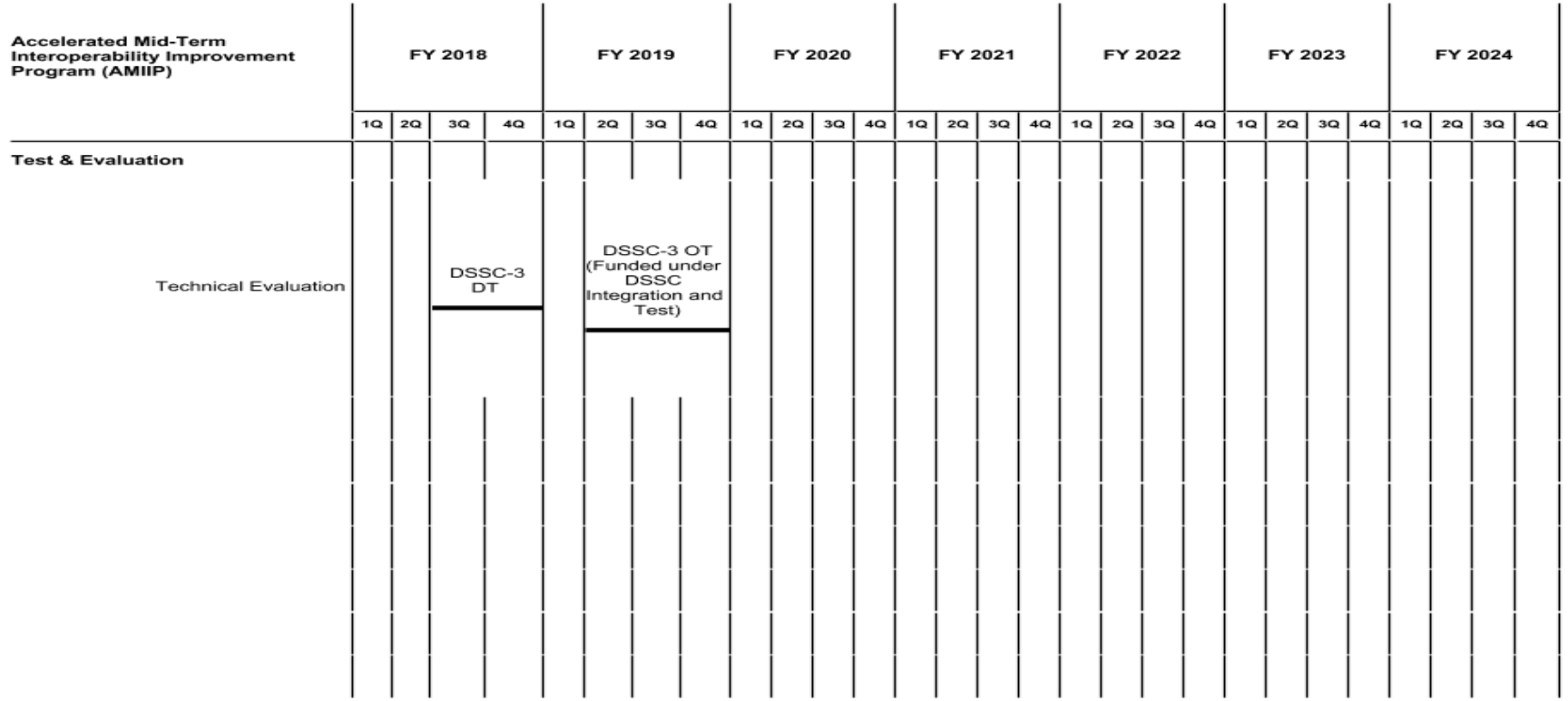
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



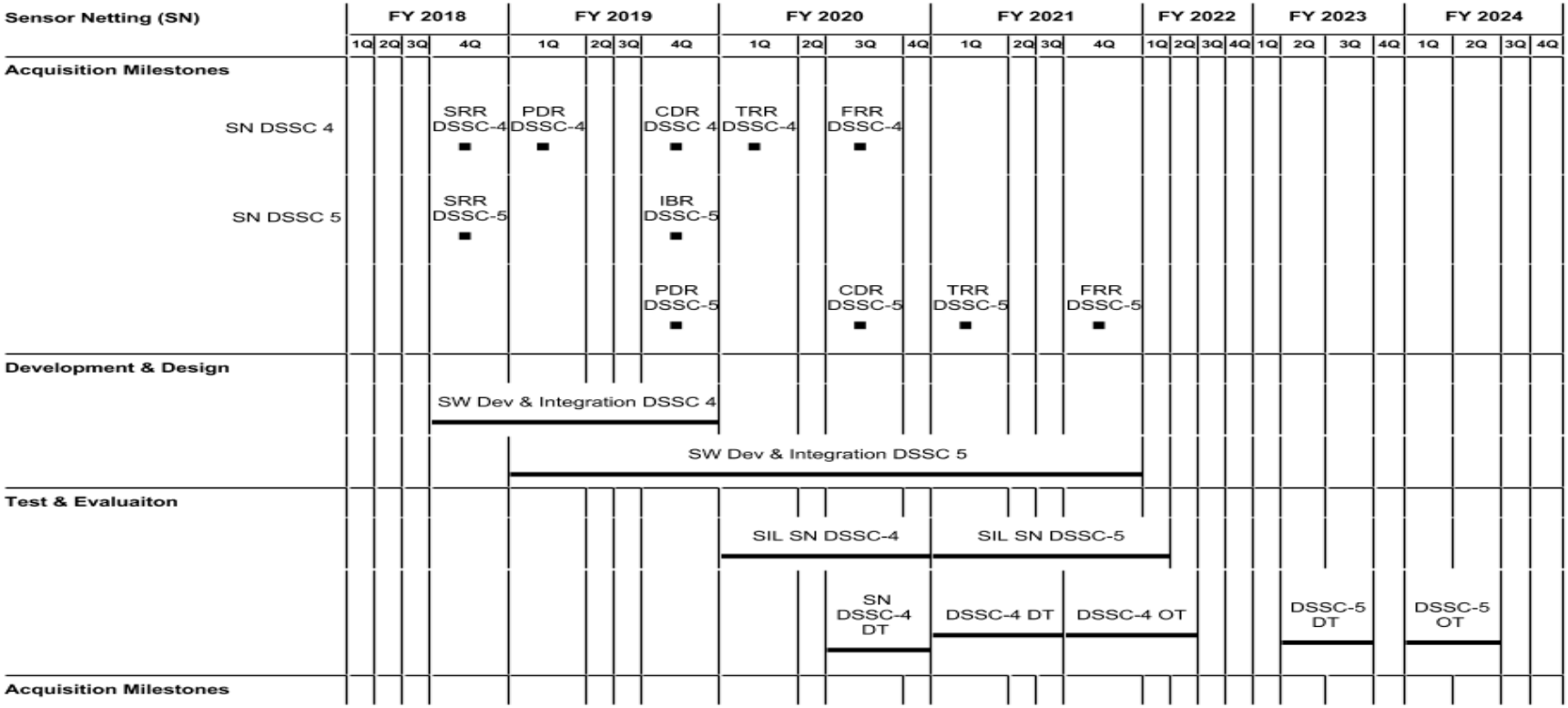
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



