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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604282N I (U) <i>Next Generation Jammer (NGJ) Increment II</i>							
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	29.645	55.194	93.482	111.068	-	111.068	214.554	240.567	236.691	241.472	2,276.475	3,499.148
3380: <i>Next Generation Jammer Inc II</i>	29.645	55.194	93.482	111.068	-	111.068	214.554	240.567	236.691	241.472	2,276.475	3,499.148
Program MDAP/MAIS Code:												
Project MDAP/MAIS Code(s): P520												
<u>A. Mission Description and Budget Item Justification</u>												
<p>The Next Generation Jammer (NGJ) is the next step in the evolution of Airborne Electronic Attack (AEA) and is a critical capability necessary to address current, emerging, and evolving Electronic Warfare gaps, ensure kill chain wholeness against growing threat capabilities and capacity, keep pace with enemy threat weapon systems' advancements, and support the continuous expansion of the AEA mission areas that exceed the capability of currently fielded systems. NGJ will utilize enhanced techniques and tactics to deliver significantly improved radar and communications jamming effectiveness as well as other classified capabilities. Utilizing an Open Systems Architecture that supports software and hardware updates to rapidly counter emergent and evolving threats, NGJ is a key enabler and force multiplier for operations across the spectrum of missions defined in the Defense Strategic Guidance, including strike warfare, projecting power despite highly contested environments, and counterinsurgency/irregular warfare. NGJ will also address the shortfalls in scalability, flexibility, supportability, interoperability, availability, and capability of the existing AN/ALQ-99 Tactical Jamming System.</p> <p>This Program Element (PE 0604282N) supports the Next Generation Jammer - Low Band (NGJ-LB) (formerly known as Next Generation Jammer Increment 2) program. NGJ-LB will address AEA capability and sufficiency gaps against enemy threats operating in the lower frequency bands of the electromagnetic spectrum. NGJ-LB will provide the ability to effectively engage enemy threats from increased stand-off distances, employ increased capacity (number of jamming assignments) against enemy targets, and support agile employment by operators. The NGJ-LB system will be integrated on the EA-18G tactical aircraft and will augment and then replace the legacy AN/ALQ-99 Tactical Jamming System Low-Band pods.</p>												

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Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604282N I (U)Next Generation Jammer (NGJ) Increment II			
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	66.686	115.253	169.567	-	169.567
Current President's Budget	55.194	93.482	111.068	-	111.068
Total Adjustments	-11.492	-21.771	-58.499	-	-58.499
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-21.771			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.133	0.000			
• Program Adjustments	0.000	0.000	-17.492	-	-17.492
• Rate/Misc Adjustments	0.000	0.000	-41.007	-	-41.007
• Congressional Directed Reductions Adjustments	-10.359	-	-	-	-
Change Summary Explanation					
The FY 2020 funding request was reduced by \$16.831 million to account for the availability of prior year execution balances.					
Technical: Not applicable.					
Schedule: Pending the program decision point path forward (4th Qtr. 2019) and authority to release either the RFP for EMD or the Rapid Prototype effort (pursuant to 10 U.S.C. 2302 Section 804 and associated Navy Guidance for Middle Tier Acquisition Programs) - The following changes have been made: Systems Development start of H Build Integration changed from 4th Qtr. FY 2020 to 1st Qtr. FY 2020. Engineering Milestones System Functional Review - 2 moved from 2nd Qtr. FY 2022 to 4th Qtr. FY 2020. Engineering Milestones Preliminary Design Review moved from 4th Qtr. FY 2022 to 1st Qtr. FY 2021. Engineering Milestones System Readiness Review - 2 moved from 3rd Qtr. FY 2021 to 4th Qtr. FY 2020. Engineering Milestones System Readiness Review - 1/ System Functional Review - 1 moved from 1st Qtr. FY 2019 to 3rd Qtr. FY 2019.					

