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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy **Date:** March 2023

| | |
|---|--|
| Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i> | R-1 Program Element (Number/Name) PE 0207163N / AMRAAM |
|---|--|

| COST (\$ in Millions) | Prior Years | FY 2022 | FY 2023 | FY 2024 Base | FY 2024 OCO | FY 2024 Total | FY 2025 | FY 2026 | FY 2027 | FY 2028 | Cost To Complete | Total Cost |
|-----------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element | 323.023 | 31.776 | 30.898 | 29.198 | - | 29.198 | 29.795 | 27.663 | 27.023 | 27.570 | 84.591 | 611.537 |
| 0981: AMRAAM | 323.023 | 31.776 | 30.898 | 29.198 | - | 29.198 | 29.795 | 27.663 | 27.023 | 27.570 | 84.591 | 611.537 |

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 185

A. Mission Description and Budget Item Justification

The Advanced Medium Range Air-to-Air Missile (AMRAAM) is a joint Air Force/Navy, Acquisition Category 1D program with Air Force as lead service. AMRAAM is the premier all-weather, all-environment, radar guided missile with improved capabilities against very low and high-altitude targets in an electronic attack environment. The current AMRAAM variant, the AIM-120D, delivers improved performance via Global Positioning System (GPS) aided navigation; two way datalink capability for enhanced aircrew survivability and improved network compatibility; and incorporates new guidance software that improves kinematic performance and weapon effectiveness.

This Air Force/Navy program is structured in response to the Joint Service Operational Requirement Document and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. The development program enhances AMRAAM capability and operational flexibility against current and projected threats, incorporates high payoff technology development, performs risk reduction activities, and investigates new variants and/or alternate missions that may use AMRAAM attributes. To maximize effectiveness of existing inventory and address findings from the field, the Navy and Air Force also develop, test, and field improvements via software upgrades into fielded missiles, and/or hardware upgrades inserted into the production line.

This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks. Funding in FY 2024 through FY 2028 supports System Improvement Program (SIP) and Navy unique Test & Evaluation (T&E) for software fielding.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

Cost to Complete should be \$85.893M for FY 2029 - FY 2031.

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| B. Program Change Summary (\$ in Millions) | FY 2022 | FY 2023 | FY 2024 Base | FY 2024 OCO | FY 2024 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 32.564 | 30.898 | 31.786 | - | 31.786 |
| Current President's Budget | 31.776 | 30.898 | 29.198 | - | 29.198 |
| Total Adjustments | -0.788 | 0.000 | -2.588 | - | -2.588 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -0.788 | 0.000 | | | |
| • Program Adjustments | 0.000 | 0.000 | -2.707 | - | -2.707 |
| • Rate/Misc Adjustments | 0.000 | 0.000 | 0.119 | - | 0.119 |

Change Summary Explanation

Financial: The FY 2024 funding request was adjusted by \$2.588M for higher priority programs and rate adjustments.

Technical: Not Applicable

Schedule: Counter Emerging Threats (CET) fielding shifted from 3Q FY 2022 to 1Q FY 2023 due to repair required for test equipment failure. All CET test requirements are complete and fielding will coincide with the Sufficiency of Test Review release in 1Q FY 2023.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy **Date:** March 2023

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| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0207163N / AMRAAM | Project (Number/Name) 0981 / AMRAAM |
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| COST (\$ in Millions) | Prior Years | FY 2022 | FY 2023 | FY 2024 Base | FY 2024 OCO | FY 2024 Total | FY 2025 | FY 2026 | FY 2027 | FY 2028 | Cost To Complete | Total Cost |
|----------------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| 0981: AMRAAM | 323.023 | 31.776 | 30.898 | 29.198 | - | 29.198 | 29.795 | 27.663 | 27.023 | 27.570 | 84.591 | 611.537 |
| Quantity of RDT&E Articles | | - | - | - | - | - | - | - | - | - | | |

Project MDAP/MAIS Code: 185

A. Mission Description and Budget Item Justification

This Air Force/Navy program is structured in response to the Joint Service Operational Requirement Document and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of AMRAAM into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks. Funding in FY 2024 through FY 2028 supports System Improvement Program (SIP) and Navy unique Test & Evaluation (T&E) for software fielding.