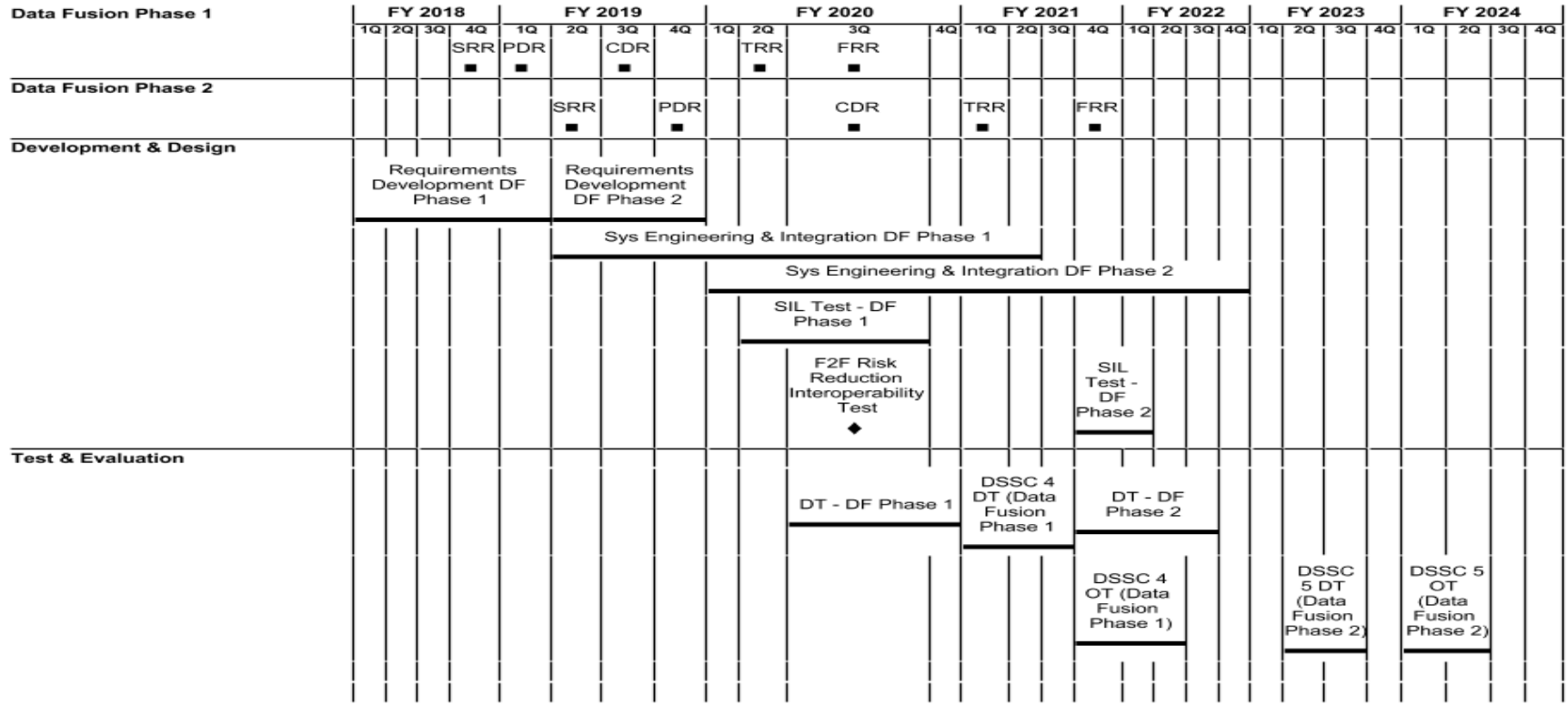
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



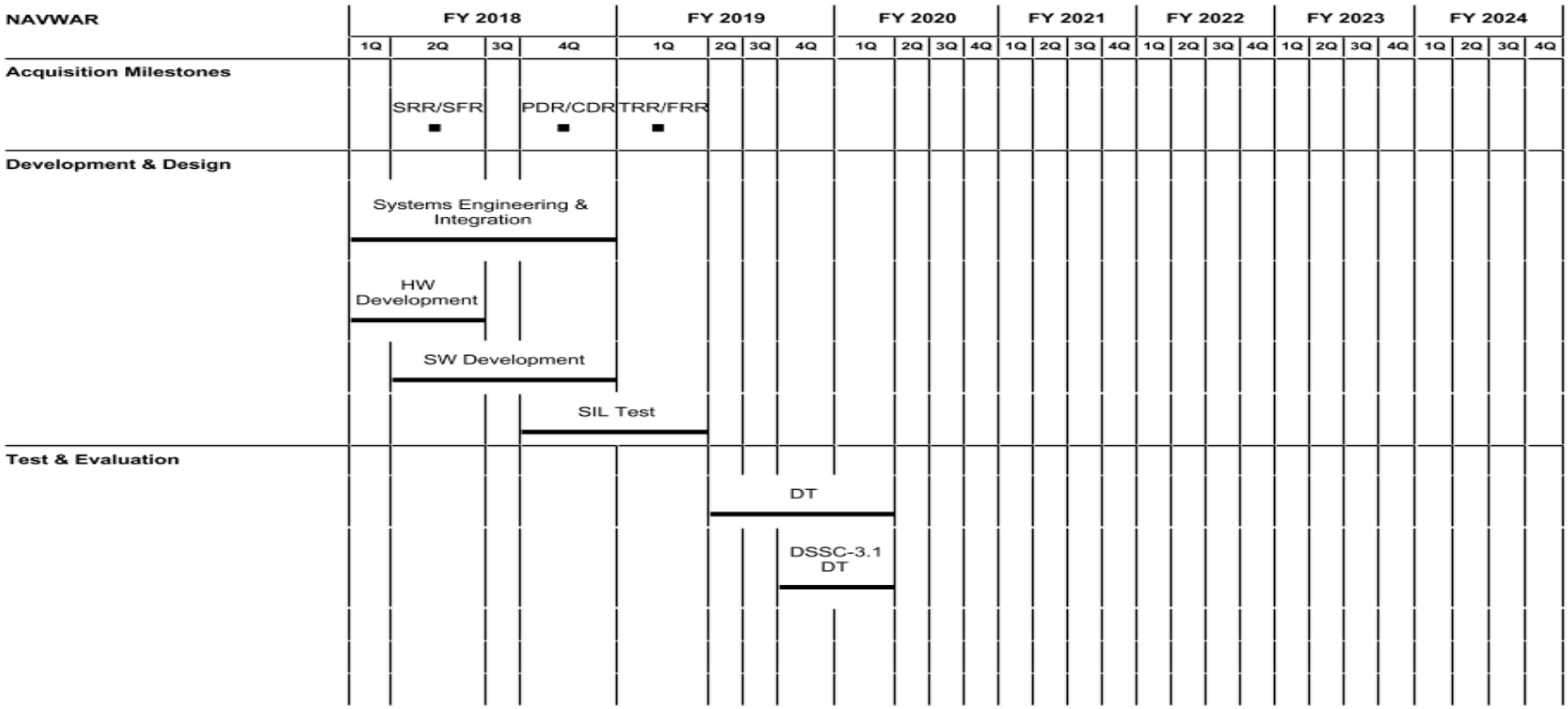
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