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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 0604282N / (U)Next Generation Jammer (NGJ) Increment II				Project (Number/Name) 3380 / Next Generation Jammer Inc II			
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
3380: Next Generation Jammer Inc II	29.645	55.194	93.482	111.068	-	111.068	214.554	240.567	236.691	241.472	2,276.475	3,499.148
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: P520												
A. Mission Description and Budget Item Justification												
This Program Element (PE 0604282N) supports the Next Generation Jammer - Low Band (NGJ-LB) program. NGJ-LB will address Airborne Electronic Attack (AEA) capability and sufficiency gaps against enemy threats operating in the lower frequency bands of the electromagnetic spectrum. NGJ-LB will provide the ability to effectively engage enemy threats from increased stand-off distances, employ increased capacity (number of jamming assignments) against enemy targets, and support agile employment by operators. The NGJ-LB system will be integrated on the EA-18G tactical aircraft and will augment and then replace the aging AN/ALQ-99 Tactical Jamming System Low-Band pods.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)												
							FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	
Title: Next Generation Jammer Low Band Primary Hardware Development							33.733	56.980	43.176	0.000	43.176	
Articles:							-	-	-	-	-	
FY 2019 Plans:												
Continue execution of the NGJ-LB Demonstration of Existing Technologies (DET) contracts to inform the acquisition strategy, and development of specification and other products to support the 4th Qtr FY 2019 program decision point and authority to release RFP for an Engineering and Manufacturing Development (EMD) program or a Rapid Prototype effort pursuant to 10 U.S.C. 2302 Section 804 and associated Navy guidance for Middle Tier Acquisition programs.												
FY 2020 Base Plans:												
Complete execution of the two DET contracts, while exploring additional DET related efforts, and award EMD/ Rapid Prototype contract for follow-on NJG-LB technology development efforts based on technical assessment of data analyzed during the DET phase. Further development of specification and other products to support design, integration, test, and assessment efforts.												
FY 2020 OCO Plans:												
N/A												
FY 2019 to FY 2020 Increase/Decrease Statement:												

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Funding decreases from FY 2019 to FY 2020 due to multiple DET Contracts concluding and EMD or Rapid prototype planned award in 3Q FY 2020.						
Title: Next Generation Jammer Low Band Systems Engineering Articles: FY 2019 Plans: Start source selection planning for NGJ-LB development contract award in 3rd Qtr FY 2020. Conduct Technical Maturation Assessment utilizing data received from the DET contractors. Execute NGJ-LB System Readiness Review/System Functional Review (SRR-1/SFR-1) for Rapid Prototype solutions and associated program acquisition planning products. FY 2020 Base Plans: Conduct source selection for an Engineering and Manufacturing Development (EMD) contract or a Rapid Prototype contract pursuant to 10 U.S.C. 2302 Section 804 and associated Navy guidance for Middle Tier Acquisition programs. Refinement of system specifications to support system requirements (SRR-2/SFR-2) and preliminary design reviews (PDR). Investigate, design, develop, and evaluate related advanced hardware and software technologies. FY 2020 OCO Plans: N/A FY 2019 to FY 2020 Increase/Decrease Statement: Increase from FY 2019 to FY 2020 due to systems engineering requirement in support of development contract award and the systems engineering associated with related advanced hardware and software technologies.		19.224 -	33.534 -	46.119 -	0.000 -	46.119 -
Title: Next Generation Jammer Low Band Support & Management Services Articles: FY 2019 Plans: Provide Support and Management Services associated with the NGJ-LB Program. FY 2020 Base Plans: Provide Support and Management Services associated with the NGJ-LB Program. FY 2020 OCO Plans: N/A FY 2019 to FY 2020 Increase/Decrease Statement:		2.237 -	2.856 -	2.913 -	0.000 -	2.913 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Increase from FY 2019 to FY 2020 due to escalation of efforts.						
Title: Next Generation Jammer Low Band Aircraft Integration Articles:		0.000 -	0.000 -	16.532 -	0.000 -	16.532 -
FY 2019 Plans: N/A						
FY 2020 Base Plans: Utilize data and analysis products for support of Computational Fluid Dynamics (CFD) analysis, wind tunnel test and integration software (H Build) development for interface into the EA-18G. Refinement of the Statement of Requirements (SOR) for aircraft System Configuration Set (SCS) software build including the aircraft integration statement of work and contract award.						
FY 2020 OCO Plans: N/A						
FY 2019 to FY 2020 Increase/Decrease Statement: Increase from FY 2019 to FY 2020 due to Aircraft Integration as program activity is initiated.						
Title: Next Generation Jammer Low Band Test & Evaluation Articles:		0.000 -	0.112 -	2.328 -	0.000 -	2.328 -
FY 2019 Plans: Begin execution of tests for each DET contractor at the Facility for Antenna Radar Cross Section Measurements (FARM) and execution of resource and infrastructure improvements plan to support DET and follow-on test activities.						
FY 2020 Base Plans: Complete DET Assessment. Development of an Assessment Plan or Test & Evaluation Master Plan (TEMP) to support the technical reviews and define the aeromechanical mission system and the integration flight test program. Continue resource and infrastructure improvements to support DET and follow-on test activities.						
FY 2020 OCO Plans: N/A						
FY 2019 to FY 2020 Increase/Decrease Statement:						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Increase from FY 2019 to FY 2020 is due to increased activity for test and evaluation.					
Accomplishments/Planned Programs Subtotals	55.194	93.482	111.068	0.000	111.068
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					
D. Acquisition Strategy					
NGJ-LB program is designated a pre-Major Defense Acquisition Program (pre-MDAP), MDAP program number P520. The activity will focus on technology demonstrations and supporting analysis to inform the acquisition strategy, design engineering trades, and the identification of requirements and available technologies for the development program. Execution of the DET activities will validate existing technology maturity for low band applications on the EA-18G and inform the decision to pursue an EMD program or a Rapid Prototype effort pursuant to 10 U.S.C. 2302 Section 804 and associated Navy guidance for Middle Tier Acquisition programs.					
E. Performance Metrics					
Utilize studies and technology demonstration efforts for FY 2020 award of EMD or Rapid Prototype Contact.					

