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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	94.849	7.418	15.014	12.679	-	12.679	13.084	5.723	5.606	5.724	Continuing	Continuing
0606: Aircrew System Development	94.849	7.418	15.014	12.679	-	12.679	13.084	5.723	5.606	5.724	Continuing	Continuing

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. Cost increase from FY14 to FY15 is due to the ramp up of the Electronic Knee Board program to support Integrated Test and the Enhanced Visual Acuity program to support Preliminary Design Review, Critical Design Review and Test Readiness Review events.

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. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	9.151	15.014	13.408	-	13.408
Current President's Budget	7.418	15.014	12.679	-	12.679
Total Adjustments	-1.733	-	-0.729	-	-0.729
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.600	-			
• SBIR/STTR Transfer	-0.133	-			
• Rate/Misc Adjustments	-	-	-0.729	-	-0.729

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Change Summary Explanation The FY 2016 funding request was reduced by \$628 thousand million to account for the availability of prior year execution balances. Schedule: 1. Acquisition Milestones: A. Laser Eye Protection (LEP) - Milestone B added, and Milestone C, Initial Operational Capability (IOC) and Full Rate Production (FRP) delayed due to extended revision of threat requirement and decision not to procure USAF Spectacle. B. Electronic Knee Board (EKB) - Early Operational Capability (EOC) moved from 3Q FY16 to 3Q FY17. Change reflects alignment of EKB acquisition with Joint Mission Planning System (JMPS) processes for hardware down-select and procurement in FY16 with concurrent test activities. EKB configuration and implementation of information assurance controls to be executed in early FY17. Full Operational Capability milestone corrected to IOC. C. Enhanced Visual Acuity (EVA) - FRP added. 2. System Development: A. EKB - An Application Development and Integration period was added to the schedule to depict the on-going developmental EKB efforts. 3. Test and Evaluation: A. EKB - Integrated Test (IT) was updated based on the EOC change and a second IT period was added which supports the IOC in FY19. 4. Production Milestones: A. LEP - Engineering Development Model (EDM) contract award added. Low Rate Initial Production (LRIP) and FRP contract awards changed to align with milestone decisions. B. EVA - Added EDM, FRP 1 and FRP 2 Contract Awards. 5. Deliveries: A. LEP - EDM quantity added at 50; LRIP 1 quantity added at 350; FRP 1 quantity updated from 461 to 785 and FRP 2 quantity updated from 267 to 801. B. EVA - Added EDM, FRP 1 and FRP 2 Contract Deliveries. Technical: N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0606: Aircrew System Development	94.849	7.418	15.014	12.679	-	12.679	13.084	5.723	5.606	5.724	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Cost increase from FY14 to FY15 is due to the ramp up of the Electronic Knee Board (EKB) program to support Integrated Test and the Enhanced Visual Acuity (EVA) program to support Preliminary Design Review (PDR), Critical Design Review (CDR) and Test Readiness Review (TRR) events.

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 includes enhanced visibility in degraded visual environment technology. AS 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, Survival Systems and Electronic Knee Board (EKB). EKB provides digital display that will allow aircrew to store, search, and view significant amounts of data required for mission accomplishment during flight operations. SOA provides for the yearly evaluation of the survival systems that provide upgraded performance, fill capability gaps, improve performance, safety and enhance survivability.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Aircrew System Development	4.667	9.990	11.397	-	11.397
Articles:	-	-	-	-	-
Description: Laser Eye Protection (LEP) Spectacles (both Self Protection and Multi-Wavelength), step-in visor and Laser Eye Protection Improvement Program (LEPIP). Enhanced Visual Acuity (EVA) includes enhanced visibility in degraded visual environment technology. AS includes SOA.					
FY 2014 Accomplishments: Laser Eye Protection (LEP): Continue research & development for next increment of threat spectacles. Enhanced Visual Acuity (EVA): Continue Technology Development.					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
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 Commercial Off-the-Shelf (COTS) items that provide upgrade performance, fill capability gaps, improve aircrew endurance, aircrew performance, safety and enhance survivability. FY 2015 Plans: Laser Eye Protection (LEP): Continue research & development for next increment of threat spectacles. Enhanced Visual Acuity (EVA): Continue development. 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 COTS items that provide upgrade performance, fill capability gaps, improve aircrew endurance, aircrew performance, safety and enhance survivability. FY 2016 Base Plans: Laser Eye Protection (LEP): Continue research & development for next increment of threat spectacles. Enhanced Visual Acuity (EVA): Continue development. 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, aircrew performance, safety and enhance survivability. FY 2016 OCO Plans: N/A						
Title: Aircraft Systems Development <div>Articles:</div> Description: Aircraft Systems include studies for Advance Crash Protection, Crashworthy Troop Seats, State of the Art (SOA), and Electronic Knee Board (EKB). FY 2014 Accomplishments: Electronic Knee Board (EKB): Conduct development, design reviews, and Authorization to Work. FY 2015 Plans: Electronic Knee Board (EKB): Continue development, complete design review, conduct integrated testing, and Authorizations to Work. FY 2016 Base Plans:		2.751 -	5.024 -	1.282 -	- -	1.282 -