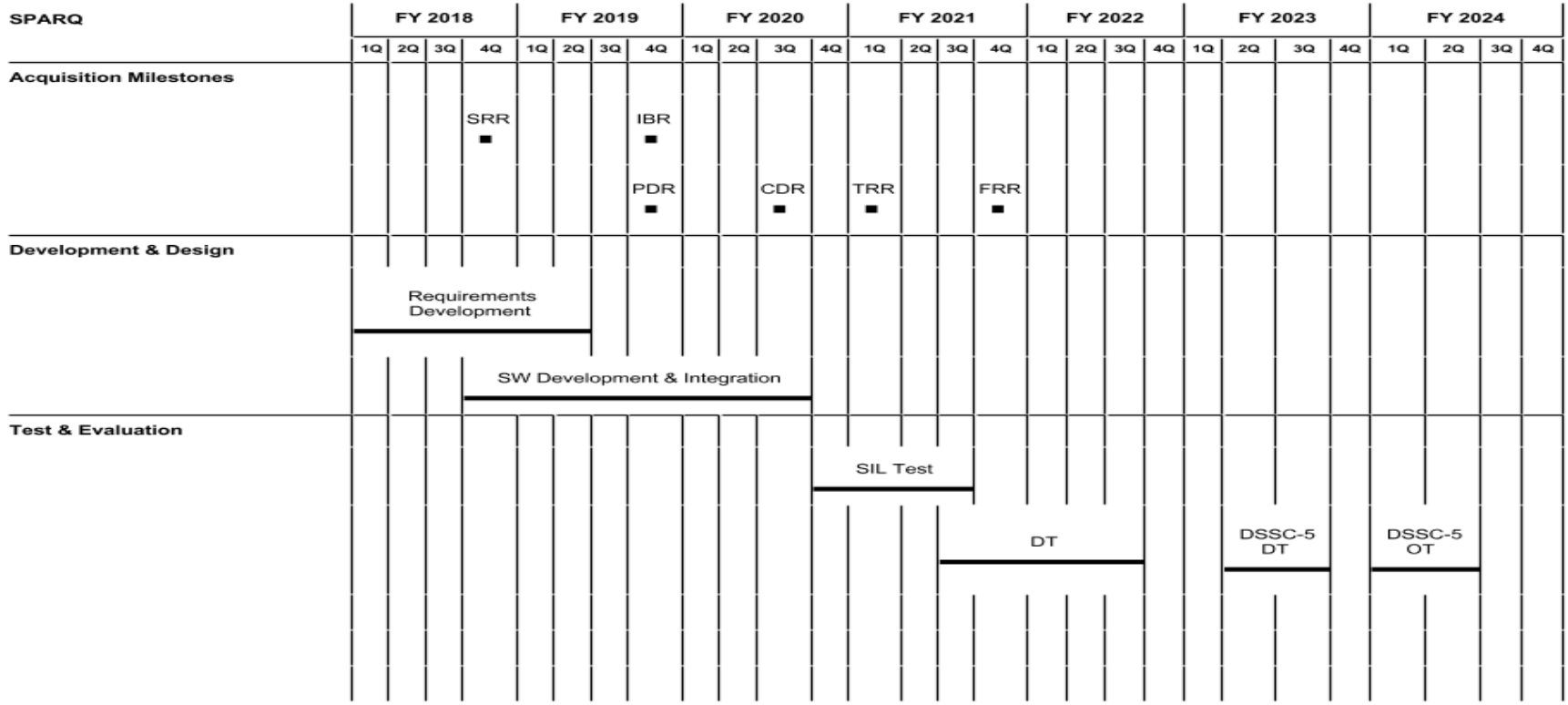
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



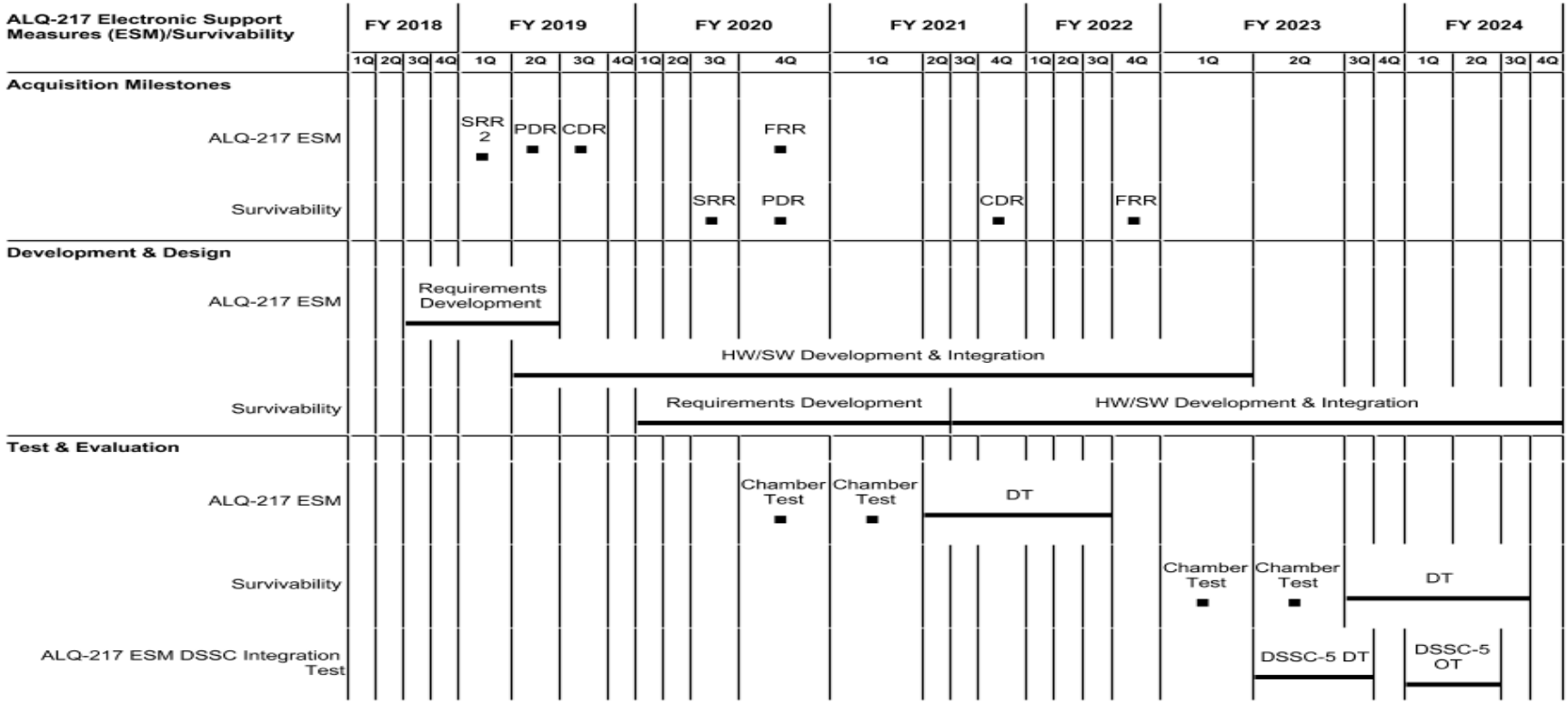
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



