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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 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>
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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
Total Program Element	195.552	20.271	50.282	42.155	-	42.155	10.216	7.850	7.696	7.862	Continuing	Continuing
0606: <i>Aircrew System Development</i>	190.747	17.212	35.802	34.327	-	34.327	3.258	2.448	2.453	2.513	Continuing	Continuing
9099: <i>Physiological Episodes</i>	4.805	3.059	7.480	7.828	-	7.828	6.958	5.402	5.243	5.349	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	0.000	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.000

A. Mission Description and Budget Item Justification

The Aircrew Systems Development program provides Engineering and Manufacturing Development of Aviation Life Support Systems to protect aircrew and flight deck personnel from current and future threats including: directed energy weapons, chemical/biological/radiological agents/fallout, ballistic projectiles, temperature extremes, heat/fire, low concentration oxygen environments, high dynamic forces during emergency egress, hearing loss, and high "G" forces. The program also provides development for the following capabilities: night vision capability, hearing and head protection, aircrew endurance, aircrew performance, man mounted data display, communications, clothing, in flight restraint and stability, emergency egress and descent, escape and evasion, survival and rescue, crash protection, and anthropometric sizing for small aircrew. Acquisition initiatives include: competition, the application of streamlining initiatives, use of non-developmental items, joint and tri-service developments, and the pursuit of NATO/allied cooperative ventures, which expedite introduction of new products into Navy and Marine Corps fixed and rotary wing aircraft, reduce costs, and promote commonality.

Physiological Monitoring: This program provides funding to assure pilot performance integrity by developing and fielding a system that monitors pilot physiological parameters and warns of state of health or performance degradation that may result in loss of consciousness or the ability to safely conduct flight. There are several solutions undergoing evaluation.

Helmet Mask Regulator (HMR): The Physiological Episode (PE) Root Cause & Corrective Action (RCCA) determined that an improved mask/regulator system was required to mitigate PE. This program determines what improvements are needed and develops the material solution.

JUSTIFICATION FOR BUDGET ACTIVITY:

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

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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	20.746	43.282	25.647	-	25.647
Current President's Budget	20.271	50.282	42.155	-	42.155
Total Adjustments	-0.475	7.000	16.508	-	16.508
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	7.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.475	0.000			
• Program Adjustments	0.000	0.000	16.430	-	16.430
• Rate/Misc Adjustments	0.000	0.000	0.078	-	0.078

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

Project: 9999: *Congressional Adds*

Congressional Add: *Aircrew systems development*

	FY 2022	FY 2023
	0.000	7.000
Congressional Add Subtotals for Project: 9999	0.000	7.000
Congressional Add Totals for all Projects	0.000	7.000

Change Summary Explanation

The "AIRCRAFT SYSTEMS" R-2 category on the 2023 President's Budget submission has been renamed "SAFETY AND SURVIVAL SYSTEMS" to more precisely describe the work being performed. State of the Art (SOA) efforts previously categorized under both "AIRCREW SYSTEMS" and "AIRCRAFT SYSTEMS" have been realigned to this new "SAFETY AND SURVIVAL SYSTEMS" category in order to document these efforts more accurately.

Funding:

FY24 funding increase from the previous President's Budget Submission of \$16.508M includes Department-approved realignment of Enhanced Visual Acuity (EVA) procurement funds to RDTE,N to continue technology maturation of the Micro-LED and support procurement starting in FY25 as well as addition of Aircrew Safety Improvement Program (ASIP) funding providing agile development and qualification in response to high-priority, near-term aircrew systems deficiencies and capability gaps to address critical safety and performance issues.

Schedule:

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<p>1. Enhanced Visual Acuity (EVA) CDR has been delayed from Q4FY22 to Q4FY23 due to redesign of the Electronic Assembly (EA) to meet temperature specifications. IOC has also been delayed from Q2FY26 to Q4FY26 due to technical maturity of the Micro-LED. The following schedule changes were made based on time required for resolution of issues identified during Preliminary Design Review (PDR) and delays in achieving required technical maturity:</p> <ul style="list-style-type: none"> -EVA Milestone C moved from Q4FY24 to Q2FY25 -EVA IOC moved from Q2FY26 to Q4FY26 -EVA FRP DR moved from Q3FY26 to Q1FY27 -EVA EMD Phase moved from Q1FY21 through Q4FY24 to Q1FY21 through Q2FY25 -EVA Design and Development contract moved from Q1FY21 through Q4FY24 to Q1FY22 through Q2FY25 -EVA CDR moved from Q4FY22 to Q4FY23 -EVA TRR moved from Q1FY24 to Q4FY24 -EVA SVR/PRR moved from Q3FY24 to Q1FY25 -EVA OTRR moved from Q4FY24 to Q2FY25 -EVA PCA moved from Q4FY25 to Q3FY26 -EVA DT-B1 moved from Q2FY23 through Q4FY23 to Q2FY23 through Q4FY24 -EVA IT-B2 moved from Q1FY24 through Q3FY24 to Q4FY24 through Q1FY25 -EVA IT-C2 moved from Q3FY26 through Q4FY26 to Q1FY27 through Q3FY27 -EVA IT-C3 moved from Q2FY27 through Q3FY27 to Q3FY28 through Q4FY28 -EVA OT-C1 moved from Q2FY25 through Q4FY25 to Q2FY25 through Q2FY26 -EVA LRIP 1 Award moved from Q4FY24 to Q3FY25 -EVA LRIP 2 Award moved from Q1FY26 to Q3FY26 -EVA FRP Award moved from Q1FY27 to Q3FY27 -EVA EDM (QTY 8) Delivery moved from Q2FY23 through Q3FY23 to Q1FY24 through Q2FY24 -EVA EDM (QTY 4) Delivery moved from Q2FY24 to Q1FY25 -EVA LRIP 1 Delivery moved from Q1FY26 through Q1FY27 to Q3FY26 through Q2FY27 -EVA LRIP 2 Delivery moved from Q1FY27 through Q4FY27 to Q3FY27 through Q3FY28 <p>2. Accelerated developmental efforts under the MH-60R/S Head & Neck Injury Mitigation (HNIM) program allowed for an expedited delivery of test units, but also necessitated a change to contracting strategy that will result in a later Design and Development Contract award. The following major changes were made accordingly:</p> <ul style="list-style-type: none"> -HNIM Test Units Delivery moved from Q4FY23 to Q1FY23 -HNIM Design and Development Contract Award moved from Q1FY23 to Q4FY23 <p>3. The following major changes were made to the Improved Joint Helmet Mounted Cueing System (IJHMCS) program based on refinement of requirements leading to changes in the acquisition strategy:</p> <ul style="list-style-type: none"> -IJHMCS Milestone B moved from Q1FY24 to Q3FY23 		

