Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604522N *I Air & Missile Defense Radar (AMDR) System*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	607.115	59.561	87.364	87.459	-	87.459	97.064	94.445	84.203	78.405	Continuing	Continuing
3186: *Air and Missile Defense Radar*	607.115	59.561	87.364	87.459	-	87.459	97.064	94.445	84.203	78.405	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): P384

A. Mission Description and Budget Item Justification

The Air and Missile Defense Radar (AMDR) program consists of the AN/SPY-6(V) Family Of Radars (FoR):
- AN/SPY-6(V)1 (DDG 51 Arleigh Burke class Flight III guided missile destroyer)
- AN/SPY-6(V)2 (Nimitz class Carriers, America class LHA, and San Antonio class LPD)
- AN/SPY-6(V)3 (Ford class Carriers, Constellation class FFG)
- AN/SPY-6(V)4 (DDG 51 Arleigh Burke class Flight IIA guided missile destroyer backfit)

AN/SPY-6(V)1 will provide multi-mission capabilities, simultaneously supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area and Self Defense against air and surface threats. For the Ballistic Missile Defense (BMD) capability, increased radar sensitivity and bandwidth over current radar systems are needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges, concurrent with Area and Self Defense against Air and Surface threats. For the Area Air Defense and Self Defense capability, increased sensitivity and clutter capabilities are needed to detect, react to, and engage stressing Very Low Observable/Very Low Flyer (VLO/VLF) threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an active phased array radar with the required capabilities to address the evolving threat. The AN/SPY-6(V) FoR will obtain performance and technology enhancements throughout their service life based upon an approach that includes modularity of hardware and software, a scalable design and Open Architecture (OA).

AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR) will provide multi-mission capabilities, simultaneously supporting Air Traffic Control (ATC), situational awareness, and ship self-defense against Air and Surface threats. For these missions, increased clutter capability, short-range detection and tracking, and special weather waveforms are needed. AN/SPY-6(V)3 is the primary air surveillance radar supporting ship self-defense, situational awareness and Air Traffic Control (ATC) for Ford class Carriers. For other ship classes, AN/SPY-6(V)2 is the primary radar for self-defense and situational awareness with the ancillary role of supporting ATC by resolving SPN-50 mast blockage for ATC.

AN/SPY-6(V)4 will provide Active Electronically-Steered Array (AESA) and digital beamforming technology for backfit to Flight IIA DDG. Backfit of SPY-6 technology on DDG 51 FLT IIA commences with non-recurring engineering efforts to scale the radar hardware and software; perform modeling and simulation to update the Continuity of Operations (CONOPS), and; enable SPY-6 IAMD performance capabilities on FLT IIA DDGs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604522N *I Air & Missile Defense Radar (AMDR) System*

Advanced Distributed Radar (ADR) is a software enhancement that will enable multi-ship cooperative radar operations in order to support Distributed Maritime Operations (DMO) for the SPY-6 FoR. ADR initial capabilities transition Receive Only Cooperative Radar and Networked Cooperative Radar (NCR) software capabilities from Office of Naval Research to tactical development, implementation and testing. ADR software enhancements will increase radar detection performance for Integrated Air and Missile Defense capabilities and enable operations with radars in receive-only mode in cooperation with other AN/SPY-6(V) radars.

The FY23 funding request supports the following efforts:
SPY-6(V)1 integration efforts and associated development to support AEGIS Baseline 10 integration, advanced radar capability testing at the Advanced Radar Development Evaluation Laboratory (ARDEL), and integration with the AEGIS Virtual Test Environment (VTE). Integration efforts and associated development for AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR)) to integrate with Ship Self Defense System (SSDS) Baseline 12 and meet the performance requirements contained in the Battlespace Awareness ICD. This includes continued testing at the Land Based Test Site and integration efforts with the SYY-1 Air Traffic Control System and Cooperative Engagement Capability. AN/SPY-6(V)4 FLT IIA backfit efforts will continue with ship integration studies (power, cooling, arrangements), refinement of radar prime power design, continue development of Interface Control Documents (ICDs), continue systems engineering activities to include system-level requirements development, modeling and simulation in support of requirements development, and requirements flow-down to align with FLT IIA requirements. ADR efforts will commence combat system integration and continue with system engineering activities including system-level requirements development, modeling and simulation activities in support of requirements development, and support technology transition activities.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	61.656	96.556	0.000	-	0.000
Current President's Budget	59.561	87.364	87.459	-	87.459
Total Adjustments	-2.095	-9.192	87.459	-	87.459
• Congressional General Reductions	-	-0.156			
• Congressional Directed Reductions	-	-9.036			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.006	0.000			
• SBIR/STTR Transfer	-2.089	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	87.459	-	87.459

Change Summary Explanation

The FY 2023 funding request was reduced by $5.700 million to account for the availability of prior year execution balances.

