

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	135.561	7.174	30.980	21.172	-	21.172	19.932	17.566	3.013	3.072	Continuing	Continuing
0606: Aircrew System Development	135.561	6.247	20.980	21.172	-	21.172	19.932	17.566	3.013	3.072	Continuing	Continuing
9999: Congressional Adds	0.000	0.927	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.927

**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.

**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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>
Previous President's Budget	13.235	20.980	20.380	-	20.380
Current President's Budget	7.174	30.980	21.172	-	21.172
Total Adjustments	-6.061	10.000	0.792	-	0.792
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.403	0.000			
• Program Adjustments	0.000	0.000	1.000	-	1.000
• Rate/Misc Adjustments	0.000	0.000	-0.208	-	-0.208

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• Congressional Directed Reductions Adjustments			-6.618	-	-	-
• Congressional Add Adjustments			0.960	-	-	-
Congressional Add Details (\$ in Millions, and Includes General Reductions)					FY 2018	FY 2019
Project: 9999: Congressional Adds						
Congressional Add: T-45 and F/A-18 Physiological Episodes					0.927	0.000
Congressional Add: Advance Aircrew Physiological Monitoring					0.000	10.000
Congressional Add Subtotals for Project: 9999					0.927	10.000
Congressional Add Totals for all Projects					0.927	10.000
Change Summary Explanation						
Schedule:						
1. Acquisition Milestones:						
A. Laser Eye Protection (LEP) - Milestone B (MS B), Milestone C (MS C), Initial Operational Capability (IOC) and Full Rate Production (FRP) delayed due to extended revision of threat requirement and decision not to procure United States Air Force (USAF) spectacle.						
B. Enhanced Visual Acuity (EVA) - MS B and MS C dates changed to reflect revised schedule. Schedule has been postponed due to departmental shifting of priorities.						
2. System Development:						
A. LEP - System Readiness Review 1 moved from 4Q FY15 to 1Q FY17; System Function Review/System Readiness Review 2 moved from 1Q FY18 to 2Q FY18; Critical Design Review moved from 2Q FY19 to 2Q FY20; Test Readiness Review moved from 4Q FY19 to 4Q FY20; System Verification Review/Production Readiness Review moved from 2Q FY21 to 4Q FY22; Physical Configuration Audit moved from 1Q FY22 to 4Q FY23.						
B. EVA - Moved Preliminary Design Review from 2Q FY19 to 4Q FY20; moved Critical Design Review from 1Q FY20 to 2Q FY21; moved Test Readiness Review from 1Q FY21 to 2Q FY22; moved System Verification Review/Production Readiness Review from 1Q FY22 to 1Q FY23.						
3. Test and Evaluation:						
A. LEP - Developmental Test shifted from 1Q FY20 to 1Q FY21.						
B. EVA - Developmental Test shifted from 3Q FY20 to 2Q FY21; Operational Test shifted from 3Q FY22 to 4Q FY23.						

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Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development	
<div>4. Production Milestones:</div> <div>A. LEP - Engineering Development Model (EDM), Low Rate Initial Production (LRIP) and Full Rate Production (FRP) contract award dates changed to align with milestone decisions.</div> <div>B. EVA - EDM, LRIP 1 and LRIP 2 contract award dates changed to align with milestone decisions.</div> <div>5. Deliveries:</div> <div>A. Laser Eye Protection Spectacles (LEP) - Engineering Development Model (EDM) quantity changed from 62 to 91; Low Rate Initial Production (LRIP) 1 quantity changed from 550 to 350; Full Rate Production (FRP) 1 quantity changed from 665 to 535.</div> <div>B. Enhanced Visual Acuity (EVA) - EDM quantity changed from 25 to 12; LRIP 1 quantity changed from 6 to 25 and LRIP 2 quantity changed from 64 to 100.</div> <div>Technical: N/A</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 0606 / Aircrew System Development			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
0606: Aircrew System Development	135.561	6.247	20.980	21.172	-	21.172	19.932	17.566	3.013	3.072	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

AIRCREW SYSTEMS: Laser Eye Protection (LEP), Enhanced Visual Acuity (EVA), and Aircrew Systems (AS).