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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 0604282N / (U)Next Generation Jammer (NGJ) Increment II				Project (Number/Name) 3380 / Next Generation Jammer Inc II					
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
Primary H/W Dev - Aircraft Specification Refinement	SS/CPIF	Boeing : St. Louis, MO	0.838	0.424	Aug 2018	5.404	Feb 2019	5.500	Feb 2020	-		5.500	0.000	12.166	12.166
Primary H/W Dev - Technology Demonstrators 1	C/CPFF	L3 : Salt Lake City, UT	0.000	14.704	Oct 2018	12.000	Nov 2018	9.054	Nov 2019	-		9.054	0.000	35.758	35.758
Primary H/W Dev - Technology Demonstrators 2	C/CPFF	NGC : Bethpage, NY	0.000	14.704	Oct 2018	12.000	Nov 2018	8.477	Nov 2019	-		8.477	0.000	35.181	35.181
Primary H/W Dev - Additional Technology Demonstrator effort	TBD	TBD : TBD	0.000	0.000		27.577	Sep 2019	0.000		-		0.000	0.000	27.577	-
TBD	TBD	TBD : TBD	0.000	3.901	Sep 2019	0.000		0.000		-		0.000	0.000	3.901	-
Primary H/W Dev - EMD or Rapid Prototype	C/CPFF	TBD : TBD	0.000	0.000		0.000		20.146	May 2020	-		20.146	1,768.455	1,788.601	1,788.601
Aircraft Integration - Study	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		2.356	Dec 2019	-		2.356	53.831	56.187	-
Aircraft Integration	SS/CPIF	Boeing : St. Louis, MO	0.000	0.000		0.000		7.190	Aug 2020	-		7.190	180.103	187.293	187.293
Software Integration	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.000		-		0.000	4.063	4.063	-
Software Integration	SS/CPIF	Boeing : St. Louis, MO	0.000	0.000		0.000		5.186	Oct 2019	-		5.186	115.205	120.391	120.391
Software Integration	SS/CPIF	NGC : Bethpage, NY	0.000	0.000		0.000		1.800	Aug 2020	-		1.800	67.592	69.392	69.392
Software Integration	WR	NAWCWD : Point Mugu, CA	0.000	0.000		0.000		0.000		-		0.000	89.194	89.194	-
Systems Engineering	TBD	NSMA : Arlington, VA	0.000	0.000		0.000		6.282	Dec 2019	-		6.282	78.337	84.619	84.619
Systems Engineering	WR	NAWCAD : Patuxent River, MD	8.077	10.353	Dec 2017	17.541	Dec 2018	21.329	Dec 2019	-		21.329	191.020	248.320	-
Systems Engineering	WR	NAWCWD : Point Mugu, CA	2.585	1.428	Dec 2017	4.527	Dec 2018	5.556	Dec 2019	-		5.556	55.284	69.380	-