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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 2014	FY 2015						
Electronic Knee Board (EKB): Continue development, complete design review, select configuration 1 hardware, conduct integrated testing, and Authorizations to Work. Establish logistics support plan to support first hardware procurement. 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, performance, safety and enhance survivability. FY 2016 OCO Plans: N/A											
Accomplishments/Planned Programs Subtotals				7.418	15.014						
				FY 2016 Base	FY 2016 OCO						
				12.679	-						
					12.679						
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/4244: Aviation Life Support	29.588	-	-	-	-	-	-	-	-	-	318.357
• OPN/4268: Aviation Life Support	-	28.602	30.586	-	30.586	31.110	29.554	30.472	44.390	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Commercial Off-The-Shelf /Non-Developmental Items where possible, cost type contracts. Majority of programs non-ACAT programs.											
E. Performance Metrics											
Electronic Knee Board: Performance Metrics to include Design Review, Early Operational Capability (EOC) and Initial Operational Capability (IOC). Enhanced Visual Acuity: Performance Metrics to include Preliminary Design Review (PDR), Critical Design Review (CDR), Milestone B, Milestone C and IOC.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
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 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	5.580	1.163	Jan 2014	0.992	Apr 2015	1.694	Apr 2016	-		1.694	2.159	11.588	-
Systems Eng Laser Eye Protection (LEP)	C/FFP	NAVAIR : Patuxent River, MD	0.000	-		-		0.255	Feb 2016	-		0.255	-	0.255	0.255
Systems Eng Aircrew Systems	WR	Various : Various	6.818	0.787	Jan 2014	0.801	Feb 2015	0.439	Feb 2016	-		0.439	20.548	29.393	-
Systems Eng Aircraft Systems	WR	Various : Various	40.942	0.640	Feb 2014	0.821	Feb 2015	0.404	Feb 2016	-		0.404	0.522	43.329	-
System Eng Enhanced Visual Acuity	WR	Various : Various	0.352	2.997	Feb 2014	8.569	Feb 2015	9.009	Feb 2016	-		9.009	11.969	32.896	-
System Eng Electronic Knee Board	WR	NAWCAD : Patuxent River, MD	0.000	0.802	Feb 2014	0.851	Feb 2015	0.834	Feb 2016	-		0.834	1.402	3.889	-
System Eng Electronic Knee Board	Various	Various : Various	0.000	0.995	Feb 2014	2.940	Feb 2015	-		-		-	1.024	4.959	-
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	28.147	-		-		-		-		-	-	28.147	-
Subtotal			81.839	7.384		14.974		12.635		-		12.635	37.624	154.456	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	1.087	0.034	Dec 2013	0.040	Dec 2014	0.044	Dec 2015	-		0.044	Continuing	Continuing	Continuing
Prior year Mgmt Svcs no longer funded in the FYDP	Various	Various : Various	11.923	-		-		-		-		-	-	11.923	-
Subtotal			13.010	0.034		0.040		0.044		-		0.044	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			94.849	7.418		15.014		12.679		-		12.679	-	-	-

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	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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PE 0604264N: *Air Crew Systems Development*
Navy

R-1 Line #100

[illegible]PE 0604264N / Air Crew Systems
Development

0606 / Aircrew System Development

[illegible]

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PE 0604264N: *Air Crew Systems Development*
Navy

R-1 Line #100

1319 / 5

PE 0604264N / Air Crew Systems Development

0606 / Aircrew System Development

2016PB - 0604264N - 0606

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

Appropriation/Budget Activity

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R-1 Program Element (Number/Name)

PE 0604264N / Air Crew Systems
Development

Project (Number/Name)

0606 / Aircrew System Development

Enhanced Visual Acuity (EVA)	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Acquisition Milestones																												
Milestones		Post MS B ▲														MS C ▲		FRPD ◆	IOC ▲									
System Development																												
Reviews					PDR ■	CDR ■		TRR ■					SVR/PRR ■															
Test and Evaluation																												
									DT																			
Production Milestones																												
Contract Awards								EDM ●								LRIP 1 ●		LRIP 2 ●			FRP 1 ●					FRP 2 ●		
Deliveries																												
								EDM QTY 25 (RDTEN)								LRIP 1 QTY 6 (OPN)		LRIP 2 QTY 64 (OPN)		FRP 1 QTY 80 (OPN)					FRP 2 QTY 80 (OPN)			