Under the above projects, LEP provides eye protection solutions that will provide Fixed, Rotary Wing and Patrol pilots and aircrew with multiple wavelength fixed threat and hazard protection during day and night unaided and Night Vision Goggle aided missions. LEP will consist of a suite of products to include spectacles, goggles and visors. The LEP (visor, spectacle or goggle format) is being developed for compatibility with all required USN/USMC Aviation Life Support Equipment as well as cockpit displays, night vision and fire control systems. EVA provides advanced 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 incremental, modular approach to fielding full capability and future upgrades. Future increments will provide enhanced aircrew situational awareness in degraded visual environment. Aircrew Systems includes State of the Art (SOA) and Survival Systems which provides for the yearly evaluation of the survival, clothing and other aircrew systems that provide upgraded performance, fill capability gaps, improve aircrew endurance and performance, safety and enhance survivability.

AIRCRAFT SYSTEMS: Aircraft Systems include studies for Advanced Crash Protection, SOA, and Survival Systems. SOA provides for the yearly evaluation of the survival systems that provide upgraded performance, improve endurance, fill capability gaps and improve performance, safety and enhance survivability.

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

	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>
<b>Title:</b> Aircrew System Development	5.692	20.345	20.650	0.000	20.650
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Laser Eye Protection (LEP) provides Spectacles (both Self Protection and Multi-Wavelength), goggles, step-in visor and Laser Eye Protection Improvement Program (LEPIP) which monitors emerging threats and changes to technology. Enhanced Visual Acuity (EVA) provides advanced night vision/Head Up Display (HUD) capability to address critical capability gaps in low and no light illumination (Night Vision). Future increments will provide enhanced visibility in degraded visual environments. AS includes SOA.					
<b>FY 2019 Plans:</b> Laser Eye Protection (LEP): Continue research and development of the next increment of threat spectacle.					

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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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
<p>Enhanced Visual Acuity (EVA): Continue critical technology development, receive validated Capability Development Document (CDD), release Request For Proposals (RFP) for Engineering and Manufacturing Development (EMD), receive Milestone B decision and award EMD Contract.</p> <p>State of the Art (SOA): Continue a yearly evaluation and authorization of the survival, clothing, and other aircrew systems items. Identification, testing and approval of items that provide upgraded performance, fill capability gaps, improve aircrew endurance, improve aircrew performance and safety and enhance survivability.</p> <p>Physiological Episode Protection: Mitigate risk of loss of aircrew and Tactical and Training jet platforms due to Physiological Episodes using monitoring and alert systems. Develop, prototype, and test a physiological monitoring system that detects physiological episodes and provides a warning in time to enable the aircrew to execute emergency procedures and recover safely.</p> <p><b>FY 2020 Base Plans:</b></p> <p>Laser Eye Protection (LEP): Continue research and development of the next increment of threat spectacle, complete Critical Design Review (CDR), complete Technical Readiness Review (TRR), and deliver 91 Engineering Development Models (EDM).</p> <p>Enhanced Visual Acuity (EVA): Continue critical technology development, complete Preliminary Design Review (PDR) and System Requirements Review 2 (SRR2).</p> <p>State of the Art (SOA): Continue a yearly evaluation and authorization of the survival, clothing, and other aircrew systems items. Identification, testing and approval of items that provide upgraded performance, fill capability gaps, improve aircrew endurance, improve aircrew performance and safety and enhance survivability.</p> <p>Physiological Episode Protection: Mitigate risk of loss of aircrew and Tactical and Training jet platforms due to Physiological Episodes using monitoring and alert systems. Develop, prototype, and test a physiological monitoring system that detects physiological episodes and provides a warning in time to enable the aircrew to execute emergency procedures and recover safely.</p> <p><b>FY 2020 OCO Plans:</b></p> <p>N/A</p> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b></p> <p>FY 2019 to FY 2020 Increase due to ramp up of EVA development activity in preparation for Preliminary Design Review (PDR) and continued execution of Engineering and Manufacturing Development (EMD) Contract.</p>						
Title: Aircraft Systems Development		0.555	0.635	0.522	0.000	0.522
Articles:		-	-	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2020 Navy			<b>Date:</b> March 2019		
<b>Appropriation/Budget Activity</b> 1319 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0604264N / Air Crew Systems Development		<b>Project (Number/Name)</b> 0606 / Aircrew System Development	