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

| | FY 2022 | FY 2023 | FY 2024 Base | FY 2024 OCO | FY 2024 Total |
|---|---------|---------|--------------|-------------|---------------|
| <p>Title: Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: Test and Evaluation and associated government support required to ensure AIM-120 missile integration with Department of the Navy aircraft platforms (F/A-18 C/D/E/F/G, AV-8B and F-35), hardware-in-the-loop facility operations.</p> <p>FY 2023 Plans: Continue to develop and procure test resources required to meet test requirements and provide support personnel to complete AIM-120 Developmental Test (DT) and Operational Test (OT) events. Complete efforts to address 5th generation aerial target emulation.</p> <p>FY 2024 Base Plans: Continue to develop and procure test resources required to meet test requirements and provide support personnel to complete AIM-120 DT and OT events. Continue hardware-in-the-loop facility operations.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 funding request increased by \$0.330M due to additional test requirements.</p> | 11.296 | 9.847 | 10.177 | 0.000 | 10.177 |
| Articles: | - | - | - | - | - |
| <p>Title: System Improvement Program (SIP) Efforts</p> <p align="right">Articles:</p> | 20.480 | 21.051 | 19.021 | 0.000 | 19.021 |
| Articles: | - | - | - | - | - |

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| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0207163N / AMRAAM | Project (Number/Name) 0981 / AMRAAM |

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

| | FY 2022 | FY 2023 | FY 2024 Base | FY 2024 OCO | FY 2024 Total |
|---|---------|---------|--------------|-------------|---------------|
| <p>Description: Continuation SIP Risk Reduction efforts for the AMRAAM weapons system. Efforts include systems engineering, program management, missile software and/or hardware upgrades to increase capability, survivability, lethality, as well as aircraft Operational Flight Profile updates on a recurring basis. SIP-3F will host AIM-120D SIP-3 software on AIM-120D3 hardware. AIM-120D3 SIP-4 will exploit new Form, Fit, Function Refresh (F3R) hardware to maximize missile performance. AIM-120D SIP 3 Tape 2 will address newly matured capabilities, emerging threats, and OT deficiencies. AIM-120D3 SIP-5 will increase heart of the envelope performance and address an expanded threat space. Candidate Selection Process (CSP) analyzes warfighter priority deficiencies and enhancements to feed risk reduction efforts and future SIP efforts.</p> <p>FY 2023 Plans: Complete SIP-3F Functional Configuration Audit and flight test requirements. Field SIP-3F with F3R hardware to maximize missile performance. Continue CSP. Continue SIP-4 software development and complete Minimum Viable Product (MVP) milestone demonstrating software maturity. Continue SIP-3 Tape 2 software development.</p> <p>FY 2024 Base Plans: Continue CSP. Complete SIP-4 software development with Minimum Viability Capability Release (MVCR) and enter integrated test. Complete SIP-3 Tape 2 software development with MVCR and enter integrated test. Begin SIP-5 software development.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 funding request decreased by \$2.030M due to re-phase of SIP-4 requirements.</p> | | | | | |
| Accomplishments/Planned Programs Subtotals | 31.776 | 30.898 | 29.198 | 0.000 | 29.198 |

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

| Line Item | FY 2022 | FY 2023 | FY 2024 | FY 2024 | FY 2024 | FY 2025 | FY 2026 | FY 2027 | FY 2028 | Cost To | |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|------------|
| | | | Base | OCO | Total | | | | | Complete | Total Cost |
| • WPN/ 2206: AMRAAM | 74.264 | 335.900 | 439.153 | - | 439.153 | 279.715 | 69.591 | 69.699 | 17.109 | 0.000 | 4,616.460 |
| • MPAF/3479: AMRAAM | 214.002 | 320.560 | 231.473 | - | 231.473 | 330.822 | 462.367 | 306.098 | 75.220 | 1,040.926 | 13,549.277 |
| • RDTE,AF/673777: AMRAAM | 51.288 | 52.704 | 33.557 | - | 33.557 | 53.724 | 51.403 | 52.547 | 54.386 | 380.611 | 1,493.275 |