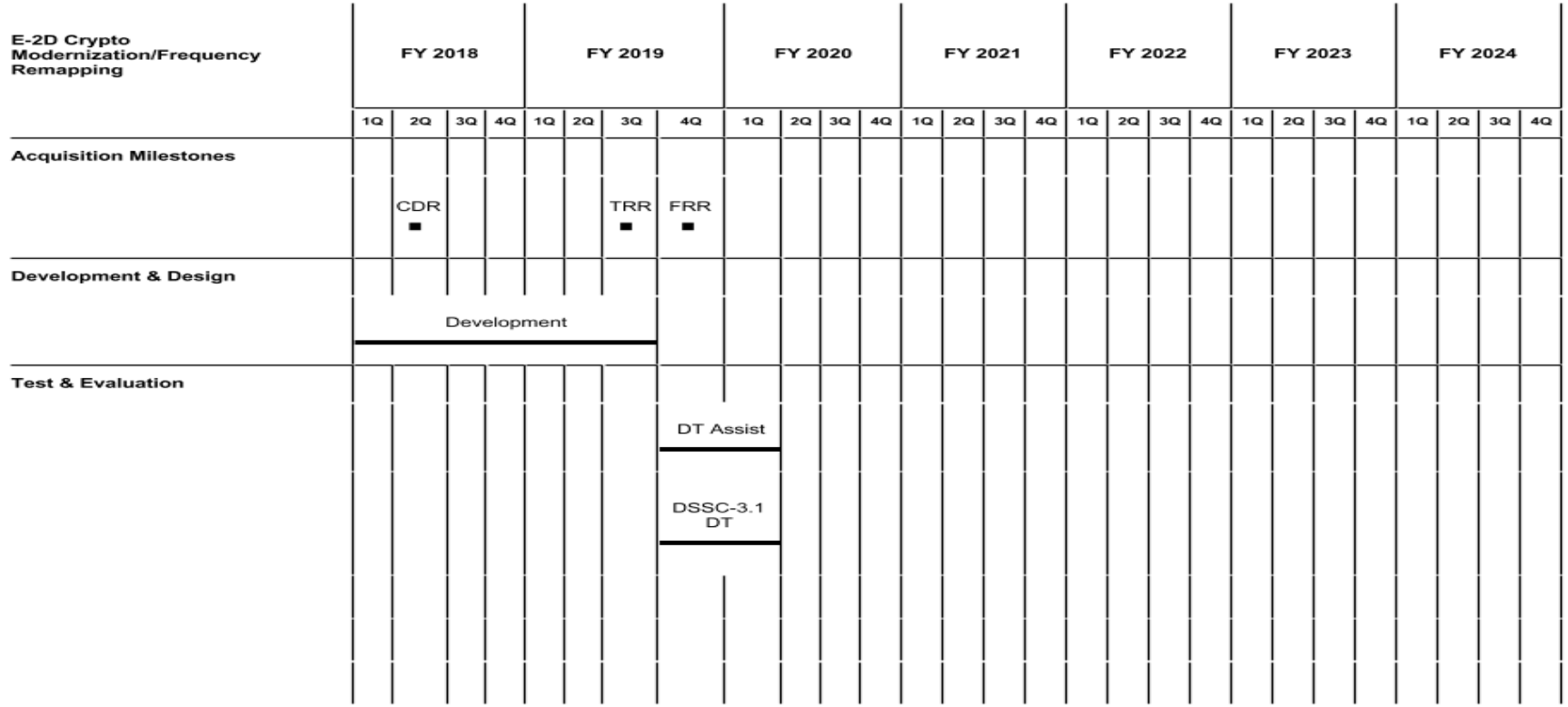
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