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>
<p><b>Description:</b> Aircraft Systems include studies for Advanced Crash Protection, and State of the Art (SOA).</p> <p><b>FY 2019 Plans:</b> State of the Art (SOA): Continue a yearly evaluation and authorization to include identification, testing and approval of items that provide upgraded performance, fill capability gaps, improve endurance, improve performance and safety and enhance survivability. Oxygen Cart (Peculiar Support Equipment (PSE)): The Emergency Oxygen Source (EOS) in the F/A-18 Navy Aircrew Common Ejection Seat (NACES) survival kit will be changed to afford the pilot more emergency oxygen in the event of a hypoxia incidence. This change will drive a requirement for PSE O2 servicing cart used to service the EOS cylinder. This part of the effort will develop, prototype and test an oxygen cart to reach the pressures required.</p> <p><b>FY 2020 Base Plans:</b> State of the Art (SOA): Continue a yearly evaluation and authorization to include identification, testing and approval of items that provide upgraded performance, fill capability gaps, improve endurance, improve performance and safety and enhance survivability. Oxygen Cart (Peculiar Support Equipment (PSE)): The Emergency Oxygen Source (EOS) in the F/A-18 Navy Aircrew Common Ejection Seat (NACES) survival kit will be changed to afford the pilot more emergency oxygen in the event of a hypoxia incidence. This change will drive a requirement for PSE O2 servicing cart used to service the EOS cylinder. This part of the effort will develop, prototype and test an oxygen cart to reach the pressures required.</p> <p><b>FY 2020 OCO Plans:</b> N/A</p> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Slight decrease from FY 2019 to FY 2020 due to contract services reform.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	6.247	20.980	21.172	0.000	21.172

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/4268: Aviation Life Support	41.967	14.570	32.862	0.500	33.362	34.405	38.456	49.998	50.705	Continuing	Continuing

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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			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• APN/0575: Aviation Life Support Mods	0.000	15.864	39.762	-	39.762	35.397	2.666	5.885	6.034	65.386	191.362
Remarks											
D. Acquisition Strategy											
Commercial Off-The-Shelf /Non-Developmental Items where possible, cost type contracts.											
E. Performance Metrics											
Enhanced Visual Acuity: Performance Metrics to include Preliminary Design Review (PDR), Critical Design Review (CDR), Milestone B (MS B), Milestone C (MS C) and IOC.											
Laser Eye Protection: Performance Metrics to include System Readiness Review (SRR), Critical Design Review (CDR), Test Readiness Review (TRR), System Verification Review/Production Readiness Review (SVR/PRR), Milestone B (MS B), Milestone C (MS C), Initial Operating Capability (IOC) and Full Rate Production Decision Review (FRPDR).											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 0606 / Aircrew System Development					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Eng Laser Eye Protection (LEP)	WR	NAWCAD : Patuxent River, MD	10.046	1.000	Dec 2017	1.000	Dec 2018	1.000	Dec 2019	-		1.000	Continuing	Continuing	Continuing
Systems Eng Laser Eye Protection (LEP)	C/FFP	NAVAIR : Patuxent River, MD	0.573	0.637	Mar 2018	2.100	Dec 2018	1.700	Dec 2019	-		1.700	3.035	8.045	5.600
Systems Eng Aircrew Systems	WR	Various : Various	16.433	0.538	Feb 2018	0.525	Dec 2018	1.359	Feb 2020	-		1.359	Continuing	Continuing	Continuing
Systems Eng Aircraft Systems	WR	Various : Various	44.980	0.447	Feb 2018	0.635	Feb 2019	0.522	Feb 2020	-		0.522	Continuing	Continuing	Continuing
System Eng Enhanced Visual Acuity	C/CPFF	Various : Various	3.712	0.000	May 2018	10.660	Mar 2019	10.761	Feb 2020	-		10.761	Continuing	Continuing	Continuing
System Eng Enhanced Visual Acuity	WR	Various : Patuxent River, MD	12.047	0.457	Feb 2018	3.313	Nov 2018	2.982	Dec 2019	-		2.982	Continuing	Continuing	Continuing
Systems Eng Physiological Episode Protection	C/CPFF	TBD : TBD	0.000	2.422	Nov 2017	1.700	Nov 2018	1.800	Nov 2019	-		1.800	Continuing	Continuing	Continuing
Systems Eng O2 Cart	C/CPFF	NAWCAD : Patuxent River, MD	0.000	0.700	Feb 2018	1.000	Dec 2018	1.000	Dec 2019	-		1.000	Continuing	Continuing	Continuing
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	34.569	0.000		0.000		0.000		-		0.000	0.000	34.569	-
Subtotal			122.360	6.201		20.933		21.124		-		21.124	Continuing	Continuing	N/A
Remarks															
FY18 funding Program Delay Mark (Issue 66058) realized (\$6.618M).															
FY18 funding received (\$4.208M) in support of Enhanced Emergency Oxygen Supply (EEOS) and Physiological Episode (PE) Protection.															
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	Various : Various	1.278	0.046	Dec 2017	0.047	Dec 2018	0.048	Dec 2019	-		0.048	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	-