FY 2021: Decrease of $2.095M is due to SBIR and cancelled accounts reductions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604522N *I Air & Missile Defense Radar (AMDR) System*

FY 2022: Decrease of $9.192M is due to $9.036M reduction for Engineering changes/capability enhancements and backfit delays and $0.156M for an FFRDC reduction.

FY 2023 funding increase reflects the fact that the FY 2022 President’s Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy											Date: April 2022	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604522N / *Air & Missile Defense Radar (AMDR) System*				Project (Number/Name) 3186 / *Air and Missile Defense Radar*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
3186: *Air and Missile Defense Radar*	607.115	59.561	87.364	87.459	-	87.459	97.064	94.445	84.203	78.405	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: P384

A. Mission Description and Budget Item Justification

The Air and Missile Defense Radar (AMDR) program consists of the AN/SPY-6(V) Family Of Radars (FoR):
- AN/SPY-6(V)1 (DDG 51 Arleigh Burke class Flight III guided missile destroyer)
- AN/SPY-6(V)2 (Nimitz class Carriers, America class LHA, and San Antonio class LPD)
- AN/SPY-6(V)3 (Ford class Carriers, Constellation class FFG)
- AN/SPY-6(V)4 (DDG 51 Arleigh Burke class Flight IIA guided missile destroyer backfit)

AN/SPY-6(V)1 will provide multi-mission capabilities, simultaneously supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area and Self Defense against air and surface threats. For the Ballistic Missile Defense (BMD) capability, increased radar sensitivity and bandwidth over current radar systems are needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges, concurrent with Area and Self Defense against Air and Surface threats. For the Area Air Defense and Self Defense capability, increased sensitivity and clutter capabilities are needed to detect, react to, and engage stressing Very Low Observable/Very Low Flyer (VLO/VLF) threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an active phased array radar with the required capabilities to address the evolving threat. The AN/SPY-6(V) FoR will obtain performance and technology enhancements throughout their service life based upon an approach that includes modularity of hardware and software, a scalable design and Open Architecture (OA).

AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR) will provide multi-mission capabilities, simultaneously supporting Air Traffic Control (ATC), situational awareness, and ship self-defense against Air and Surface threats. For these missions, increased clutter capability, short-range detection and tracking, and special weather waveforms are needed. AN/SPY-6(V)3 is the primary air surveillance radar supporting ship self-defense, situational awareness and Air Traffic Control (ATC) for Ford class Carriers. For other ship classes, AN/SPY-6(V)2 is the primary radar for self-defense and situational awareness with the ancillary role of supporting ATC by resolving SPN-50 mast blockage for ATC.

AN/SPY-6(V)4 will provide Active Electronically-Steered Array (AESA) and digital beamforming technology for backfit to Flight IIA DDG. Backfit of SPY-6 technology on DDG 51 FLT IIA commences with non-recurring engineering efforts to scale the radar hardware and software; perform modeling and simulation to update the Continuity of Operations (CONOPS), and; enable SPY-6 IAMD performance capabilities on FLT IIA DDGs.

Advanced Distributed Radar (ADR) is a software enhancement that will enable multi-ship cooperative radar operations in order to support Distributed Maritime Operations (DMO) for the SPY-6 FoR. ADR initial capabilities transition Receive Only Cooperative Radar and Networked Cooperative Radar (NCR) software capabilities

from Office of Naval Research to tactical development, implementation and testing. ADR software enhancements will increase radar detection performance for Integrated Air and Missile Defense capabilities and enable operations with radars in receive-only mode in cooperation with other AN/SPY-6(V) radars.