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

Appropriation/Budget Activity	R-1 Program Element (Number/Name)
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	PE 0604264N / Air Crew Systems Development

- IJHMCS RFP Release moved from Q3FY22 to Q1FY23
- IJHMCS EMD Phase moved from Q1FY24 through Q1FY26 to Q3FY23 through Q4FY25
- IJHMCS FRPDR moved from Q2FY27 to Q3FY26
- IJHMCS FRP 1 Award moved from Q2FY27 to Q3FY26
- IJHMCS FRP 1 POP moved from Q2FY27 through Q4FY28 to Q3FY26 through Q4FY28
- IJHMCS Kickoff moved from Q1FY23 to Q3FY23
- IJHMCS System Design/Development & Aircraft Integration Award moved from Q1FY24 to Q3FY23

Technical:
Not Applicable

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 0606 / Aircrew System Development			
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
0606: Aircrew System Development	190.747	17.212	35.802	34.327	-	34.327	3.258	2.448	2.453	2.513	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AIRCREW SYSTEMS: Aircrew Systems include Enhanced Visual Acuity (EVA), MH-60R/S Head and Neck Injury Mitigation (HNIM), Improved Joint Helmet Mounted Cueing System (IJHMCS), and Next Generation Survival Radio (NGSR). EVA provides advanced day/night vision/Head Up Display (HUD) capability to address critical capability gaps in low and no light illumination levels (night vision). EVA will be integrated on current aircraft through a common interface allowing an incremental, modular approach to fielding full capability and future upgrades. Future increments will provide enhanced aircrew situational awareness in degraded visual environments. HNIM will leverage work conducted during the Gunner Seat replacement program to reduce aircraft vibrations through incorporation of active and passive vibration damping into MH-60 R/S cockpit seats to reduce fatigue and enhance mission endurance. IJHMCS (previously identified as "JHMCS" on the 2023 President's Budget submission) will integrate onto the Lift or GENTEX helmet solutions, which were down-selected by the US Air Force Next-Generation Fixed Wing Helmet (NGFWH) program. IJHMCS will mitigate aircrew back and neck strain/fatigue and replace the JHMCS Helmet Mounted Day Display and Night Vision Cueing Device (NVCD) with a single day/night, digital color-capable helmet-mounted display. NGSR will address communication security (COMSEC) modernization directives and current obsolescence issues, providing a secure two-way Beyond Line-of-Sight (BLOS) communications capability between isolated personnel and rescue coordination and recovery forces. The RW/TR Aircrew Vest Program provides for an improved RW/TR Aircrew Survival Vest for MH-60S, MH-60R, CH-53E, and CMV-22 aircrew to address safety and performance issues with the currently fielded solution.

SAFETY AND SURVIVAL SYSTEMS: Safety and Survival Systems include Aircrew Safety Improvement Program (ASIP, FY24 start) and State of the Art (SOA). ASIP provides agile response to high-priority, near-term aircrew systems deficiencies and capability gaps to address critical safety and performance issues. SOA provides for the yearly evaluation of survival systems, addresses capability gaps, and executes developmental efforts to increase endurance, safety, and survivability. SOA also rapidly qualifies Commercial Off-the-Shelf (COTS) and non-developmental items (NDI) as solutions to enhance safety and survivability. This R-2 category was previously known as "AIRCRAFT SYSTEMS" on the 2023 President's Budget submission, but has been renamed to more precisely describe work being performed. SOA efforts previously categorized under "AIRCREW SYSTEMS" have been re-aligned to "SAFETY AND SURVIVAL SYSTEMS" to document these efforts more accurately.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Aircrew System Development	11.850	32.801	30.726	0.000	30.726
Articles:	-	-	-	-	-
Description: Aircrew Systems include Enhanced Visual Acuity (EVA), MH-60R/S Head and Neck Injury Mitigation (HNIM), Improved JHMCS (IJHMCS), and Next Generation Survival Radio (NGSR).					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 0606 / <i>Aircrew System Development</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p><i>FY 2023 Plans:</i> Enhanced Visual Acuity (EVA): Deliver four Engineering Mass Models for crash load testing. MH-60R/S Head and Neck Injury Mitigation (HNIM): Begin development and engineering of vibration-damping into cockpit seats on MH-60R/S leveraging prior work conducted on Gunner Seat replacement program to reduce fatigue and enhance mission endurance. Improved Joint Helmet Mounted Cueing System (IJHMCS): Complete Milestone B, award EMD contract, and begin development efforts for IJHMCS to mitigate aircrew back and neck strain/fatigue for F/A-18 E/F and EA-18G platforms. Next Generation Survival Radio (NGSR): Begin development and design to modify, test, qualify, and field NGSR in order to ensure secure two-way Beyond Line-of-Sight (BLOS) communications capability between isolated personnel and rescue coordination and recovery forces.</p> <p><i>FY 2024 Base Plans:</i> Enhanced Visual Acuity (EVA): Deliver eight Engineering Development Models, conduct Developmental Testing DT-B1, and hold Technology Readiness Review and Flight Readiness Review. MH-60R/S Head and Neck Injury Mitigation (HNIM): Complete Critical Design Review (CDR) and Technical Readiness Review (TRR). Continue development to modify, test, qualify and field vibration-damping systems for the cockpit seats on the MH-60R/S. Improved Joint Helmet Mounted Cueing System (IJHMCS): Complete CDR, take delivery of Mass Models and Engineering Development Models, and begin developmental testing. Next Generation Survival Radio (NGSR): Continue development and design to modify, test, qualify, and field NGSR in order to ensure secure two-way Beyond Line-of-Sight (BLOS) communications capability between isolated personnel and rescue coordination and recovery forces. RW/TR Aircrew Vest Program: Continue to develop improvements to Survival Vest System.</p> <p><i>FY 2024 OCO Plans:</i> N/A</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease from FY23 to FY24 reflects planned acquisition life cycles for NGSR and EVA programs.</p> <p><i>Title:</i> Safety and Survival Systems</p>					
Articles:	5.362	3.001	3.601	0.000	3.601
	-	-	-	-	-