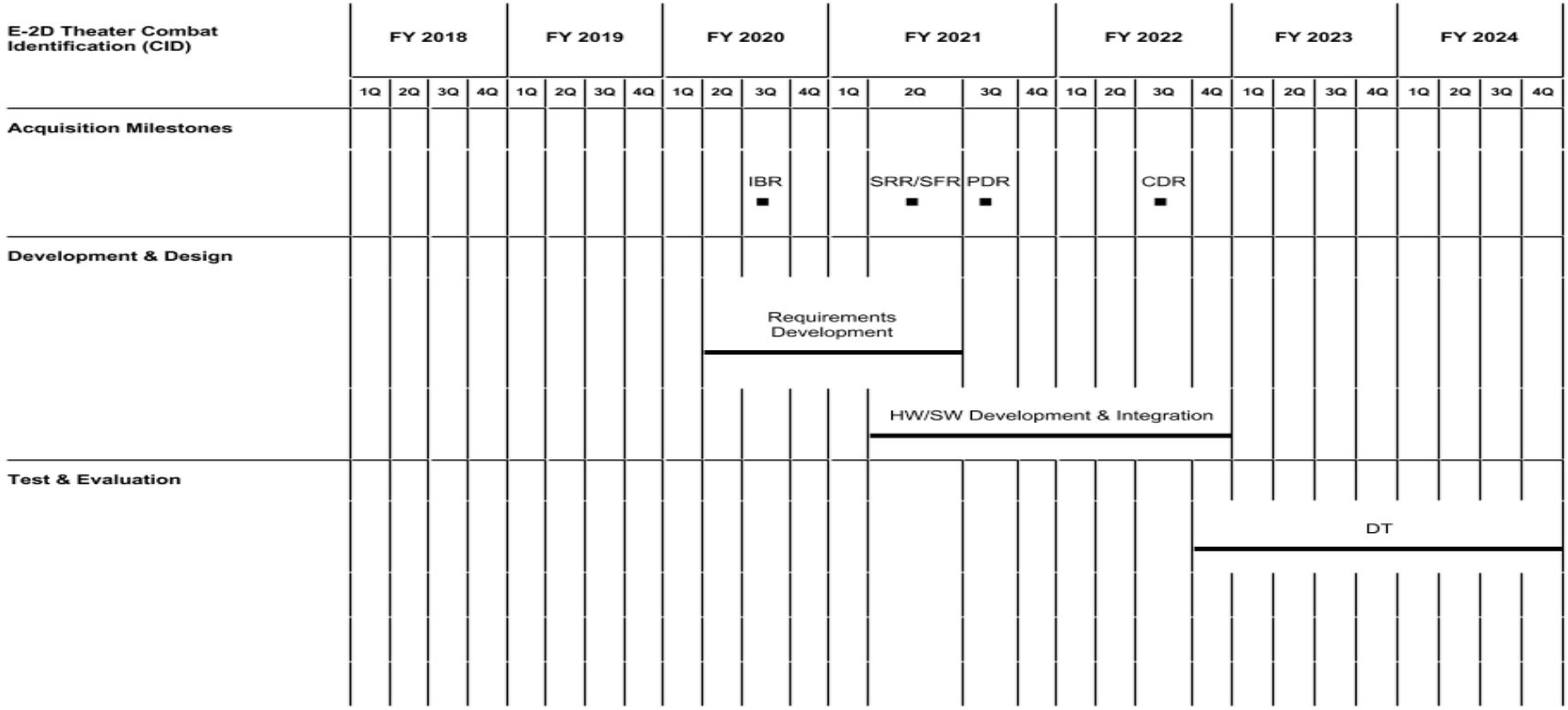
2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