The FY23 funding request supports the following efforts:
SPY-6(V)1 integration efforts and associated development to support AEGIS Baseline 10 integration, advanced radar capability testing at the Advanced Radar Development Evaluation Laboratory (ARDEL), and integration with the AEGIS Virtual Test Environment (VTE). Integration efforts and associated development for AN/SPY-6(V)2 and (V)3 (Enterprise Air Surveillance Radar (EASR)) to integrate with Ship Self Defense System (SSDS) Baseline 12 and meet the performance requirements contained in the Battlespace Awareness ICD. This includes continued testing at the Land Based Test Site and integration efforts with the SYY-1 Air Traffic Control System and Cooperative Engagement Capability. AN/SPY-6(V)4 FLT IIA backfit efforts will continue with ship integration studies (power, cooling, arrangements), refinement of radar prime power design, continue development of Interface Control Documents (ICDs), continue systems engineering activities to include system-level requirements development, modeling and simulation in support of requirements development, and requirements flow-down to align with FLT IIA requirements. ADR efforts will commence combat system integration and continue with system engineering activities including system-level requirements development, modeling and simulation activities in support of requirements development, and support technology transition activities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: AN/SPY-6(V)1 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (CONTRACTOR)	29.010	37.919	14.866	0.000	14.866
Articles:	-	-	-	-	-
FY 2022 Plans: - Continue to provide system engineering and Software (SW) support for combat system integration efforts - Continue risk reduction testing at Advanced Radar Development Evaluation Laboratory (ARDEL), including refinement of radar operation functions (calibration, fault detection/fault isolation, environmental adaptation), improving electronic protection capabilities, and continue data collection on ballistic missile defense targets of opportunity - Support planning for the Operational Assessment (OA) to be conducted at ARDEL					
FY 2023 Base Plans: - Continue to provide system engineering and Software (SW) support for combat system integration efforts - Continue risk reduction testing at Advanced Radar Development Evaluation Laboratory (ARDEL), including refinement of radar operation functions (calibration, fault detection/fault isolation, environmental adaptation), improving electronic protection capabilities, and continue data collection on ballistic missile defense targets of opportunity - Support execution and data analysis of the OA at ARDEL - Support Developmental Test (DT)/Operational Test (OT) planning					
FY 2023 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *Air & Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease aligns with planned transition from core radar development to focusing on ship and combat system integration.					
Title: AN/SPY-6(V)1 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (GOVERNMENT) ***Articles:*** ***FY 2022 Plans:*** - Continue to direct and lead independent technical assessments - Continue support for combat system integration and DDG Flt III integration efforts including support of DDG 125 AEGIS Light Off (ALO) - Continue risk reduction testing at ARDEL, including refinement of radar operations functions, and continue data collection on ballistic missile defense targets of opportunity - Plan and coordinate the combined AMDR/DDG Flt III Operational Assessment (OA) to be conducted at ARDEL ***FY 2023 Base Plans:*** - Continue to direct and lead independent technical assessments - Continue support for combat system integration and DDG Flt III integration efforts - Continue risk reduction testing at ARDEL on remaining mission area requirements - Coordinate the OA at ARDEL and coordinate plans for combined AMDR/DDG Flt III DT/OT ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase associated with establishing Software Product Support Integrator at NSWC Dahlgren.	5.244 -	5.439 -	10.809 -	0.000 -	10.809 -
Title: AN/SPY-6(V)1 TEST AND EVALUATION ASSETS AND FACILITIES ***Articles:*** ***FY 2022 Plans:*** - Continue to maintain PMRF test site - Continue to provide PMRF range services in support of risk reduction testing at ARDEL - Continue to provide engineering services in support of risk reduction testing at ARDEL ***FY 2023 Base Plans:***	3.228 -	1.828 -	5.005 -	0.000 -	5.005 -

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *Air & Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Continue refresh/replace of infrastructure at PMRF test site, including facility power architecture - Continue to maintain PMRF test site - Continue to provide PMRF range services in support of risk reduction testing at ARDEL - Continue to provide engineering services in support of risk reduction testing at ARDEL ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to infrastructure corrective maintenance at PMRF needed to stay fully operational.					
Title: ENGINEERING CHANGES/CAPABILITY ENHANCEMENTS AND BACK FIT	7.921	14.763	28.198	0.000	28.198
Articles:	-	-	-	-	-
FY 2022 Plans: ADR Efforts: - Commence combat system integration requirements generation - Continue system-level requirements development - Continue modeling and simulation activities in support of requirements development - Identify risks and associated mitigation plans - Continue to support technology transition activities AN/SPY-6(V)4 Backfit: - Continue system-level requirements development - Continue modeling and simulation activities in support of requirements development - Continue Technical Data Package (TDP) maintenance - Identify risks and associated mitigation plans - Continue high level analysis in support of ship HM&E studies					
FY 2023 Base Plans: ADR Efforts: - Commence software development (Receive Only Cooperative Radar (ROCR) - Commence systems engineering in support of software development - Continue combat system integration requirements generation - Continue modeling and simulation activities in support of software development - Manage risks and associated mitigation plans					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *Air & Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Conduct In Process Review (IPR) 1 - Continue to support technology transition activities AN/SPY-6(V)4 Backfit: - Commence software development (scale (V)1 capabilities for DDG Mod) - Commence system engineering in support of software development - Continue modeling and simulation activities in support of software development - Continue Technical Data Package (TDP) maintenance - Manage risks and associated mitigation plans - Conduct In Process Review (IPR) 1 - Conduct In Process Review (IPR) 2 - Commence support for transition to production activities for production readiness ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to ramp up of Non-Recurring Engineering associated with DDG FLT IIA Backfit and ADR capability improvements.					
Title: PROGRAM MANAGEMENT	0.374	1.318	1.786	0.000	1.786
Articles:	-	-	-	-	-
FY 2022 Plans: - Continue to assist in cost, schedule, and performance management, contract management and oversight, earned value assessment and risk identification and mitigation - Continue to provide support to IPTs and WGs required to support Integration & Production Support (I&PS) contract - Continue to provide support to combat system integration efforts - Commence support to IPTs and WGs required to support HP&S contract ***FY 2023 Base Plans:*** - Continue to assist in cost, schedule, and performance management, contract management and oversight, earned value assessment and risk identification and mitigation - Continue to provide support to IPTs and WGs required to support I&PS contract - Continue to provide support to combat system integration efforts					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *Air & Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Continue support to IPTs and WGs required to support HP&S contract ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase aligns with planned development efforts.					
Title: AN/SPY-6(V)2 and (V)3 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (CONTRACTOR) ***Articles:*** ***FY 2022 Plans:*** - Provide radar system engineering support to design Cross Product Teams (CPTs) for trade studies, requirements generation and trace, and modeling and simulation for Combat System (CS) integration efforts with Ship Self Defense System (SSDS) combat system - Provide radar software development for CS integration efforts with Ship Self Defense System (SSDS) combat system - Continue testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land based test events, and carrier power risk reduction testing - Continue implementation of corrective actions for hardware defects for co-site interference - Support operation of radar emulator at Combat System Engineering Agent (CSEA) lab in Moorestown, NJ, including combat system integration test support ***FY 2023 Base Plans:*** - Continue radar system engineering support to design Cross Product Teams (CPTs) for trade studies, requirements generation and trace, and modeling and simulation for Combat System (CS) integration efforts with Ship Self Defense System (SSDS) combat system - Continue radar software development for CS integration efforts with SSDS combat system - Continue testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land based test events, and carrier power risk reduction testing - Continue implementation of corrective actions for hardware defects for co-site interference	13.414 -	24.107 -	23.220 -	0.000 -	23.220 -