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development

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: Safety and Survival Systems includes ASIP and SOA.</p> <p>FY 2023 Plans: State of the Art (SOA): Continue to enhance safety and survivability by providing for technology pacing through continuing evaluation of survival items, clothing, and other aircrew systems in order to fill capability gaps and increase aircrew safety, endurance, and performance. Aircrew Safety Improvement Program (ASIP): Continue to provide for response to high-priority, near-term aircrew systems deficiencies and capability gaps to address safety and performance issues.</p> <p>FY 2024 Base Plans: State of the Art (SOA): Continue to enhance aircrew safety and survivability by monitoring Commercial Off-the-Shelf (COTS) and Non-Developmental Items (NDI) technology and solution improvements that afford superior protection to legacy products in areas of survival gear, clothing and mission performance equipment. Selection and qualification of SOA candidates will be prioritized according to latest Fleet operator demand signals. Aircrew Safety Improvement Program (ASIP): Continue to provide development and qualification in response to high-priority, near-term aircrew systems deficiencies and capability gaps to address critical safety and performance issues.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY23 to FY24 reflects addition of Department-approved funding provided to support ASIP efforts.</p>					
Accomplishments/Planned Programs Subtotals	17.212	35.802	34.327	0.000	34.327

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• OPN/4268: Aviation Life Support	34.451	41.564	36.046	-	36.046	68.894	80.652	82.260	76.424	Continuing	Continuing
• APN/0575: Aviation Life Support Mods	2.416	1.143	0.000	-	0.000	9.793	11.607	12.140	8.570	Continuing	Continuing

Remarks
Note: Aviation Life Support is only a portion of OPN Line Item 4268.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 0606 / <i>Aircrew System Development</i>

D. Acquisition Strategy

Leverage Commercial-Off-The-Shelf/Non-Developmental Items where possible. Full and open competition, utilizing negotiated best value procedures, was utilized for the EVA engineering, development and manufacturing contract. Due to the technical complexity and uncertainty associated with design and development, EVA is utilizing a cost plus fixed fee contract.

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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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			
Systems Eng EVA	C/CPFF	NAVAIR : Patuxent River, MD	11.600	8.712	Nov 2021	10.869	Nov 2022	12.681	Nov 2023	-		12.681	Continuing	Continuing	Continuing
Systems Eng EVA	WR	NAWCAD : Patuxent River, MD	28.304	3.088	Nov 2021	1.965	Nov 2022	2.734	Nov 2023	-		2.734	Continuing	Continuing	Continuing
Systems Eng HNIM	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.650	Nov 2022	2.800	Nov 2023	-		2.800	0.400	4.850	-
Systems Eng IJHMCS	C/CPFF	TBD : TBD	0.000	0.000		8.643	May 2023	4.400	Dec 2023	-		4.400	0.000	13.043	-
Systems Eng IJHMCS	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.157	Nov 2022	1.500	Nov 2023	-		1.500	0.000	2.657	-
Systems Eng NGSR	C/CPFF	TBD : TBD	0.000	0.000		8.000	Nov 2022	3.000	Nov 2023	-		3.000	0.000	11.000	-
Systems Eng ASIP	WR	Various : Various	0.000	0.000		0.000		1.170	Nov 2023	-		1.170	Continuing	Continuing	Continuing
Systems Eng SOA	WR	Various : Various	71.047	4.862	Dec 2021	2.501	Dec 2022	1.688	Dec 2023	-		1.688	Continuing	Continuing	Continuing
Systems Eng Vest Program	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		1.053	Nov 2023	-		1.053	0.000	1.053	-
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	65.647	0.000		0.000		0.000		-		0.000	0.000	65.647	-
Subtotal			176.598	16.662		34.785		31.026		-		31.026	Continuing	Continuing	N/A

Remarks

- Increase of \$1.812M from FY23 to FY24 under Systems Eng EVA (C/CPFF) is due to increased engineering requirements in preparation for Milestone C decision.
- Increase of \$1.15M from FY23 to FY24 under Systems Eng HNIM (G/WR) is due to increased engineering requirements in preparation for Milestone C decision.
- Decrease from FY23 to FY24 under Systems Eng IJHMCS (C/CPFF) is due to transition out of the design/development phase into the government qualification phase of EMD.
- Decrease of \$5M under Systems Eng NGSR (TBD) reflects planned acquisition life cycles for that program and transition to procurement phase.
- Increase of \$1.170M from FY23 to FY24 under Systems Eng ASIP (G/WR) is to fund Department-approved requirements for Safety and Survivability ASIP efforts.
- Increase of \$1.053M from FY23 to FY24 under Systems Eng Vest (G/WR) is to fund Department-approved requirements for the RW/TR Aircrew Vest System.