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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 Engineering	WR	NSWC Crane : Crane, IN	0.796	1.783	Dec 2017	2.077	Dec 2018	2.408	Dec 2019	-		2.408	28.936	36.000	-
Systems Engineering	SS/CPFF	JHU : Laurel, MD	1.900	5.060	Dec 2017	7.442	Dec 2018	7.956	Dec 2019	-		7.956	91.769	114.127	114.127
Systems Engineering	Various	Various : Various	0.090	0.600	Dec 2017	1.946	Dec 2018	2.587	Dec 2019	-		2.587	25.747	30.970	-
Systems Engineering - Trainer	TBD	TBD : TBD	0.000	0.000		0.000		0.000		-		0.000	6.351	6.351	-
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	14.331	0.000		0.000		0.000		-		0.000	0.000	14.331	-
Subtotal			28.617	52.957		90.514		105.827		-		105.827	2,755.887	3,033.802	N/A
Remarks															
Funding increases from FY 2019 to FY 2020 due to the award of EMD or Rapid Prototype contract and integration efforts. FY 2018 TBD line has been reprogrammed via BTR. FY 2019 Additional Technology Demonstrator funding is to explore additional DET related opportunities.															
Support (\$ 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
Eng & Tech Srvc (Non FFRDC)	Various	Various : Various	0.916	2.217	Dec 2017	2.743	Dec 2018	2.798	Dec 2019	-		2.798	27.834	36.508	36.509
Subtotal			0.916	2.217		2.743		2.798		-		2.798	27.834	36.508	N/A
Test and Evaluation (\$ 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
Development T&E - TEST DT	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000	Nov 2018	1.100	Nov 2019	-		1.100	291.796	292.896	-
Development T&E - COTF	SS/FFP	FSC : San Diego, CA	0.108	0.000		0.112	Nov 2018	0.115	Nov 2019	-		0.115	2.399	2.734	2.734
Development T&E - Wind Tunnel	TBD	TBD : TBD	0.000	0.000		0.000		1.113	Jul 2020	-		1.113	8.691	9.804	-

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Test and Evaluation (\$ 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
Development T&E VX-23/31 - Engineers	TBD	Boeing : St. Louis, MO	0.000	0.000		0.000		0.000		-		0.000	60.931	60.931	60.931
Development T&E VX-23/31 - Maintenance	TBD	Boeing : St. Louis, MO	0.000	0.000		0.000		0.000		-		0.000	37.413	37.413	37.413
Operational T&E - TEST OT	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	22.974	22.974	-
Subtotal			0.108	0.000		0.112		2.328		-		2.328	424.204	426.752	N/A
Remarks FY19 and FY20 funding to support contractor Demonstration of Existing Technology (DET) test activity as well as test planning and facility/capability based testing (CBTE) effort.															
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	Various	Various : Various	0.004	0.020	Oct 2017	0.113	Oct 2018	0.115	Oct 2019	-		0.115	1.834	2.086	-
Subtotal			0.004	0.020		0.113		0.115		-		0.115	1.834	2.086	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
Project Cost Totals			29.645	55.194		93.482		111.068		-		111.068	3,209.759	3,499.148	N/A
Remarks															

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PE 0604282N: (U)Next Generation Jammer (NGJ) Incremen...
Navy

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R-1 Program Element (Number/Name)
PE 0604282N / (U)Next Generation Jammer
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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy

Date: March 2019

Appropriation/Budget Activity

1319 / 5

R-1 Program Element (Number/Name)

PE 0604282N / (U)Next Generation Jammer
(NGJ) Increment II

Project (Number/Name)

3380 / Next Generation Jammer Inc II

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Next Generation Jammer Low Band (Increment II)				
Acquisition Milestones: Program Decision	4	2019	4	2019
Systems Development: Demonstration of Existing Technologies (DET)	1	2019	3	2020
Systems Development: Rapid Prototype or EMD	3	2020	4	2024
Systems Development: Aircraft (H Build) Integration	1	2020	4	2024
Test & Evaluation: DET Assessment	4	2019	2	2020
Test & Evaluation: Assessment Plan or Test & Evaluation Master Plan	3	2020	3	2020
Engineering Milestones: Preliminary Design Review	1	2021	1	2021
Engineering Milestones: Critical Design Review	3	2022	3	2022
Engineering Milestones: Physical Configuration Audit	3	2023	3	2023
Engineering Milestones: Program Requirements Baseline Review	4	2018	4	2018
Engineering Milestones: System Readiness Review - 1 / System Functional Review - 1	3	2019	3	2019
Engineering Milestones: System Readiness Review - 2 / System Functional Review - 2	4	2020	4	2020
Contract Awards: DET Contract Award(s)	1	2019	1	2019
Contract Awards: EMD or Rapid Prototype	3	2020	3	2020