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *Air & Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Continue to support operation of radar emulator at Combat System Engineering Agent (CSEA) lab in Moorestown, NJ, including combat system integration test support ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease aligns with planned development efforts.					
Title: AN/SPY-6(V)2 and (V)3 DESIGN, SUPPORT, INTEGRATION, TEST AND EVALUATION (GOVERNMENT)	0.370	1.990	3.575	0.000	3.575
Articles:	-	-	-	-	-
FY 2022 Plans: - Provide oversight of system engineering and software support for initial radar integration efforts with Ship Self Defense System (SSDS) combat system - Coordinate testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land based test events, and carrier power risk reduction testing - Operate radar EDM at Wallops Island - Analyze test results for requirements verification and validation - Monitor and approve corrective action for hardware defects for co-site interference ***FY 2023 Base Plans:*** - Continue to provide oversight of system engineering and software support for initial radar integration efforts with SSDS combat system - Continue to coordinate testing at Wallops Island and in-plant, including refinement of Air Traffic Control support, radar operation functions, improving air warfare and electronic protection capabilities, combat system land based test events, and carrier power risk reduction testing - Continue to operate radar EDM at Wallops Island - Continue to analyze test results for requirements verification and validation - Continue to monitor and approve corrective action for hardware defects for co-site interference ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *Air & Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Increase aligns with planned development efforts.					
Accomplishments/Planned Programs Subtotals	59.561	87.364	87.459	0.000	87.459

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• SCN/2122: *DDG51*	3,388.774	3,841.740	5,223.466	-	5,223.466	4,442.722	4,261.845	4,427.870	4,391.205	4,598.955	129,978.574
• 0204228N/2980: *Items Less Than $5M*	1.828	3.723	7.013	-	7.013	33.806	39.490	40.488	41.162	Continuing	Continuing
• SCN/2128: *FFG(X)*	1,053.123	1,090.900	1,160.173	-	1,160.173	1,976.450	1,047.025	1,896.377	1,040.529	10,870.008	21,421.762
• SCN/2001: *Carrier Replacement Program*	1,029.933	1,353.205	1,943.230	-	1,943.230	1,744.326	2,416.628	1,159.211	1,810.540	0.000	41,819.145
• SCN/2086: *CVN Refueling Overhauls*	1,734.737	2,649.280	680.295	-	680.295	707.988	2,100.218	2,378.936	581.314	5,252.370	41,766.674
• SCN/3041: *LHA*	500.000	68.637	1,104.770	-	1,104.770	1,535.111	71.700	0.000	0.000	0.000	13,896.551
• SCN/3036: *LPD*	30.578	53.682	17.739	-	17.739	0.000	0.000	0.000	0.000	0.000	21,396.491
• O&MN/1C1C/0702228N: *O&MN AMDR*	14.933	29.783	36.191	-	36.191	43.066	62.728	58.932	60.111	Continuing	Continuing