2020PB - 0604234N - 3051

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*



2020PB - 0604234N - 3051

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
E-2D Adv Hawkeye Delta Systems/Software Configuration (DSSC) Builds				
Test & Evaluation: Developmental Test & Evaluation: DSSC-3 Capability Dev & Testing	3	2018	4	2018
Test & Evaluation: Developmental Test & Evaluation: Software Merge - DSSC-3	2	2018	2	2018
Test & Evaluation: Developmental Test & Evaluation: DSSC-3.1 Capability Dev & Testing	4	2019	1	2020
Test & Evaluation: Developmental Test & Evaluation: Software Merge - DSSC-3.1	1	2020	1	2020
Test & Evaluation: Developmental Test & Evaluation: DSSC-4 Capability Dev & Testing	1	2021	3	2021
Test & Evaluation: Developmental Test & Evaluation: Software Merge DSSC-4	4	2020	4	2020
Test & Evaluation: Developmental Test & Evaluation: DSSC-5 Capability Dev & Testing	2	2023	3	2023
Test & Evaluation: Developmental Test & Evaluation: Software Merge DSSC-5	1	2023	1	2023
Test & Evaluation: Operational Test & Evaluation: DSSC- 2.1 Fleet Release	3	2018	3	2018
Test & Evaluation: Operational Test & Evaluation: DSSC-3 Operational Test	2	2019	3	2019
Test & Evaluation: Operational Test & Evaluation: DSSC-3 Fleeet Release	4	2019	4	2019
Test & Evaluation: Operational Test & Evaluation: DSSC-3.1 Fleet Release	3	2020	3	2020
Test & Evaluation: Operational Test & Evaluation: DSSC-4 Operational Test	4	2021	2	2022
Test & Evaluation: Operational Test & Evaluation: DSSC-4 Fleet Release	3	2022	3	2022
Test & Evaluation: Operational Test & Evaluation: DSSC-5 Operational Test	1	2024	2	2024
Test & Evaluation: Operational Test & Evaluation: DSSC-5 Fleet Release	3	2024	3	2024
Production Milestones: Contract Awards: Production Milestones - FRP Lot VI CA	2	2018	2	2018
Production Milestones: Contract Awards: Production Milestones - FRP Lot VII CA	2	2019	2	2019
Production Milestones: Contract Awards: Production Milestones - FRP Lot VIII CA	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Contract Awards: Production Milestones - FRP Lot IX CA	2	2021	2	2021
Production Milestones: Contract Awards: Production Milestones - FRP Lot X CA	2	2022	2	2022
Production Milestones: Contract Awards: Production Milestones - FRP Lot XI CA	2	2023	2	2023
Deliveries: Production Deliveries - FRP III (4 A/C)	1	2018	4	2018
Deliveries: Production Deliveries - FRP IV (5 A/C)	1	2019	4	2019
Deliveries: Production Deliveries - FRP IV (1 A/C)	1	2020	1	2020
Deliveries: Production Deliveries - FRP V (4 A/C)	1	2020	4	2020
Deliveries: Production Deliveries - FRP V (2 A/C)	1	2021	1	2021
Deliveries: Production Deliveries - FRP VI (3 A/C)	2	2021	4	2021
Deliveries: Production Deliveries - FRP VI (2 A/C)	1	2022	1	2022
Deliveries: Production Deliveries - FRP VII (3 A/C)	2	2022	4	2022
Deliveries: Production Deliveries - FRP VII (1 A/C)	1	2023	1	2023
Deliveries: Production Deliveries - FRP VIII (3 A/C)	2	2023	4	2023
Deliveries: Production Deliveries - FRP VIII (1 A/C)	1	2024	1	2024
Deliveries: Production Deliveries - FRP IX (3 A/C)	2	2024	4	2024
E-2D Adv Hawkeye Aerial Refueling				
System Development: Hardware/Software Development: Aerial Refueling - Engineering & Manufacturing Development	1	2018	4	2019
System Development: Reviews: Aerial Refueling - Physical Configuration Audit	2	2018	2	2018
System Development: Reviews: Aerial Refueling - Operational Test Readiness Review	1	2019	1	2019
Test & Evaluation: Developmental Flight Test: Developmental Flight Test	1	2018	3	2018
Test & Evaluation: Developmental Flight Test: Developmental Test	4	2018	1	2019
Test & Evaluation: Developmental Flight Test: Opertational Flight Test	2	2019	3	2019
E-2D Counter Electronic Attack				
System Development: Software Development DSSC 4: Counter Electronic Attack - SW Development	1	2018	1	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
System Development: Software Development DSSC 4: Counter Electronic Attack - SIL Integration	2	2018	4	2018
System Development: Software Development DSSC 4: Counter Electronic Attack - TRR	3	2018	3	2018
System Development: Software Development DSSC 4: Counter Electronic Attack - FRR	1	2019	1	2019
System Development: Software Development DSSC 4: Counter Electronic Attack - Delta FRR	2	2020	2	2020
System Development: Requirement Development DSSC 5: Counter Electronic Attack - Requirements Development	3	2019	3	2020
System Development: Requirement Development DSSC 5: Counter Electronic Attack - HW/SW Development	3	2020	4	2021
System Development: Requirement Development DSSC 5: Counter Electronic Attack - System Requirement Review	2	2020	2	2020
System Development: Requirement Development DSSC 5: Counter Electronic Attack - Preliminary Design Review	1	2021	1	2021
System Development: Requirement Development DSSC 5: Counter Electronic Attack - Critical Design Review	4	2021	4	2021
System Development: Requirement Development DSSC 5: Counter Electronic Attack - Test Readiness Review	2	2022	2	2022
System Development: Requirement Development DSSC 5: Counter Electronic Attack - Functional Readiness Review	1	2023	1	2023
System Development: Requirement Development DSSC 6: Counter Electronic Attack - Requirements Development	3	2023	3	2024
System Development: Requirement Development DSSC 6: Counter Electronic Attack - System Requirement Review	2	2024	2	2024
System Development: Requirement Development DSSC 6: Counter Electronic Attack - HW/SW Development	3	2024	4	2024
Test & Evaluation DSSC: Developmental T&E DSSC 4: Counter Electronic Attack - DT&E	2	2019	1	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation DSSC: Developmental T&E DSSC 5: Counter Electronic Attack - SIL Integration	1	2022	1	2023
Test & Evaluation DSSC: Developmental T&E DSSC 5: Counter Electronic Attack - DT&E	2	2023	4	2023
Test & Evaluation DSSC: DSSC Integration & Test: DSSC-4 Dev Test	1	2021	3	2021
Test & Evaluation DSSC: DSSC Integration & Test: DSSC-5 Dev Test	2	2023	3	2023
Test & Evaluation DSSC: DSSC Integration & Test: DSSC-4 Operational Test	4	2021	2	2022
Test & Evaluation DSSC: DSSC Integration & Test: DSSC-5 Operational Test	1	2024	2	2024
E-2D MIDS/JTRS Tactical Targeting Networking Technology (TTNT)				
System Development & Design: TTNT HPA Development & Design: TTNT High Power Amplifier Critical Design Review	4	2018	4	2018
System Development & Design: TTNT HPA Development & Design: TTNT High Power Amplifier Test Readiness Review	2	2019	2	2019
System Development & Design: TTNT MIDS/JTRS TTNT Integration: TTNT - Critical Design Review	3	2018	3	2018
System Development & Design: TTNT MIDS/JTRS TTNT Integration: TTNT -Test Readiness Review	1	2020	1	2020
System Development & Design: TTNT MIDS/JTRS TTNT Integration: TTNT - Functional Readiness Review	3	2020	3	2020
System Development & Design: TTNT MIDS/JTRS TTNT Integration: TTNT - Production Readiness Review	1	2021	1	2021
Test & Evaluation: MIDS/JTRS TTNT Developmental Test/Operational Test: MIDS/ JTRS/TTNT - Developmental Test	2	2020	3	2020
Test & Evaluation: MIDS/JTRS TTNT Developmental Test/Operational Test: MIDS/ JTRS/TTNT - Developmental Test DSSC 4	1	2021	3	2021
Test & Evaluation: MIDS/JTRS TTNT Developmental Test/Operational Test: MIDS/ JTRS/TTNT Operational Test DSSC 4	4	2021	2	2022
E-2D SIPRChat				
Acquisition Milestones: Milestones: SIPRChat - Critical Design Review	1	2018	1	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Milestones: Milestones: SIPRChat -Test Readiness Review	2	2019	2	2019
Acquisition Milestones: Milestones: SIPRChat - Functional Readiness Review	1	2020	1	2020
Test & Evaluation: Developmental Test/Operational Test: Developmental Test for DSSC-3.1	4	2019	1	2020
Test & Evaluation: Developmental Test/Operational Test: Developmental Test	1	2020	2	2020
Test & Evaluation: Developmental Test/Operational Test: Developmental Test DSSC-3.1	4	2019	1	2020