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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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	NAWCAD : Patuxent River, MD	0.000	0.000	Oct 2021	0.000	Oct 2022	2.225	Nov 2023	-		2.225	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	Various : Patuxent River, MD	0.758	0.000		0.467	Oct 2022	0.525	Nov 2023	-		0.525	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	NAWCAD : Patuxent River, MD	0.000	0.500	Oct 2021	0.500	Oct 2022	0.500	Nov 2023	-		0.500	0.000	1.500	-
Subtotal			0.758	0.500		0.967		3.250		-		3.250	Continuing	Continuing	N/A

Remarks
 - Developmental T&E being performed by NAWCAD is in support of IJHMCS (\$2.0M in FY24) and ASIP (\$225k in FY24).
 - Developmental T&E being performed by Various activities at Patuxent River, MD is in support of EVA (\$467k in FY23 and \$525k in FY24).
 - Operational T&E being performed by NAWCAD is in support of SOA (\$500k each FY from FY22-FY24).

Management Services (\$ 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			
Travel	WR	Various : Various	1.468	0.050	Oct 2021	0.050	Oct 2022	0.051	Oct 2023	-		0.051	Continuing	Continuing	Continuing
Prior year Mgmt Svcs no longer funded in the FYDP	Various	Various : Various	11.923	0.000		0.000		0.000		-		0.000	0.000	11.923	-
Subtotal			13.391	0.050		0.050		0.051		-		0.051	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	190.747	17.212	35.802	34.327	-	34.327	Continuing	Continuing	N/A

Remarks

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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EVA Program	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestones Phases	Engineering and Manufacturing Development												Production and Deployment															
Program Management																												
Contracts	Design and Development																											
Deliveries																												
Engineering																												
Logistics																												
Test and Evaluation																												

Note: EVA Prime Contractor is currently undergoing Over Target Baseline and Over Target Schedule proceedings that will likely result in corresponding schedule adjustments. An updated schedule will be provided at the next budget cycle. If deemed operationally representative, EDM assets will be used for OPEVAL.

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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HNIM Program	FY22				FY23				FY24				FY25				FY26				FY27				FY28			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestones Phases													▲ MS C				★ IOC				▲ FRP DR							
Program Management					▲ IBR																							
Contracts									▲ Design and Development				▲ LRIP 1				▲ LRIP 2				▲ FRP							
Deliveries					4 Test Units												LRIP 1 (OPN, QTY 150)				LRIP 2 (OPN, QTY 150)				FRP (OPN, QTY 240)			
Engineering									◇ PDR	◇ CDR	TRR	◇																
Logistics									◇ LCSP								◇ ILA											
Test and Evaluation									DT-B1 Lab/SIL/ Ground				Flight IT-B2															

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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NGSR Program	FY2022				FY2023				FY2024				FY2025				FY2026				FY2027				FY2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestones Phases				◊	◊																							
	E2E CSEL Study Kick-off				Interim Report				Final Report (CDRLA057)				CSEL Scope Definition															
Program Management					△ ROM (Alt WF & CSEL Arch.)				△ COA Select				△ NGRS Award				△ Prod Award				◊ Fielding Decision							
CSEL Architectural Study					CSEL Study Phase																							
NGSR Design & Prototype									SE/Development/Test								OTA Integration											
Exercises & Demo																	◊ HHR Demo				Fld Testing				Production			

Note: This schedule has been furnished by the United States Air Force (USAF). The Next Generation Survival Radio (NGSR) program is managed by the Joint Program Management Office (JPMO), with the USAF as the lead integrator. As a stakeholder, the funding provided by the USN represents a commitment to address Communication Security (COMSEC) modernization directives and current obsolescence issues. Funding will augment and expedite USAF's efforts to engineer, develop, modify, test, qualify, and field NGSR to ensure Beyond Line-of-Site (BLOS) communications capability to allow downed aviators to be expeditiously located, identified, and recovered.

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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Safety and Survival	FY22				FY23				FY24				FY25				FY26				FY27				FY28							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Systems																																
Milestones Phases																																
Program Management				SOA Catalog Update				SOA Catalog Update				SOA Catalog Update				SOA Catalog Update				SOA Catalog Update				SOA Catalog Update				SOA Catalog Update				SOA Catalog Update
				SOA/ASIP Requirements Identification				SOA/ASIP Requirements Identification				SOA/ASIP Requirements Identification				SOA/ASIP Requirements Identification				SOA/ASIP Requirements Identification				SOA/ASIP Requirements Identification				SOA/ASIP Requirements Identification				SOA/ASIP Requirements Identification
Contracts	RFI				RFI				RFI				RFI				RFI				RFI				RFI				RFI			
				Procure Test Assets				Procure Test Assets				Procure Test Assets				Procure Test Assets				Procure Test Assets				Procure Test Assets				Procure Test Assets				Procure Test Assets
Deliveries	Test Asset Deliveries				Test Asset Deliveries				Test Asset Deliveries				Test Asset Deliveries				Test Asset Deliveries				Test Asset Deliveries				Test Asset Deliveries				Test Asset Deliveries			
Engineering																																
Logistics																																
Test and Evaluation	Developmental Testing				Developmental Testing				Developmental Testing				Developmental Testing				Developmental Testing				Developmental Testing											
	Operational Testing				Operational Testing				Operational Testing				Operational Testing				Operational Testing				Operational Testing											
	Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing				Flight Clearance Testing											