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2020 Navy												<b>Date:</b> March 2019		
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604264N / <i>Air Crew Systems Development</i>				<b>Project (Number/Name)</b> 0606 / <i>Aircrew System Development</i>				

  

Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			13.201	0.046		0.047		0.048		-		0.048	Continuing	Continuing	N/A

  

	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	135.561	6.247	20.980	21.172	-	21.172	Continuing	Continuing	N/A

  

**Remarks**

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PE 0604264N: *Air Crew Systems Development*  
Navy

R-1 Line #111

[illegible]

PE 0604264N / Air Crew Systems Development

0606 / Aircrew System Development

[illegible]

2020DON - 0604264N - 0606

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PE 0604264N: *Air Crew Systems Development*  
Navy

R-1 Line #111

Project (Number/Name)	Start Date	End Date	Duration (Days)	Progress (%)	Status	Notes
101	2023-01-01	2023-01-15	14	100	Completed	Project 101 completed on time.
102	2023-01-15	2023-02-01	16	75	In Progress	Project 102 is 75% complete.
103	2023-02-01	2023-02-15	14	50	In Progress	Project 103 is 50% complete.
104	2023-02-15	2023-03-01	15	25	In Progress	Project 104 is 25% complete.
105	2023-03-01	2023-03-15	14	10	In Progress	Project 105 is 10% complete.
106	2023-03-15	2023-03-31	15	0	Not Started	Project 106 has not started yet.
107	2023-03-31	2023-04-15	15	0	Not Started	Project 107 has not started yet.
108	2023-04-15	2023-04-30	15	0	Not Started	Project 108 has not started yet.
109	2023-04-30	2023-05-15	15	0	Not Started	Project 109 has not started yet.
110	2023-05-15	2023-05-31	15	0	Not Started	Project 110 has not started yet.

PE 0604264N / Air Crew Systems Development

0606 / Aircrew System Development

Enhanced Visual Acuity (EVA)		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Acquisition Milestones																													
	Milestones							MS B												MS C									
System Development																													
	Reviews									PDR				CDR						TRR									
Test and Evaluation																													
Production Milestones																													
	Contract Awards							EDM																					
Deliveries																													

2020DON - 0604264N - 0606 EDM Units will be used for Operational Testing

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Exhibit R-4A, RDT&amp;E Schedule Details: PB 2020 Navy