Test & Evaluation: Developmental Test/Operational Test: Developmental Test DSSC-4	1	2021	3	2021
Test & Evaluation: Developmental Test/Operational Test: Operational Test DSSC-4	4	2021	2	2022
Accelerated Mid-Term Interoperability Improvement Program (AMIIP)				
Test & Evaluation: Technical Evaluation: Developmental Test DSSC-3	3	2018	4	2018
Test & Evaluation: Technical Evaluation: Operational Test DSSC-3	2	2019	4	2019
Sensor Netting (SN)				
Acquisition Milestones: SN DSSC 4: System Requirements Review	4	2018	4	2018
Acquisition Milestones: SN DSSC 4: Preliminary Design Review	1	2019	1	2019
Acquisition Milestones: SN DSSC 4: Critical Design Review	4	2019	4	2019
Acquisition Milestones: SN DSSC 4: Test Readiness Review	1	2020	1	2020
Acquisition Milestones: SN DSSC 4: Functional Readiness Review	3	2020	3	2020
Acquisition Milestones: SN DSSC 5: System Requirements Review	4	2018	4	2018
Acquisition Milestones: SN DSSC 5: Integrated Baseline Review	4	2019	4	2019
Acquisition Milestones: SN DSSC 5: Preliminary Design Review	4	2019	4	2019
Acquisition Milestones: SN DSSC 5: Critical Design Review	3	2020	3	2020
Acquisition Milestones: SN DSSC 5: Test Readiness Review	1	2021	1	2021
Acquisition Milestones: SN DSSC 5: Functional Readiness Review	4	2021	4	2021
Development & Design: SW Development and Integrationn DSSC 4	4	2018	4	2019
Development & Design: SW Development and Integration DSSC 5	1	2019	4	2021
Test & Evaluaiton: SIL Test DSSC-4	1	2020	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluaiton: SIL Test DSSC- 5	1	2021	1	2022
Test & Evaluaiton: Development Test SN DSSC-4	3	2020	4	2020
Test & Evaluaiton: Developmental Test DSSC-4	1	2021	3	2021
Test & Evaluaiton: Operational Test DSSC-4	4	2021	2	2022
Test & Evaluaiton: Development Test DSSC-5	2	2023	3	2023
Test & Evaluaiton: Operational Test DSSC-5	1	2024	2	2024
Data Fusion Phase 1				
System Requirements Review	4	2018	4	2018
Preliminary Design Review	1	2019	1	2019
Critical Design Review	3	2019	3	2019
Test Readiness Review	2	2020	2	2020
Functional Readiness Review	3	2020	3	2020
Data Fusion Phase 2: System Requirement Review	2	2019	2	2019
Data Fusion Phase 2: Preliminary Design Review	4	2019	4	2019
Data Fusion Phase 2: Critical Design Review	3	2020	3	2020
Data Fusion Phase 2: Test Readiness Review	1	2021	1	2021
Data Fusion Phase 2: Functional Readiness Review	4	2021	4	2021
Development & Design: Development & Integration Data Fusion Phase 1	1	2018	1	2019
Development & Design: Development & Integration Data Fusion Phase 2	2	2019	4	2019
Development & Design: Systems Engineering & Integration Data Fusion Phase 1	2	2019	2	2021
Development & Design: System Engineering & Integration Data Fusion Phase 2	1	2020	4	2022
Development & Design: SIL Test Data Fusion Phase 1	2	2020	3	2020
Development & Design: Risk Reduction Interoperability Test	3	2020	3	2020
Development & Design: SIL Test Data Fusion Phase 2	4	2021	1	2022
Test & Evaluation: Developmental Test - Data Fusion Phase 1	3	2020	4	2020
Test & Evaluation: Developmental Test - Data Fusion Phase 2	4	2021	3	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: Developmental Test DSSC 4 (Data Fusion Phase 1)	1	2021	3	2021
Test & Evaluation: Operational Test DSSC 4 (Data Fusion Phase 1)	4	2021	2	2022
Test & Evaluation: Developmental Test DSSC 5 (Data Fusion Phase 2)	2	2023	3	2023
Test & Evaluation: Operational Test DSSC 5 (Data Fusion Phase 2)	1	2024	2	2024
NAVWAR				
Acquisition Milestones: System Rquirements Review/System Functional Review	2	2018	2	2018
Acquisition Milestones: Preliminary Design Review/Critical Design Review	4	2018	4	2018
Acquisition Milestones: Test Readiness Reivew/Functional Readiness Review	1	2019	1	2019
Development & Design: Systems Engineering & Integration	1	2018	4	2018
Development & Design: Hardware Development	1	2018	2	2018
Development & Design: Software Development	2	2018	4	2018
Development & Design: System Integration Lab Test	4	2018	1	2019
Test & Evaluation: Developmental Test	2	2019	1	2020
Test & Evaluation: Developmental Test DSSC-3.1	4	2019	1	2020
SPARQ				
Acquisition Milestones: System Requirements Review	4	2018	4	2018
Acquisition Milestones: Integrated Baseline Review	4	2019	4	2019
Acquisition Milestones: Preliminary Design Review	4	2019	4	2019
Acquisition Milestones: Critical Design Review	3	2020	3	2020
Acquisition Milestones: Test Readiness Review	1	2021	1	2021
Acquisition Milestones: Functional Readiness Review	4	2021	4	2021
Development & Design: Requirements Development	1	2018	2	2019
Development & Design: Software Development and Integration	4	2018	3	2020
Test & Evaluation: SIL Test	4	2020	3	2021
Test & Evaluation: Developmental Test	3	2021	3	2022
Test & Evaluation: Developmental Test DSSC-5	2	2023	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: Operational Test DSSC-5	1	2024	2	2024
ALQ-217 Electronic Support Measures (ESM)/Survivability				
Acquisition Milestones: ALQ-217 ESM: System Requirements Review 2	1	2019	1	2019
Acquisition Milestones: ALQ-217 ESM: Preliminary Design Review	2	2019	2	2019
Acquisition Milestones: ALQ-217 ESM: Critical Design Review	3	2019	3	2019
Acquisition Milestones: ALQ-217 ESM: Functional Readiness Review	4	2020	4	2020
Acquisition Milestones: Survivability: System Requirements Review	3	2020	3	2020
Acquisition Milestones: Survivability: Preliminary Design Review	4	2020	4	2020
Acquisition Milestones: Survivability: Critical Design Review	4	2021	4	2021
Acquisition Milestones: Survivability: Functional Readiness Review	4	2022	4	2022
Development & Design: ALQ-217 ESM: Requirements Development	3	2018	2	2019
Development & Design: ALQ-217 ESM: HW/SW Development & Integration	2	2019	1	2023
Development & Design: Survivability: Requirements Development	1	2020	2	2021
Development & Design: Survivability: HW/SW Development & Integration	3	2021	4	2024
Test & Evaluation: ALQ-217 ESM: ChamberTest 1	4	2020	4	2020
Test & Evaluation: ALQ-217 ESM: Chamber Test 2	1	2021	1	2021
Test & Evaluation: ALQ-217 ESM: Developmental Test	2	2021	3	2022
Test & Evaluation: Survivability: Chamber Test 3	1	2023	1	2023
Test & Evaluation: Survivability: Chamber Test 4	2	2023	2	2023
Test & Evaluation: Survivability: Developmental Test	3	2023	3	2024
Test & Evaluation: ALQ-217 ESM DSSC Integration Test: Developmental Test DSSC-5	2	2023	3	2023
Test & Evaluation: ALQ-217 ESM DSSC Integration Test: Operational Test DSSC-5	1	2024	2	2024
E-2D Crypto Modernization/Frequency Remapping				
Acquisition Milestones: Critical Desing Review	2	2018	2	2018
Acquisition Milestones: Test Readiness Review	3	2019	3	2019
Acquisition Milestones: Functional Readiness Review	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 3051 / *E-2D Adv Hawkeye*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Development & Design: Requirements Development	1	2018	3	2019
Test & Evaluation: Developmental Test	4	2019	1	2020
Test & Evaluation: Developmental Test DSSC-3.1	4	2019	1	2020
E-2D Theater Combat Identification (CID)				
Acquisition Milestones: Integrated Baseline Review	3	2020	3	2020
Acquisition Milestones: System Requirement Review/System Functional Review	2	2021	2	2021
Acquisition Milestones: Preliminary Design Review	3	2021	3	2021
Acquisition Milestones: Critical Design Review	3	2022	3	2022
Development & Design: Requirements Development	2	2020	2	2021
Development & Design: Hardware/Software Development and Integration	2	2021	4	2022
Test & Evaluation: Developmental Test	4	2022	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604234N / *Advanced Hawkeye*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
9999: *Congressional Adds*	17.879	9.657	12.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	39.536
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Congressional Add. Program Increase for E-2D Advanced Hawkeye(AHE) radar development