Note: SOA provides for the yearly evaluation of survival systems, addresses capability gaps, and executes developmental efforts to increase endurance, safety, and survivability. ASIP provides agile response to high-priority, near-term aircrew systems deficiencies and capability gaps to address critical safety and performance issues.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 0606 / <i>Aircrew System Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Enhanced Visual Acuity (EVA)				
Acquisition Milestones: Milestones: EVA Milestone C	2	2025	2	2025
Acquisition Milestones: Milestones: EVA IOC	4	2026	4	2026
Acquisition Milestones: Milestones: EVA FRP DR	2	2027	2	2027
Acquisition Milestones: Phases: EVA Engineering & Manufacturing Development Phase	1	2022	2	2025
Acquisition Milestones: Phases: EVA Production & Deployment Phase	2	2025	4	2028
System Development: Reviews: EVA PDR	1	2022	1	2022
System Development: Reviews: EVA CDR	4	2023	4	2023
System Development: Reviews: EVA TRR	4	2024	4	2024
System Development: Reviews: EVA SVR/PRR	1	2025	1	2025
System Development: Reviews: EVA OTRR	2	2025	2	2025
System Development: Reviews: EVA PCA	3	2026	3	2026
Test and Evaluation: EVA Developmental Testing DT-B1	2	2023	4	2024
Test and Evaluation: EVA Integrated Testing IT-B2	4	2024	1	2025
Test and Evaluation: EVA Integrated Testing IT-C2	1	2027	3	2027
Test and Evaluation: EVA Integrated Testing IT-C3	3	2028	4	2028
Test and Evaluation: EVA Operational Testing OT-C1	2	2025	2	2026
Production Milestones: Contract Awards: EVA LRIP 1 (OPN)	3	2025	3	2025
Production Milestones: Contract Awards: EVA LRIP 2 (OPN)	3	2026	3	2026
Production Milestones: Contract Awards: EVA FRP (OPN)	3	2027	3	2027
Deliveries: EVA Mass Models	2	2023	2	2023

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: EVA EDM (QTY 8)	1	2024	2	2024
Deliveries: EVA EDM (QTY 4)	1	2025	1	2025
Deliveries: EVA LRIP 1	3	2026	2	2027
Deliveries: EVA LRIP 2	3	2027	3	2028
<i>MH-60 R/S Head & Neck Injury Mitigation (HNIM)</i>				
Acquisition Milestones: Milestones: HNIM Milestone C	2	2025	2	2025
Acquisition Milestones: Milestones: HNIM IOC	1	2026	1	2026
Acquisition Milestones: Milestones: HNIM FRP DR	1	2027	1	2027
Acquisition Milestones: Phases: HNIM Engineering & Manufacturing Development Phase	1	2023	1	2025
Acquisition Milestones: Phases: HNIM Production & Deployment Phase	2	2025	4	2028
System Development: Reviews: HNIM PDR	4	2023	4	2023
System Development: Reviews: HNIM CDR	1	2024	1	2024
System Development: Reviews: HNIM TRR	4	2024	4	2024
Test and Evaluation: HNIM Developmental Testing DT-B1	4	2023	2	2024
Test and Evaluation: HNIM Integrated Testing IT-B2	3	2024	1	2025
Test and Evaluation: HNIM Operational Testing OT-C1	2	2025	3	2025
Test and Evaluation: HNIM Integrated Testing IT-C2	1	2026	2	2026
Production Milestones: Contract Awards: HNIM Design and Development Contract	1	2023	1	2023
Production Milestones: Contract Awards: HNIM LRIP 1 (OPN)	1	2025	1	2025
Production Milestones: Contract Awards: HNIM LRIP 2 (OPN)	2	2026	2	2026
Production Milestones: Contract Awards: HNIM A-Kit Mod H-60 Award	3	2026	3	2026
Production Milestones: Contract Awards: HNIM FRP 1 (OPN)	2	2027	2	2027
Deliveries: HNIM Test Units	1	2023	1	2023
Deliveries: HNIM LRIP 1	1	2026	4	2026
Deliveries: HNIM LRIP 2	1	2027	4	2027

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 0606 / Aircrew System Development
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: HNIM FRP	1	2028	2	2028
Improved Joint Helmet Mounted Cueing System (IJHMCS)				
Acquisition Milestones: Milestones: IJHMCS Milestone B	3	2023	3	2023
Acquisition Milestones: Milestones: IJHMCS Milestone C	4	2025	4	2025
Acquisition Milestones: Milestones: IJHMCS FRP DR	3	2026	3	2026
Acquisition Milestones: Milestones: IJHMCS IOC	3	2027	3	2027
Acquisition Milestones: Phases: IJHMCS Engineering & Manufacturing Development Phase	1	2023	4	2025
Acquisition Milestones: Phases: IJHMCS Production & Deployment Phase	4	2025	4	2028
System Development: Reviews: IJHMCS Kickoff	3	2023	3	2023
System Development: Reviews: IJHMCS SRR	3	2023	3	2023
System Development: Reviews: IJHMCS PDR	1	2024	1	2024
System Development: Reviews: IJHMCS CDR	2	2024	2	2024
System Development: Reviews: IJHMCS TRR	1	2025	1	2025
System Development: Reviews: IJHMCS SVR/PRR	3	2025	3	2025
Test and Evaluation: IJHMCS Developmental Testing DT-B1	2	2024	2	2025
Test and Evaluation: IJHMCS Integration Testing IT-B1	2	2025	4	2025
Production Milestones: Contract Awards: IJHMCS System Design/Development & Aircraft Integration	3	2023	3	2023
Production Milestones: Contract Awards: IJHMCS LRIP 1 (OPN)	4	2025	4	2025
Production Milestones: Contract Awards: IJHMCS FRP 1 (OPN)	3	2026	3	2026
Production Milestones: Contract Awards: IJHMCS FRP 2 (OPN)	3	2027	3	2027
Deliveries: IJHMCS Mass Models	2	2024	2	2024
Deliveries: IJHMCS EDM Units	4	2024	4	2024
Deliveries: IJHMCS LRIP 1	4	2026	3	2027
Deliveries: IJHMCS FRP 1	4	2027	3	2028