2016PB - 0604264N - 0606 EDM Units will be used for Operational Testing

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy

Date: February 2015

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
Laser Eye Protection (LEP)				
Acquisition Milestones: Milestones: LEP Milestone B	2	2016	2	2016
Acquisition Milestones: Milestones: LEP: Milestone C	2	2018	2	2018
Acquisition Milestones: Milestones: LEP: FRP Decision	4	2018	4	2018
Acquisition Milestones: Milestones: LEP IOC	2	2019	2	2019
System Development: Reviews: SRR 1	2	2015	2	2015
System Development: Reviews: SFR/SRR 2	3	2016	3	2016
System Development: Reviews: CDR	1	2017	1	2017
System Development: Reviews: TRR	2	2017	2	2017
System Development: Reviews: SVR/PRR	2	2018	2	2018
System Development: Reviews: PCA	2	2019	2	2019
Test & Evaluation: DT	2	2017	4	2017
Production Milestones: Contract Awards: LEP EDM	2	2016	2	2016
Production Milestones: Contract Awards: LEP LRIP 1	2	2018	2	2018
Production Milestones: Contract Awards: LEP FRP 1	1	2019	1	2019
Production Milestones: Contract Awards: LEP FRP 2	1	2020	1	2020
Deliveries: LEP EDM Qty 50	3	2016	1	2017
Deliveries: LEP LRIP Qty 350	3	2018	2	2019
Deliveries: LEP FRP 1 Qty 785	3	2019	2	2020
Deliveries: LEP FRP 2 Qty 801	3	2020	4	2020
Electronic Knee Board (EKB)				
Acquisition Milestones: Milestones: EKB EOC	3	2017	3	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604264N / Air Crew Systems Development		Project (Number/Name) 0606 / Aircrew System Development	
		Start		End	
Events by Sub Project		Quarter	Year	Quarter	Year
Acquisition Milestones: Milestones: EKB IOC		4	2019	4	2019
System Development: Reviews: Design Review Complete		1	2014	1	2015
System Development: Reviews: Application Development and Integration		2	2015	4	2020
Test and Evaluation: EKB Integrated Testing to Support EOC		2	2015	2	2016
Test and Evaluation: EKB Integrated Testing to Support IOC		3	2017	3	2018
Production Milestones: Contract Awards: EKB FRP 1 (OPN)		2	2016	2	2016
Production Milestones: Contract Awards: EKB FRP 2 (OPN)		2	2017	2	2017
Production Milestones: Contract Awards: EKB FRP 3 (OPN)		2	2018	2	2018
Production Milestones: Contract Awards: EKB FRP 4 (OPN)		2	2019	2	2019
Production Milestones: Contract Awards: EKP FRP 5 (OPN)		2	2020	2	2020
Production Milestones: Deliveries: EKB FRP 1 Qty 1736		3	2016	4	2016
Production Milestones: Deliveries: EKB FRP 2 Qty 2236		3	2017	4	2017
Production Milestones: Deliveries: EKB FRP 3 Qty 1160		3	2018	4	2018
Production Milestones: Deliveries: EKB FRP 4 Qty 1160		3	2019	4	2019
Production Milestones: Deliveries: EKB FRP 5 Qty 1160		3	2020	4	2020
Enhanced Visual Acuity (EVA)					
Acquisition Milestones: Milestones: EVA Milestone B		2	2014	2	2014
Acquisition Milestones: Milestones: EVA Milestone C		4	2017	4	2017
Acquisition Milestones: Milestones: FRP Decision		2	2018	2	2018
Acquisition Milestones: Milestones: EVA IOC		3	2018	3	2018
System Development: Reviews: EVA PDR		1	2015	1	2015
System Development: Reviews: EVA CDR		2	2015	2	2015
System Development: Reviews: EVA TRR		4	2015	4	2015
System Development: Reviews: EVA SVR/PRR		1	2017	1	2017
Test and Evaluation: EVA Developmental Testing		1	2016	1	2017

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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
		Start		End
Events by Sub Project		Quarter	Year	Quarter Year
Test and Evaluation: EVA Operational Testing		4	2017	1 2018
Production Milestones: Contract Awards: EDM		3	2015	3 2015
Production Milestones: Contract Awards: EVA LRIP 1 (OPN)		4	2017	4 2017
Production Milestones: Contract Awards: EVA LRIP 2 (OPN)		2	2018	2 2018
Production Milestones: Contract Awards: EVA FRP 1		2	2019	2 2019
Production Milestones: Contract Awards: EVA FRP 2		2	2020	2 2020
Deliveries: EMD		3	2015	4 2015
Deliveries: EVA LRIP 1 (OPN)		4	2017	1 2018
Deliveries: EVA LRIP 2 (OPN)		2	2018	1 2019
Deliveries: EVA FRP 1		2	2019	1 2020
Deliveries: EVA FRP 2		2	2020	4 2020