A. Mission Description and Budget Item Justification

Congressional Add. The E-2D Advanced Hawkeye and associated APY-9 radar meet the requirements specified in the Capabilities Development Document (CDD), including detection ranges, detection velocities, and tracking accuracies, verified through extensive developmental and operational flight testing and deployed operations. Program increase for E-2D advanced radar development to stay ahead of the evolving threat.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019
Congressional Add: Radar Enhancements ***FY 2018 Accomplishments:*** Funding applied to research and development efforts to mature technologies in support of next generation radar and sensor systems. ***FY 2019 Plans:*** Continue research and development efforts to mature technologies in support of next generation radar and sensor systems.	9.657	0.000
Congressional Add: E-2D Hawkeye Advanced Radar ***FY 2018 Accomplishments:*** N/A ***FY 2019 Plans:*** N/A	0.000	12.000
Congressional Adds Subtotals	9.657	12.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Program increase to continue improving radar capability of the E-2D Hawkeye to stay ahead of the evolving threat. Planned investments in the E-2D, APY-9 radar and new antenna technology will continue to pace emerging threats.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 9999 / *Congressional Adds*

E. Performance Metrics

HG-UESA technology shows great exceptional potential for future E-2D missions and the next generation Airborne Early Warning platform.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604234N / *Advanced Hawkeye*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	C/FFP	Northrop Grumman Corporation (NGC) : Melbourne, FL	9.842	5.539	Aug 2018	5.927	Sep 2019	0.000		-		0.000	0.000	21.308	21.308
System Engineering	Various	Various : Various	6.921	1.411	Sep 2018	2.100	Jul 2019	0.000		-		0.000	0.000	10.432	10.432
System Engineering	C/CPFF	Navy Syst Mgt Activity : Arlington VA	0.000	2.707	Aug 2018	2.000	Sep 2019	0.000		-		0.000	0.000	4.707	4.707
		Subtotal	16.763	9.657		10.027		0.000		-		0.000	0.000	36.447	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering	WR	SPAWAR : San Diego	0.116	0.000		0.000		0.000		-		0.000	0.000	0.116	-
Government Engineering	WR	NAWCAD : Pax River	1.000	0.000		0.498	Jan 2019	0.000		-		0.000	0.000	1.498	-
Software Development	C/CPFF	Navy Syst Mgt Activity : Arlington VA	0.000	0.000		1.068	Jan 2019	0.000		-		0.000	0.000	1.068	1.068
		Subtotal	1.116	0.000		1.566		0.000		-		0.000	0.000	2.682	N/A

Test and Evaluation ($ in Millions)

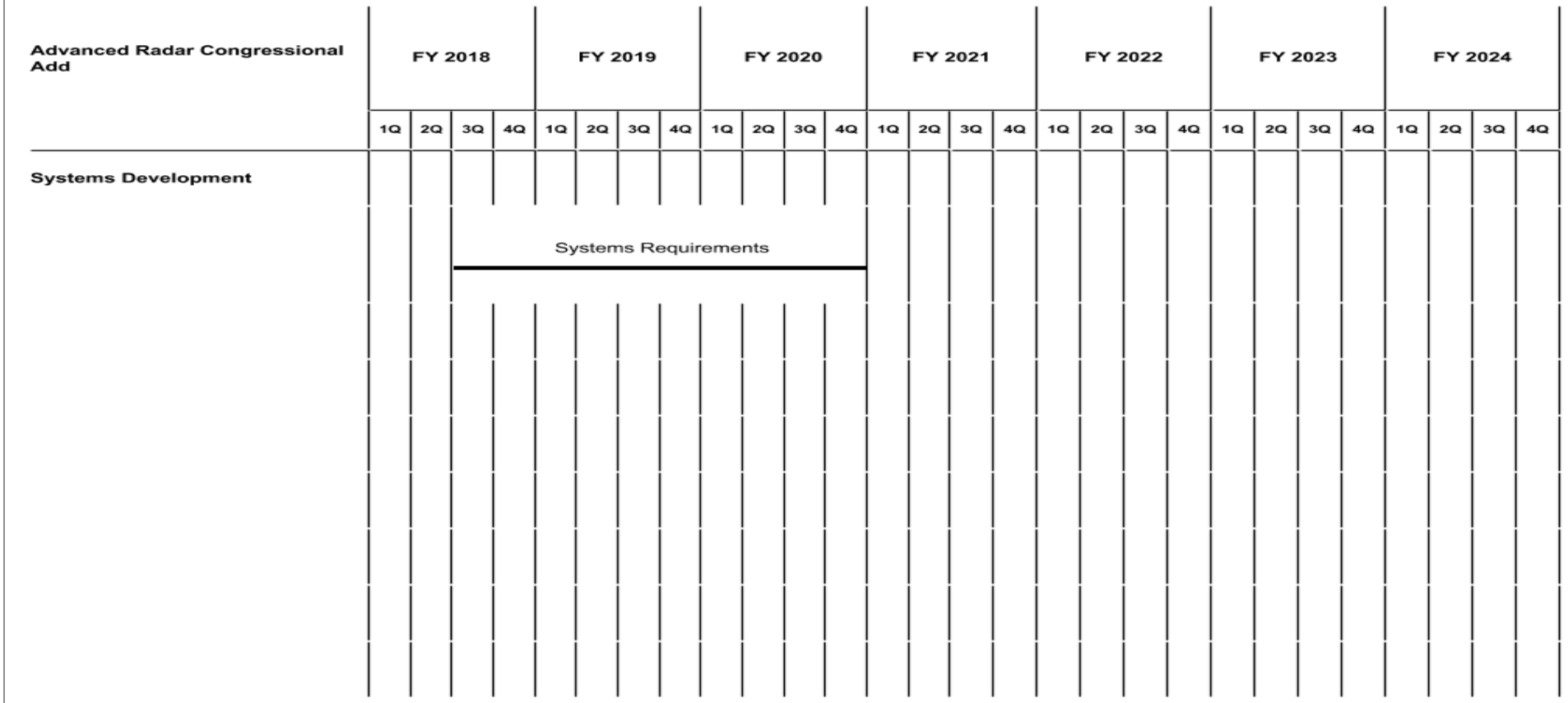
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental T&E	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.407	Jan 2019	0.000		-		0.000	0.000	0.407	-
		Subtotal	0.000	0.000		0.407		0.000		-		0.000	0.000	0.407	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604234N / *Advanced Hawkeye*	Project (Number/Name) 9999 / *Congressional Adds*	

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.879	9.657		12.000		0.000		-		0.000	0.000	39.536	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 9999 / *Congressional Adds*



2020PB - 0604234N - 9999

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604234N / *Advanced Hawkeye*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Advanced Radar Congressional Add				
Systems Development: Systems Requirements	3	2018	4	2020