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 0606 / <i>Aircrew System Development</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: IJHMCS FRP 2	4	2028	4	2028
Next Generation Survival Radio (NGSR)				
Acquisition Milestones: Milestones: NGSR Milestone C	4	2024	4	2024
Acquisition Milestones: Phases: NGSR Systems Engineering/Developmental/Test Phase	3	2023	3	2025
Production Milestones: Contract Awards: NGSR Design and Development Contract Award	4	2023	4	2023
Safety and Survival Systems				
Program Management: Milestones: SOA FY22 Catalog Update	4	2022	4	2022
Program Management: Milestones: SOA FY23 Catalog Update	4	2023	4	2023
Program Management: Milestones: SOA FY24 Catalog Update	4	2024	4	2024
Program Management: Milestones: SOA FY25 Catalog Update	4	2025	4	2025
Program Management: Milestones: SOA FY26 Catalog Update	4	2026	4	2026
Program Management: Milestones: SOA FY27 Catalog Update	4	2027	4	2027
Program Management: Milestones: SOA FY28 Catalog Update	4	2028	4	2028
Program Management: Milestones: SOA/ASIP FY22 Requirements Identification	4	2022	4	2022
Program Management: Milestones: SOA/ASIP FY23 Requirements Identification	4	2023	4	2023
Program Management: Milestones: SOA/ASIP FY24 Requirements Identification	4	2024	4	2024
Program Management: Milestones: SOA/ASIP FY25 Requirements Identification	4	2025	4	2025
Program Management: Milestones: SOA/ASIP FY26 Requirements Identification	4	2026	4	2026
Program Management: Milestones: SOA/ASIP FY27 Requirements Identification	4	2027	4	2027
Program Management: Milestones: SOA/ASIP FY28 Requirements Identification	4	2028	4	2028
Contracts: Milestones: SOA FY22 RFI	1	2022	1	2022
Contracts: Milestones: SOA FY23 RFI	1	2023	1	2023
Contracts: Milestones: SOA FY24 RFI	1	2024	1	2024
Contracts: Milestones: SOA FY25 RFI	1	2025	1	2025

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 0606 / <i>Aircrew System Development</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Contracts: Milestones: SOA FY26 RFI	1	2026	1	2026
Contracts: Milestones: SOA FY27 RFI	1	2027	1	2027
Contracts: Milestones: SOA FY28 RFI	1	2028	1	2028
Contracts: Milestones: SOA FY22 Procure Test Assets	2	2022	2	2022
Contracts: Milestones: SOA FY23 Procure Test Assets	2	2023	2	2023
Contracts: Milestones: SOA FY24 Procure Test Assets	2	2024	2	2024
Contracts: Milestones: SOA FY25 Procure Test Assets	2	2025	2	2025
Contracts: Milestones: SOA FY26 Procure Test Assets	2	2026	2	2026
Contracts: Milestones: SOA FY27 Procure Test Assets	2	2027	2	2027
Contracts: Milestones: SOA FY28 Procure Test Assets	2	2028	2	2028
Deliveries: Milestones: SOA FY22 Test Assets Delivery	2	2022	2	2022
Deliveries: Milestones: SOA FY23 Test Assets Delivery	2	2023	2	2023
Deliveries: Milestones: SOA FY24 Test Assets Delivery	2	2024	2	2024
Deliveries: Milestones: SOA FY25 Test Assets Delivery	2	2025	2	2025
Deliveries: Milestones: SOA FY26 Test Assets Delivery	2	2026	2	2026
Deliveries: Milestones: SOA FY27 Test Assets Delivery	2	2027	2	2027
Deliveries: Milestones: SOA FY28 Test Assets Delivery	2	2028	2	2028
Test & Evaluation: SOA FY22 Developmental Testing	1	2022	4	2022
Test & Evaluation: SOA FY22 Operational Testing	1	2022	4	2022
Test & Evaluation: SOA FY22 Flight Clearance Testing	1	2022	4	2022
Test & Evaluation: SOA FY23 Developmental Testing	1	2023	4	2023
Test & Evaluation: SOA FY23 Operational Testing	1	2023	4	2023
Test & Evaluation: SOA FY23 Flight Clearance Testing	1	2023	4	2023
Test & Evaluation: SOA FY24 Developmental Testing	1	2024	4	2024
Test & Evaluation: SOA FY24 Operational Testing	1	2024	4	2024

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 0606 / <i>Aircrew System Development</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluation: SOA FY24 Flight Clearance Testing	1	2024	4	2024
Test & Evaluation: SOA FY25 Developmental Testing	1	2025	4	2025
Test & Evaluation: SOA FY25 Operational Testing	1	2025	4	2025
Test & Evaluation: SOA FY25 Flight Clearance Testing	1	2025	4	2025
Test & Evaluation: SOA FY26 Developmental Testing	1	2026	4	2026
Test & Evaluation: SOA FY26 Operational Testing	1	2026	4	2026
Test & Evaluation: SOA FY26 Flight Clearance Testing	1	2026	4	2026
Test & Evaluation: SOA FY27 Developmental Testing	1	2027	4	2027
Test & Evaluation: SOA FY27 Operational Testing	1	2027	4	2027
Test & Evaluation: SOA FY27 Flight Clearance Testing	1	2027	4	2027
Test & Evaluation: SOA FY28 Developmental Testing	1	2028	4	2028
Test & Evaluation: SOA FY28 Operational Testing	1	2028	4	2028
Test & Evaluation: SOA FY28 Flight Clearance Testing	1	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 9099 / Physiological Episodes			
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
9099: <i>Physiological Episodes</i>	4.805	3.059	7.480	7.828	-	7.828	6.958	5.402	5.243	5.349	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Proj 9099 PHYSIOLOGICAL EPISODES:

Physiological Episodes includes Physiological Monitoring (PhysMon) and Helmet Mask Regulator (HMR).

PhysMon: This program provides funding to assure pilot performance integrity by developing and fielding a system that monitors pilot physiological parameters and warns of state of health or performance degradation that may result in loss of consciousness or the ability to safely conduct flight. There are several solutions undergoing evaluation.