Remarks

D. Acquisition Strategy

The AN/SPY-6(V) Advanced Radars Acquisition Strategy (AS) supports current and future variants to reflect a Family of Radars (FoR) nomenclature AN/SPY-6(V). This includes new construction DDG 51 Flight (FLT) III units beyond FY 2020, backfit to the modernization effort for DDG 51 FLT IIA units, and Enterprise Air Surveillance Radar (EASR) for the new construction and modernization of aircraft carriers and large deck amphibious ships. Given the software and hardware commonality between the AN/SPY-6(V) FoR, Program Executive Office (PEO) Integrated Warfare Systems (IWS) 2.0 will leverage AN/SPY-6(V) FoR contracts to achieve economies of scale in both production and sustainment efforts. This AS lays out strategies for the Production and Deployment phases and beyond. The AN/SPY-6(V) Hardware Production & Sustainment (HP&S) contract for production units FY2021-FY2026 includes AN/SPY-6(V)1, AN/SPY-6(V)2, AN/SPY-6(V)3, and AN/SPY-6(V)4 and is anticipated to be awarded in FY2022 after a full and open competition leveraging the Technical Data Package (TDP) and data rights obtained through the AMDR EMD/LRIP 1 and EASR EMD/LRIP contracts. The AN/SPY-6(V) Design Agent (DA) Integration and Production Support (I&PS) contract will provide DA support for continued combat system integration and test, sustaining engineering, training, software maintenance, interim depot maintenance support, and field engineering services on a sole source basis from the current system integrator, Raytheon IDS. A follow-on AN/SPY-6(V) DA contract will be competed under full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604522N / *Air & Missile Defense Radar (AMDR) System*	**Project (Number/Name)** 3186 / *Air and Missile Defense Radar*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Manufacturing Development/Engineering Services	C/CPIF	Raytheon : Marlborough, MA	326.705	13.414	Nov 2020	6.704	Dec 2021	0.000		-		0.000	0.000	346.823	-
Integration and Production Support	SS/CPFF	Raytheon : Marlborough, MA	40.022	32.939	Oct 2020	60.910	Nov 2021	56.134	Oct 2022	-		56.134	Continuing	Continuing	Continuing
Technology Development	C/FPIF	Lockheed Martin : Moorestown, NJ	0.024	0.000		0.000		0.000		-		0.000	0.000	0.024	-
Systems Engineering	C/CPIF	Lockheed Martin : Moorestown, NJ	0.000	0.000		0.000		1.243	Jan 2023	-		1.243	Continuing	Continuing	Continuing
		Subtotal	366.751	46.353		67.614		57.377		-		57.377	Continuing	Continuing	N/A

Remarks

1) FY21 to FY22 increase due to ramp up of ADR, Backfit and SPY-6(V)2/3 Design, Support, Integration and Test efforts.
2) FY22 to FY23 decrease aligns with planned transition from core radar development to focusing on ship and combat system integration.
3) Due to contract ceiling availability, majority of Raytheon EASR engineering services moved from EMD contract to I&PS contract starting in FY22.
4) Lockheed Martin efforts related to ADR combat system integration requirements generation will begin in FY23.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	MIPR	GTRI : Atlanta, GA	0.935	0.119	Jan 2021	0.000		0.000		-		0.000	0.000	1.054	-
Systems Engineering	SS/CPFF	JHU/APL : Laurel, MD	21.745	3.217	Nov 2020	6.340	Dec 2021	6.162	Nov 2022	-		6.162	Continuing	Continuing	Continuing
Systems Engineering	MIPR	MIT : Cambridge, MD	3.693	1.028	Nov 2020	1.210	Nov 2021	1.293	Nov 2022	-		1.293	Continuing	Continuing	Continuing
Systems Engineering	WR	NRL : Washington, DC	3.198	0.247	Nov 2020	0.761	Nov 2021	0.307	Nov 2022	-		0.307	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC/CR : Crane, IN	4.776	0.000		0.000		0.000		-		0.000	0.000	4.776	-
Systems Engineering	WR	NSWC/DD : Dahlgren, VA	12.376	0.890	Oct 2020	4.151	Oct 2021	10.357	Oct 2022	-		10.357	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC/PHD : Port Hueneme, CA	3.219	0.019	Oct 2020	0.137	Oct 2021	0.010	Oct 2022	-		0.010	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	SPA (Bridge) : Washington, DC	6.147	0.000		0.000		0.000		-		0.000	0.000	6.147	-
Systems Engineering	MIPR	ARL : Adelphi, MD	0.883	0.000		0.000		0.000		-		0.000	0.000	0.883	-
Systems Engineering	WR	NSWC/CD : Carderock, MD	0.281	0.000		0.000		0.000		-		0.000	0.000	0.281	-
Systems Engineering	WR	NSWC/Corona : Corona, CA	0.486	0.000		0.000		0.000		-		0.000	0.000	0.486	-
Systems Engineering	Allot	DISA : Scott AFB, Illinois	0.025	0.007	Nov 2020	0.022	Nov 2021	0.009	Nov 2022	-		0.009	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC IH : Indian Head, MD	0.668	0.000		0.000		0.000		-		0.000	0.000	0.668	-
Systems Engineering	SS/FFP	Northrop Grumman : Baltimore, MD	0.391	0.000		0.000		0.000		-		0.000	0.000	0.391	-
Systems Engineering	C/FFP	DRS Power & Control Technologies, Inc. : Milwaukee, WI	0.214	0.000		0.000		0.000		-		0.000	0.000	0.214	-
Systems Engineering	C/CPIF	SPA : Washington, DC	2.208	0.516	Nov 2020	0.799	Nov 2021	0.820	Nov 2022	-		0.820	Continuing	Continuing	Continuing
Systems Engineering	WR	NSMA : Washington, DC	0.838	0.285	Nov 2020	0.285	Nov 2021	0.300	Nov 2022	-		0.300	Continuing	Continuing	Continuing
Systems Engineering	C/CPIF	BAH : Washington, DC	0.000	0.000		0.000		0.284	Nov 2022	-		0.284	Continuing	Continuing	Continuing
		Subtotal	62.083	6.328		13.705		19.542		-		19.542	Continuing	Continuing	N/A