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy **Date:** March 2023

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| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0207163N / <i>AMRAAM</i> | Project (Number/Name) 0981 / <i>AMRAAM</i> |
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D. Acquisition Strategy

AMRAAM production procurements will continue across the Future Years Defense Program with periodic pre-planned technical design refreshes and value engineering change proposals.

AMRAAM's Acquisition Program Baseline was updated on 28 Oct 2015.

AMRAAM's Acquisition Strategy Report was updated 16 May 2018.

SIP development efforts continually mature capabilities through software and/or hardware upgrades to maximize missile performance to address current and emerging threats. These missile performance improvements are incrementally fielded ensuring inventory viability into the future. SIP development contracts are cost type efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy **Date:** March 2023

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| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0207163N / AMRAAM | Project (Number/Name) 0981 / AMRAAM |
|--|--|---|

| Product Development (\$ in Millions) | | | | FY 2022 | | FY 2023 | | FY 2024 Base | | FY 2024 OCO | | FY 2024 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Primary Hdw Development (EGLIN) | SS/CPAF | RAYTHEON COMPANY : Tucson AZ | 148.765 | 17.272 | Jan 2022 | 17.749 | Jan 2023 | 16.022 | Jan 2024 | - | | 16.022 | 115.013 | 314.821 | 314.839 |
| Award Fees (EGLIN) | SS/CPAF | RAYTHEON COMPANY : Tucson AZ | 24.757 | 3.048 | Jan 2022 | 3.132 | Jan 2023 | 2.827 | Jan 2024 | - | | 2.827 | 20.296 | 54.060 | 54.064 |
| Primary Hdw Development (NAWCAD) | WR | NAWCAD : Patuxent River MD | 5.436 | 0.100 | Nov 2021 | 0.102 | Nov 2022 | 0.106 | Nov 2023 | - | | 0.106 | 0.798 | 6.542 | - |
| Prior Years Dev Cost no longer funded in the FYDP | Various | Various : Various | 32.477 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 32.477 | - |
| Subtotal | | | 211.435 | 20.420 | | 20.983 | | 18.955 | | - | | 18.955 | 136.107 | 407.900 | N/A |

| Support (\$ in Millions) | | | | FY 2022 | | FY 2023 | | FY 2024 Base | | FY 2024 OCO | | FY 2024 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Prior Years Support costs no longer funded in the FYDP | Various | Various : Various | 23.795 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 23.795 | - |
| Subtotal | | | 23.795 | 0.000 | | 0.000 | | 0.000 | | - | | 0.000 | 0.000 | 23.795 | N/A |

| Test and Evaluation (\$ in Millions) | | | | FY 2022 | | FY 2023 | | FY 2024 Base | | FY 2024 OCO | | FY 2024 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Developmental Test & Evaluation (DT&E) | WR | NAWCWD : China Lake CA | 73.375 | 10.678 | Nov 2021 | 8.673 | Nov 2022 | 8.935 | Nov 2023 | - | | 8.935 | 51.952 | 153.613 | - |
| Operational Test & Evaluation (OT&E) | WR | COMOPTEVFOR : Norfolk, VA | 5.518 | 0.618 | Mar 2022 | 1.174 | Mar 2023 | 1.242 | Mar 2024 | - | | 1.242 | 9.447 | 17.999 | - |
| Subtotal | | | 78.893 | 11.296 | | 9.847 | | 10.177 | | - | | 10.177 | 61.399 | 171.612 | N/A |