HMR: An improved helmet mask/regulator system is required to mitigate PE. This program determines what improvements are needed and develops the material solution. Through RCCA, it has been determined that measuring the gas contents and pressure within the oxygen mask is a key part to understanding a sub-set of physiological conditions of Naval Aviators in flight. The integration of a single piece of hardware containing an oxygen sensor, a carbon dioxide sensor, and a mask pressure sensor into the Navy's existing MBU-23 oxygen mask assembly to collect data will inform a helmet mask/regulator system redesign, and improvements covered under this issue. The closeout of RCCA action items is paramount to the Naval Aviation Enterprise's efforts in mitigating PE, restoring confidence in the aircraft, and most importantly, keeping our USN and USMC aircrew safe.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Physiological Episodes	3.059	7.480	7.828	0.000	7.828
Articles:	-	-	-	-	-
FY 2023 Plans:					
PhysMon: Award integration contract and begin development of integrated system. Award LRIP 2 production contract.					
HMR: Award EMD contract for an improved mask, regulator, and helmet system to comply with the RCCA recommendations and mitigate Physiological Episodes.					
FY 2024 Base Plans:					
PhysMon: Hold PMR, award LRIP 3 production contract, and begin delivery of LRIP 2 units.					
HMR: Hold PMR, begin delivery of test assets, hold TRR, and start lab/ground and flight testing.					
FY 2024 OCO Plans:					
N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase from FY23 to FY24 is due to changes in support and working capital fund rates.					
Accomplishments/Planned Programs Subtotals	3.059	7.480	7.828	0.000	7.828

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

Line Item	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
• OPN/4268: <i>Aviation Life Support</i>	3.600	4.300	9.900	-	9.900	9.987	21.818	25.550	21.850	Continuing	Continuing

Remarks

Note: Physiological Monitoring and Helmet Mask Regulator is only a portion of Aviation Life Support, LI 4268.

D. Acquisition Strategy

PhysMon: Of the six prototyping contracts awarded using Other Transaction Authority (OTA) through the Army Contracting Command (ACC NJ) via the Defense Innovation Unit (DIU), four OTAs remain as candidates for integration and production follow-on; strategy will depend on further prototyping results.

HMR: An EMD contract will succeed the Cooperative Research and Development Agreement (CRADA) with the purpose of developing an in-mask sensor as part of the new helmet/mask/regulator program.

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 9099 / Physiological Episodes
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Phys. Mon Program	FY22				FY23				FY24				FY25				FY26				FY27				FY28											
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4								
Milestones Phases	△ MSC EMD Phase				IOC ★				Production and Deployment Phase												Operations and Support Phase								Sensor Development/Improvements							
Program Management	PMR △				PMR △				PMR △				PMR △				PMR △				PMR △				PMR △											
Contracts	△ RFP		Production △ AWD		△ RFP		Production △ AWD		△ RFP		Production △ AWD		△ RFP		Production △ AWD		△ RFP		Production △ AWD		△ RFP		Production △ AWD		△ RFP		Production △ AWD									
Deliveries					LRIP 1				LRIP 2								FRP 1				FRP 2															
Engineering	◇ TRR/FRR				◇ SVR/PRR				◇ PCA				◇ SVR/PRR				◇ PCA																			
Logistics	ILA ◇				◇ LCSP																															
Test and Evaluation	Lab/Ground testing								On-Going Lab/Ground testing																											
Adhoc	Integration tests								Adhoc flight tests																											
	Squadron flight tests																																			

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 9099 / Physiological Episodes
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HMR Program	FY22				FY23				FY24				FY25				FY26				FY27				FY28			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestones Phases	Tech Maturation & Risk Reduction				EMD Phase				Production and Deployment Phase				Operations and Support Phase				IOC ★											
Program Management					PMR ▲				PMR ▲				PMR ▲				PMR ▲											
Contracts	RFP ▲				EMD ▲				AWD ▲				RFP ▲				Production ▲				AWD ▲							
Deliveries									Test Assets								LRIP 1				LRIP 2							
Engineering	PDR ◇				PDR ◇				CDR ◇				TRR/ FRR ◇				SVR/ PRR ◇				PCA ◇							
Logistics					LCSP ◇				ILA ◇				LCSP ◇															
Test and Evaluation									Lab/Ground testing				Flight tests				Squadron flight tests											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Physiological Monitoring</i>				
Acquisition Milestones: Milestones: PM Milestone C	2	2022	2	2022
Acquisition Milestones: Milestones: PM IOC	3	2023	3	2023
Acquisition Milestones: Phases: PM Engineering & Manufacturing Development Phase	1	2022	4	2022
Acquisition Milestones: Phases: PM Production & Deployment Phase	2	2022	4	2026
Acquisition Milestones: Phases: PM Operations & Support Phase	3	2025	4	2028
System Development: Reviews: PM TRR/FRR	2	2022	2	2022
System Development: Reviews: PM SVR/PRR 1	1	2023	1	2023
System Development: Reviews: PM SVR/PRR 2	1	2025	1	2025
System Development: Reviews: PM PCA 1	4	2023	4	2023
System Development: Reviews: PM PCA 2	4	2025	4	2025
Test & Evaluation: PM Lab/Ground Testing	1	2022	4	2023
Test & Evaluation: PM Adhoc Flight Tests	1	2022	1	2022
Test & Evaluation: PM Squadron Flight Tests	1	2022	1	2023
Test & Evaluation: PM Integration Tests	2	2022	4	2023
Test & Evaluation: PM Ongoing Lab/Ground Testing	4	2023	4	2028
Test & Evaluation: PM Ongoing Adhoc Flight Tests	1	2024	4	2028
Production Milestones: Contract Award: PM Integration Contract Award	2	2023	2	2023
Production Milestones: Contract Award: PM Production Contract Award 1	4	2022	4	2022
Production Milestones: Contract Award: PM Production Contract Award 2	4	2023	4	2023
Production Milestones: Contract Award: PM Production Contract Award 3	4	2024	4	2024
Deliveries: PM LRIP 1 (OPN)	2	2023	1	2024