Date: March 2019

## Appropriation/Budget Activity

1319 / 5

## R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems  
Development

## Project (Number/Name)

0606 / Aircrew System Development

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Laser Eye Protection (LEP)</b>				
Acquisition Milestones: Milestones: LEP: Milestone C	2	2023	2	2023
Acquisition Milestones: Milestones: LEP: FRP Decision	4	2023	4	2023
Acquisition Milestones: Milestones: LEP IOC	1	2024	1	2024
System Development: Reviews: SRR 2	2	2018	2	2018
System Development: Reviews: CDR	2	2020	2	2020
System Development: Reviews: TRR	4	2020	4	2020
System Development: Reviews: SVR/PRR	4	2022	4	2022
System Development: Reviews: PCA	4	2023	4	2023
Test & Evaluation: DT	1	2021	3	2021
Production Milestones: Contract Awards: LEP LRIP 1 (OPN)	2	2023	2	2023
Production Milestones: Contract Awards: LEP FRP 1 (OPN)	4	2024	4	2024
Deliveries: LEP EDM Qty 91	3	2020	4	2020
Deliveries: LEP LRIP Qty 350	2	2023	4	2023
Deliveries: LEP FRP 1 Qty 535	2	2024	4	2024
<b>Enhanced Visual Acuity (EVA)</b>				
Acquisition Milestones: Milestones: EVA Milestone B	4	2019	4	2019
Acquisition Milestones: Milestones: EVA Milestone C	1	2023	1	2023
System Development: Reviews: EVA PDR	4	2020	4	2020
System Development: Reviews: EVA CDR	2	2021	2	2021
System Development: Reviews: EVA TRR	2	2022	2	2022
System Development: Reviews: EVA SVR/PRR	1	2023	1	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019		
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		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Test and Evaluation: EVA Developmental Testing		2	2021	4	2022
Test and Evaluation: EVA Operational Testing		4	2023	2	2024
Production Milestones: Contract Awards: EDM (RDTEN)		4	2019	4	2019
Production Milestones: Contract Awards: EVA LRIP 1 (OPN)		2	2023	2	2023
Production Milestones: Contract Awards: EVA LRIP 2 (OPN)		2	2024	2	2024
Deliveries: EDM (QTY 12)		2	2021	1	2023
Deliveries: EVA LRIP 1 (QTY 25)		4	2023	1	2024
Deliveries: EVA LRIP 2 (QTY 100)		4	2024	4	2024

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Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	0.927	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.927
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**  
 FY19 Base Plans - Proj. 9999 Congressional Add: NAVAIR PMA-202 will work with the Defense Innovation Unit (DIU), a Department of Defense (DoD) organization focused on accelerating commercial technologies in the U.S. Military, to develop wearable physiological monitoring systems and algorithms, as prototypes, to monitor for, predict, and/or alert aircrew to impending degradations in performance. The scope of this project will be consistent with the Research, Development, Test & Evaluation (RDT&E) of physiological monitoring systems.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Congressional Add:</b> T-45 and F/A-18 Physiological Episodes	0.927	0.000
<b>FY 2018 Accomplishments:</b> Physiological Episode Protection: Mitigated risk of loss of aircrew and Tactical and Training jet platforms due to Physiological Episodes using monitoring and alert systems. Developed, prototyped, and tested a physiological monitoring system that detects physiological episodes and provides a warning in time to enable the aircrew to execute emergency procedures and recover safely.		
<b>FY 2019 Plans:</b> N/A		
<b>Congressional Add:</b> Advance Aircrew Physiological Monitoring	0.000	10.000
<b>FY 2018 Accomplishments:</b> N/A		
<b>FY 2019 Plans:</b> Advance Aircrew Physiological Monitoring.		
<b>Congressional Adds Subtotals</b>	0.927	10.000

**C. Other Program Funding Summary (\$ in Millions)**  
 N/A

**Remarks**

**D. Acquisition Strategy**  
 Not applicable.

**E. Performance Metrics**  
 Not applicable.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2020 Navy													<b>Date:</b> March 2019		
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604264N / <i>Air Crew Systems Development</i>					<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>				

  

<b>Product Development (\$ in Millions)</b>				<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
T-45 and F/A-18 Physiological Episodes	C/CPFF	Various : Various	0.000	0.927	Jul 2018	0.000		0.000		-		0.000	0.000	0.927	-
Advance Aircrew Physiological Monitoring	C/CPFF	Various : Various	0.000	0.000		10.000	Feb 2019	0.000		-		0.000	0.000	10.000	10.000
<b>Subtotal</b>			0.000	0.927		10.000		0.000		-		0.000	0.000	10.927	N/A

  

	<b>Prior Years</b>	<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	0.000	0.927		10.000		0.000		-		0.000	0.000	10.927	N/A

  

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy														Date: March 2019																											
Appropriation/Budget Activity 1319 / 5														R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development								Project (Number/Name) 9999 / Congressional Adds																			
Proj 9999														FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
														1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
T-45 and F/A-18 Physiological Episodes																Contract Award																									
Advance Aircrew Physiological Monitoring																		Contract Award																							
																									</																



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2020 Navy			<b>Date:</b> March 2019
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604264N / <i>Air Crew Systems Development</i>	<b>Project (Number/Name)</b> 9999 / <i>Congressional Adds</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 9999</i></b>				
T-45 and F/A-18 Physiological Episodes: Schedule Detail	3	2018	3	2018
Advance Aircrew Physiological Monitoring: Schedule Detail	2	2019	2	2019