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

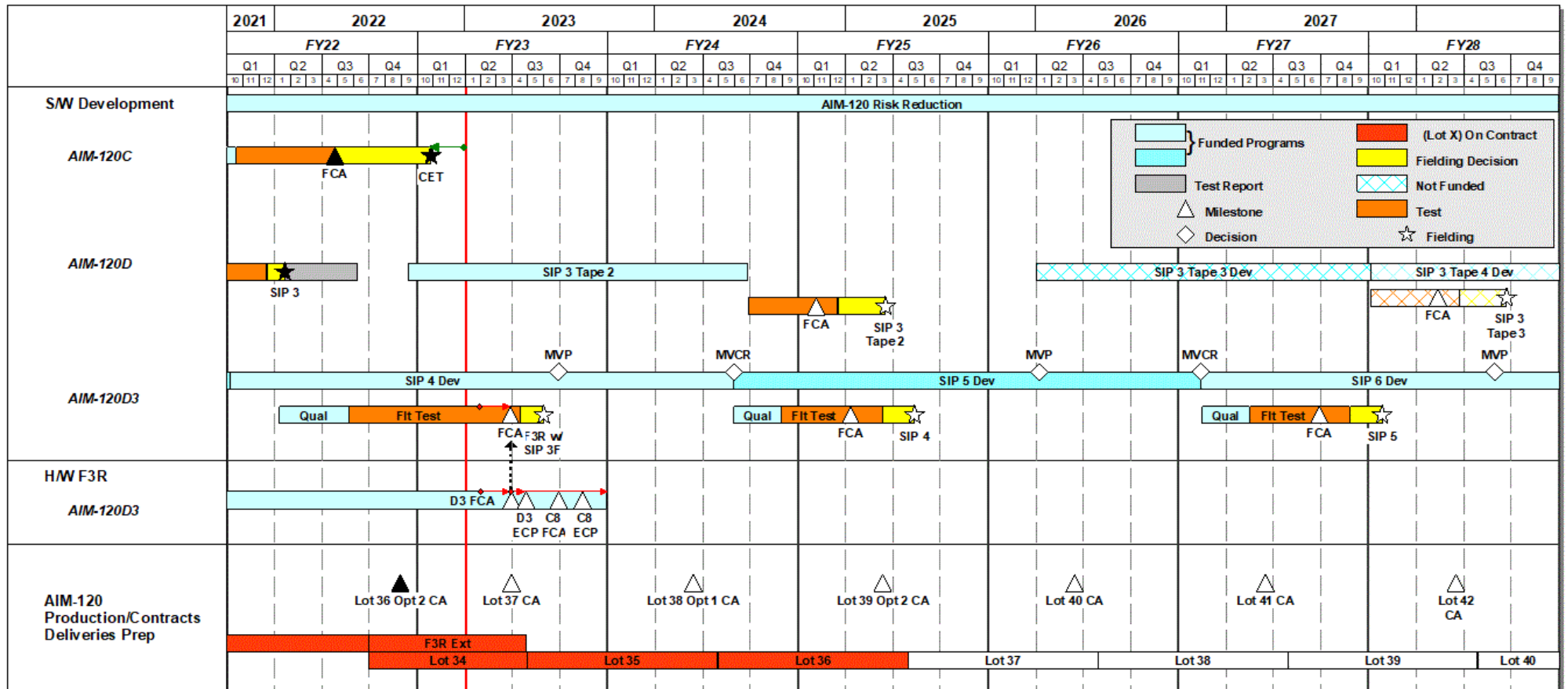
Date: March 2023

Appropriation/Budget Activity
1319 / 7

R-1 Program Element (Number/Name)
PE 0207163N / AMRAAM

Project (Number/Name)
0981 / AMRAAM

AMRAAM Program Schedule



Agile Terminology IAW DODI 5000.02: MVP = Minimum Viable Product
MVCR = Minimum Viable Capability Release

Baseline: 1 Oct 2022
Approved: 1 Jan 2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

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| Appropriation/Budget Activity 1319 / 7 | R-1 Program Element (Number/Name) PE 0207163N / AMRAAM | Project (Number/Name) 0981 / AMRAAM |
|--|--|---|