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 9099 / <i>Physiological Episodes</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Deliveries: PM LRIP 2 (OPN)	3	2024	4	2024
Deliveries: PM FRP 1	4	2025	4	2026
Deliveries: PM FRP 2	1	2027	4	2027
<i>Helmet and Mask Regulator Program</i>				
Acquisition Milestones: Milestones: HMR Milestone B	4	2022	4	2022
Acquisition Milestones: Milestones: HMR Milestone C	1	2026	1	2026
Acquisition Milestones: Milestones: HMR IOC	4	2027	4	2027
Acquisition Milestones: Phases: HMR Tech Maturation & Risk Reduction Phase	1	2022	4	2022
Acquisition Milestones: Phases: HMR Engineering & Manufacturing Development Phase	1	2023	4	2025
Acquisition Milestones: Phases: HMR Production & Deployment Phase	3	2024	4	2027
Acquisition Milestones: Phases: HMR Operations & Support Phase	4	2026	4	2028
System Development: Reviews: HMR PDR 1	2	2022	2	2022
System Development: Reviews: HMR PDR 2	2	2023	2	2023
System Development: Reviews: HMR CDR	4	2023	4	2023
System Development: Reviews: HMR TRR/FRR	3	2024	3	2024
System Development: Reviews: HMR SVR/PRR	1	2025	1	2025
System Development: Reviews: HMR PCA	4	2025	4	2025
Test & Evaluation: HMR Lab/Ground Testing	1	2024	4	2024
Test & Evaluation: HMR Flight Tests	4	2024	1	2026
Test & Evaluation: HMR Squadron Flight Tests	2	2026	4	2028
Production Milestones: Contract Award: HMR EMD Contract Award	2	2023	2	2023
Production Milestones: Contract Award: HMR Production Contract Award	2	2026	2	2026
Deliveries: HMR Test Assets	2	2024	3	2024
Deliveries: HMR LRIP 1 (OPN)	4	2026	3	2027
Deliveries: HMR LRIP 2 (OPN)	3	2027	4	2027

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 9999 / Congressional Adds
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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
9999: Congressional Adds	0.000	0.000	7.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Add: RW/TR Survival Vest Improvement Program
 The RW/TR Aircrew Vest System is required to be worn on over-land and over-water missions. It provides flotation, mobile aircrew restraint, hoisting capability, and serves as carriage for survival equipment and ballistic projectile armor. This funding provides for an improved RW/TR Aircrew Survival Vest to address safety and performance issues with the currently fielded solution. The new Aircrew Survival Vest System will improve the safety and performance of flight crews by providing improvements to flotation, mobility, thermal burden, emergency egress survivability, and overall weight and bulk.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023
Congressional Add: Aircrew systems development	0.000	7.000
FY 2022 Accomplishments: N/A		
FY 2023 Plans: Perform System Requirements Review, evaluate potential design changes to existing DoD system components, perform developmental testing, award contract to procure additional test assets		
Congressional Adds Subtotals	0.000	7.000

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0604264N/0606: Air Crew Systems Development	0.000	0.000	1.053	-	1.053	0.000	0.000	0.000	0.000	0.000	1.053

Remarks

FY23 RDTE funding in support of Vest Program received through Congressional Add and budgeted FY24 RDTE funding received under PE 0604264N/PU 0606. FY24-27 OPN funding to support this program is currently being allocated.

D. Acquisition Strategy

Commercial as well as DoD products will be evaluated in order to field a safe and effective system as soon as practical. The acquisition strategy includes competition for commercial solutions, the use of partnership intermediary agreements to improve existing DoD component designs, and the application of streamlining initiatives.

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

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	Project (Number/Name) 9999 / Congressional Adds
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Vest Program	FY22				FY23				FY24				FY25				FY26				FY27				FY28					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Milestones Phases									△ MS C	★ IOC																				
					Engineering/ Manufacturing Development				Production and Deployment																					
Contracts						△ RFP Release			△ Contract AWD	LRIP 1 (RDTE) POP					△ OPT AWD	FRP 1 POP					△ OPT AWD	FRP 2 POP					△ OPT AWD	FRP 3 POP		
Deliveries										Developmental Test Units				LRIP 1		FRP 1			FRP 2			FRP 3								
Engineering						◇ SRR	◇ TRR	◇ SVR																						
Logistics							◇ LCSP																							
Test and Evaluation							DT																							

Note: Schedule reflects FY23 RDTE funding received through Congressional Add and budgeted FY24 RDTE funding received under PE 0604264N/PU 0606. Initial assets for developmental testing will be required with proposal response.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604264N / <i>Air Crew Systems Development</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Vest Program</i>				
Acquisition Milestones: Milestones: Vest Milestone C	1	2024	1	2024
Acquisition Milestones: Milestones: Vest IOC	3	2024	3	2024
Acquisition Milestones: Phases: Vest Engineering & Manufacturing Development Phase	1	2023	1	2024
Acquisition Milestones: Phases: Vest Production & Deployment Phase	1	2024	2	2028
Systems Development: Reviews: Vest SRR	2	2023	2	2023
Systems Development: Reviews: Vest TRR	4	2023	4	2023
Systems Development: Reviews: Vest SVR	1	2024	1	2024
Test and Evaluation: Vest Developmental Testing	3	2023	1	2024
Production Milestones: Contract Awards: Vest Test Assets Contract Award	4	2023	4	2023
Production Milestones: Contract Awards: Vest LRIP 1 (RDTE) Contract Award	1	2024	1	2024
Production Milestones: Contract Awards: Vest FRP 1 (Option) Contract Award	1	2025	1	2025
Production Milestones: Contract Awards: Vest FRP 2 (Option) Contract Award	1	2026	1	2026
Production Milestones: Contract Awards: Vest FRP 3 (Option) Contract Award	1	2027	1	2027
Deliveries: Vest Developmental Test Units Delivery	4	2023	1	2024
Deliveries: Vest LRIP 1 Delivery	2	2024	2	2025
Deliveries: Vest FRP 1 Delivery	2	2025	2	2026
Deliveries: Vest FRP 2 Delivery	2	2026	2	2027
Deliveries: Vest FRP 3 Delivery	2	2027	2	2028