Remarks

1) FY21 to FY22 increase primarily due to: 1) JHU/APL ramping up support related to performance analyses associated with ADR; and 2) Added requirement at NSWC Dahlgren for Hazards of Electromagnetic Radiation analysis for EASR.
2) FY22 to FY23 increase primarily due to NSWC Dahlgren standing up Software Product Support Integration laboratory for defect correction, software check out, and producing software builds.
3) Since PB22, FY21 Support was reduced to align with actual execution. All excess funding removed via SBIR assessment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	COMOPTEVFOR : Norfolk, VA	1.232	0.000		0.000		0.000		-		0.000	0.000	1.232	-
Test and Evaluation	MIPR	GTRI : Atlanta, GA	0.513	0.155	Jan 2021	0.381	Jan 2022	0.361	Jan 2023	-		0.361	Continuing	Continuing	Continuing
Test and Evaluation	SS/CPFF	JHU/APL : Laurel, MD	18.951	0.060	Nov 2020	0.081	Dec 2021	0.077	Nov 2022	-		0.077	Continuing	Continuing	Continuing
Test and Evaluation	MIPR	MIT : Cambridge, MD	0.311	0.000		0.000		0.000		-		0.000	0.000	0.311	-
Test and Evaluation	WR	NAWC WD : Pt. Mugu, CA	6.470	0.000		0.000		0.175	Nov 2022	-		0.175	Continuing	Continuing	Continuing
Test and Evaluation	WR	NRL : Washington, DC	4.361	1.116	Nov 2020	0.677	Nov 2021	0.641	Nov 2022	-		0.641	Continuing	Continuing	Continuing
Test and Evaluation	WR	NSWC/DD : Dahlgren, VA	5.922	0.115	Nov 2020	0.104	Oct 2021	0.915	Nov 2022	-		0.915	Continuing	Continuing	Continuing
Test and Evaluation	WR	NSWC/PHD : Port Hueneme, CA	7.341	0.896	Nov 2020	0.413	Oct 2021	1.222	Nov 2022	-		1.222	Continuing	Continuing	Continuing
Test and Evaluation	WR	PMRF : Kekaha, HI	11.866	1.368	Nov 2020	1.752	Nov 2021	1.659	Nov 2022	-		1.659	Continuing	Continuing	Continuing
Test and Evaluation	C/CPIF	SPA (Bridge) : Washington, DC	3.043	0.000		0.000		0.000		-		0.000	0.000	3.043	-
Test and Evaluation	WR	NSWC/PHD WS : Port Hueneme, CA	92.377	0.000		0.000		0.000		-		0.000	0.000	92.377	-
Test and Evaluation	WR	NSWC Corona : Corona, CA	5.247	0.539	Nov 2020	0.399	Oct 2021	1.038	Nov 2022	-		1.038	Continuing	Continuing	Continuing
Test and Evaluation	WR	CNA-ONR : Arlington, VA	0.157	0.000		0.000		0.000		-		0.000	0.000	0.157	-
Test and Evaluation	C/BA	MDA : Redstone Arsenal, AL	1.663	0.000		0.000		0.000		-		0.000	0.000	1.663	-
Test and Evaluation	C/CPIF	Engility : Andover, MA	0.561	0.078	Nov 2020	0.051	Dec 2021	0.000		-		0.000	0.000	0.690	-
Test and Evaluation	MIPR	DOI : Boise, ID	3.016	0.604	Nov 2020	0.000		0.890	Nov 2022	-		0.890	Continuing	Continuing	Continuing
Test and Evaluation	WR	NSWC Crane : Crane, IN	0.686	0.000		0.000		0.000		-		0.000	0.000	0.686	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	AFSEO : Eglin AFB, FL	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011	-
Test and Evaluation	WR	FRCE - PMA 226 : Cherry Point, NC	0.005	0.000		0.000		0.000		-		0.000	0.000	0.005	-
Test and Evaluation	WR	NUWC KP : Keyport, WA	0.367	0.000		0.000		0.000		-		0.000	0.000	0.367	-
Test and Evaluation	WR	COMNAVAIRPAC : San Diego, CA	0.119	0.125	Nov 2020	0.000		0.153	Nov 2022	-		0.153	Continuing	Continuing	Continuing
Test and Evaluation	WR	NSWC CD : Carderock, MD	1.051	0.000		0.000		0.000		-		0.000	0.000	1.051	-
Test and Evaluation	MIPR	AFRL : Kirtland AFB, NM	0.341	0.000		0.006	Feb 2022	0.000		-		0.000	0.000	0.347	-
Test and Evaluation	C/CPIF	SPA : Washington, DC	1.751	0.676	Nov 2020	0.649	Dec 2021	0.683	Nov 2022	-		0.683	Continuing	Continuing	Continuing
Test and Evaluation	MIPR	Civil Air Patrol : Montgomery, AL	0.011	0.013	Nov 2020	0.019	Jan 2022	0.018	Nov 2022	-		0.018	Continuing	Continuing	Continuing
Test and Evaluation	WR	NAWC WD TTSD : Pt. Mugu, CA	0.409	0.000		0.000		0.000		-		0.000	0.000	0.409	-
Test and Evaluation	WR	SCSC Wallops : Wallops Island, VA	0.000	0.330	Nov 2020	0.000		1.207	Nov 2022	-		1.207	Continuing	Continuing	Continuing
Test and Evaluation	WR	NAWCCL : Clear Lake, CA	0.000	0.432	Apr 2021	0.000		0.000		-		0.000	0.000	0.432	-
		Subtotal	167.782	6.507		4.532		9.039		-		9.039	Continuing	Continuing	N/A