Schedule Details

| Events by Sub Project | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| AMRAAM | | | | |
| Acquisition Milestones: Milestones: CET FCA | 3 | 2022 | 3 | 2022 |
| Acquisition Milestones: Milestones: CET Fielding | 1 | 2023 | 1 | 2023 |
| Acquisition Milestones: Milestones: SIP3F AIM-120D3 FCA | 2 | 2023 | 2 | 2023 |
| Acquisition Milestones: Milestones: SIP3F AIM-120D3 Fielding | 3 | 2023 | 3 | 2023 |
| Acquisition Milestones: Milestones: SIP 3 Tape 2 FCA | 1 | 2025 | 1 | 2025 |
| Acquisition Milestones: Milestones: SIP 3 Tape 2 Fielding | 2 | 2025 | 2 | 2025 |
| Acquisition Milestones: Milestones: SIP 4 FCA | 2 | 2025 | 2 | 2025 |
| Acquisition Milestones: Milestones: SIP 4 Fielding | 3 | 2025 | 3 | 2025 |
| Systems Development: Software Development: SIP-3F Development | 1 | 2022 | 3 | 2023 |
| Systems Development: Software Development: CET Development | 1 | 2022 | 1 | 2023 |
| Systems Development: Software Development: SIP-4 Development | 1 | 2022 | 3 | 2025 |
| Systems Development: Software Development: SIP 3 Tape 2 Development | 4 | 2022 | 1 | 2025 |
| Systems Development: Software Development: SIP-5 Development | 3 | 2024 | 4 | 2027 |
| Test and Evaluation: SIP 3F | 2 | 2022 | 3 | 2023 |
| Test and Evaluation: CET | 1 | 2022 | 4 | 2022 |
| Test and Evaluation: SIP-4 | 3 | 2024 | 3 | 2025 |
| Test and Evaluation: SIP 3 Tape 2 | 4 | 2024 | 1 | 2025 |
| Test and Evaluation: SIP 5 | 1 | 2027 | 4 | 2027 |
| Production Contract Awards: Production Lot 36 Contract Award | 4 | 2022 | 4 | 2022 |
| Production Contract Awards: Production Lot 37 Contract Award | 3 | 2023 | 3 | 2023 |
| Production Contract Awards: Production Lot 38 Contract Award | 2 | 2024 | 2 | 2024 |
| Production Contract Awards: Production Lot 39 Contract Award | 2 | 2025 | 2 | 2025 |

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

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|--|--|---|

| Events by Sub Project | Start | | End | |
|--|----------------|-------------|----------------|-------------|
| | Quarter | Year | Quarter | Year |
| Production Contract Awards: Production Lot 40 Contract Award | 2 | 2026 | 2 | 2026 |
| Production Contract Awards: Production Lot 41 Contract Award | 2 | 2027 | 2 | 2027 |
| Production Contract Awards: Production Lot 42 Contract Award | 2 | 2028 | 2 | 2028 |
| Production Deliveries: Production Lot 33 AUR | 1 | 2022 | 2 | 2023 |
| Production Deliveries: Production Lot 34 AUR | 4 | 2022 | 3 | 2023 |
| Production Deliveries: Production Lot 34 CATM | 4 | 2022 | 3 | 2023 |
| Production Deliveries: Production Lot 35 AUR | 3 | 2023 | 3 | 2024 |
| Production Deliveries: Production Lot 35 CATM | 3 | 2023 | 3 | 2024 |
| Production Deliveries: Production Lot 36 AUR | 3 | 2024 | 3 | 2025 |
| Production Deliveries: Production Lot 37 AUR | 3 | 2025 | 3 | 2026 |
| Production Deliveries: Production Lot 38 AUR | 3 | 2026 | 3 | 2027 |
| Production Deliveries: Production Lot 39 AUR | 3 | 2027 | 3 | 2028 |
| Production Deliveries: Production Lot 40 AUR | 3 | 2028 | 4 | 2028 |