Remarks

1) FY21 to FY22 decrease primarily due to less AN/SPY-6(V)1 testing in FY22
2) FY22 to FY23 increase primarily due to increased test site costs and range operations for AN/SPY-6(V)2/3 testing
3) Since PB22, FY21 Test and Evaluation decreased based on reduced funding needed for test assets (e.g., fewer flight hours and/or removing back up days from test schedule if unused). All excess funding removed via SBIR assessment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Management Services	C/CPIF	SPA (Bridge) : Washington, DC	5.119	0.000		0.000		0.000		-		0.000	0.000	5.119	-
Travel	Sub Allot	PEOIWS2 : Washington, DC	0.648	0.045	Jan 2021	0.092	Jan 2022	0.096	Jan 2023	-		0.096	Continuing	Continuing	Continuing
Support Management Services	WR	NSWC/DD : Dahlgren, VA	2.415	0.116	Nov 2020	0.103	Oct 2021	0.097	Nov 2022	-		0.097	Continuing	Continuing	Continuing
Support Management Services	C/CPFF	TMB-PSS : Washington, DC	0.394	0.041	Nov 2020	0.076	Feb 2022	0.080	Nov 2022	-		0.080	Continuing	Continuing	Continuing
Support Management Services	C/CPFF	CACI-PSS : Washington, DC	0.925	0.000		0.000		0.000		-		0.000	0.000	0.925	-
Support Management Services	C/CPFF	STRATEGIC INSIGHT : Arlington, VA	0.184	0.020	Dec 2020	0.021	Dec 2021	0.022	Dec 2022	-		0.022	Continuing	Continuing	Continuing
Support Management Services	C/CPIF	UNC : Chapel Hill, NC	0.106	0.000		0.000		0.000		-		0.000	0.000	0.106	-
Support Management Services	WR	NSWC/CD : Carderock, MD	0.076	0.000		0.000		0.000		-		0.000	0.000	0.076	-
Support Management Services	C/CPIF	SPA : Washington, DC	0.632	0.151	Nov 2020	0.951	Nov 2021	1.206	Nov 2022	-		1.206	Continuing	Continuing	Continuing
Support Management Services	C/CPFF	BAH-PSS : Washington, DC	0.000	0.000		0.270	Dec 2021	0.000		-		0.000	0.000	0.270	-
		Subtotal	10.499	0.373		1.513		1.501		-		1.501	Continuing	Continuing	N/A

Remarks

1) FY21 to FY22 increase is commensurate with ramp up of technical efforts. FY22 funding provides additional staff to assist with oversight and management.

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	607.115	59.561		87.364		87.459		-		87.459	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
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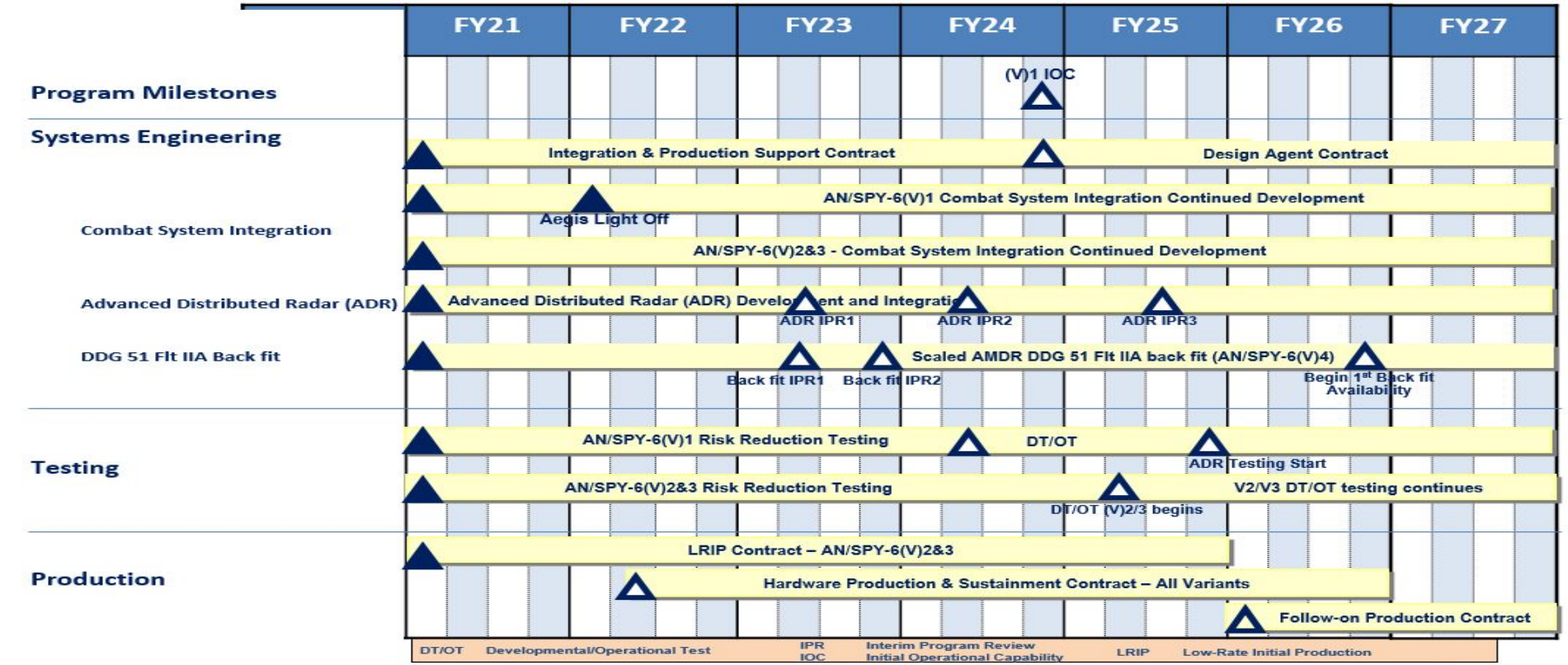

NOTE: Production contract timelines reflect when options are exercised; actual production may extend beyond the end of each bar.

Changes:
- Removed V2/V3 IOC; dates are being adjusted to align with enterprise test schedule
- ALO completed ahead of schedule; moved from Q2FY22 to Q1FY22
- ADR IPRs 1 and 2 re-phased to the right and added IPR3 in FY25
- Added Back fit IPRs 1 and 2 in FY23 and back fit installation in FY26
- Combined V2/V3 DT/OT start date and reflect fact testing extends out into FY28
- Changed HP&S contract award from Q4FY21 to Q2FY22
- Added Follow-on production contract starting in FY26

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3186				
Integration and Production Support Contract	1	2021	4	2024
AN/SPY-6(V)1 Combat System Integration Continued Development	1	2021	4	2027
AN/SPY-6(V)1 Risk Reduction Testing	1	2021	2	2024
Advanced Distributed Radar (ADR) Development and Integration	1	2021	4	2027
AN/SPY-6(V)2&3 Risk Reduction Testing	1	2021	4	2027
LRIP Contract - AN/SPY-6(V)2&3	1	2021	4	2025
AN/SPY-6(V) 2&3 Combat System Integration Continued Development	1	2021	4	2027
Scaled AMDR DDG51 FLT IIA Backfit (AN/SPY-6(V)4)	1	2021	4	2027
Hardware Production and Sustainment Contract	2	2022	4	2026
DDG125 Aegis Light off	1	2022	1	2022
ADR IPR 1	2	2023	2	2023
Back Fit IPR 1	2	2023	2	2023
Back Fit IPR 2	4	2023	4	2023
ADR IPR 2	2	2024	2	2024
AN/SPY-6(V)1 DT/OT	2	2024	4	2027
V1 IOC	4	2024	4	2024
Design Agent Contract	4	2024	4	2027
DT/OT V2/V3	2	2025	4	2027
ADR IPR 3	3	2025	3	2025
Follow-on Production Contract	1	2026	4	2027
Begin 1st Backfit Installation	4	2026	4	2027