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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	1,160.116	141.383	115.419	35.750	-	35.750	29.840	0.000	0.000	0.000	0.000	1,482.508
3337: <i>Offensive Anti-Surface Warfare (OASuW) Weapon</i>	1,160.116	122.076	65.419	35.750	-	35.750	29.840	0.000	0.000	0.000	0.000	1,413.201
9999: <i>Congressional Adds</i>	0.000	19.307	50.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	69.307

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): P449

A. Mission Description and Budget Item Justification

Offensive Anti-Surface Warfare (OASuW) will be an offensive weapon system that can be air, surface, and subsurface launched in the maritime battle space environment. OASuW is a vital component of the Joint Force Anti-Surface Warfare capability and incorporate new and emergent technologies to support an increased offensive strike capability. Due to emerging threats, the fleet issued an Urgent Operational Needs Statement (UONS) that identified a capability gap for a long-range anti-ship missile to be filled by 2018. Directly supporting this UONS and significantly reducing Joint Force warfighting risks, the U.S. Navy initiated OASuW Increment 1 (OASuW-1), which leverages the Defense Advanced Research Projects Agency (DARPA)/Office of Naval Research Long Range Anti-Ship Missile (LRASM) demonstration program to deliver an Early Operational Capability (EOC) in the required timeframe. LRASM fills the most urgent air-launched capability gap to complement existing ASuW weapon systems and positions the Department of Defense to address evolving surface warfare threats. LRASM is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of LRASM has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically, LRASM directly contributes to building a more lethal force and is a critical enabler for joint lethality in contested environments; deterring adversaries from aggression; ensuring common domains remain open and maintaining favorable regional balances of power.

The OASuW program is part of the Navy's Integrated Fire Control (IFC) approach to address advanced threat capabilities in the Anti-Access/Area-Denial (A2AD) environment. IFC solutions enable individual system capabilities to be leveraged across an effects chain, placing the full spectrum of tactical capability in the hands of the warfighter. IFC solutions that push engagement distances beyond the launch platform's radar horizon and allows the U.S. Navy to operate in, and control, contested battle space in littoral waters and A2/AD environments are increasingly critical as more and more scenarios require compressed and coordinated fire control timelines.

Budget Item Justification: OASuW-1

The program is leveraging DoDI 5000.02i Model 4 to structure the acquisition strategy, which includes a highly integrated and concurrent transition design, integration, and developmental / operational test program to meet the EOC schedule required by the UONS. To manage the accelerated timeline and resulting concurrency, the program uses a structured Knowledge Point review process that support decisions regarding significant program events such as transition from design to integration phase and contract awards. These reviews also provide senior DoD leadership the opportunity to provide focused support and active management of technical and acquisition risk and are chaired by the Service Acquisition Executive, ASN(RDA). The knowledge points are similar to acquisition milestone reviews, but occur more frequently and are tailored to program-specific milestone events. The program met statutory requirements associated with Milestone B at Knowledge Point 3. In

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addition to the Knowledge Point reviews, the program also conducts Executive Steering Board reviews, chaired by the MDA. Supporting these reviews, the associated engineering approach is designed to mitigate resulting risk by implementing a rolling-wave engineering progression based on the NAVAIR Systems Engineering Technical Review (SETR) process to enable detailed planning and decisions as the system matures. This process includes capstone SETR events that are tailored reviews using standard design review criteria. Subsequent to baseline OASuW Increment 1, the LRASM v1.1 capability improvements program will continue in the same manner with continued reviews and test events to achieve incorporation of those improvements in future production units.

This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	139.261	65.419	40.438	-	40.438
Current President's Budget	141.383	115.419	35.750	-	35.750
Total Adjustments	2.122	50.000	-4.688	-	-4.688
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	50.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.500	0.000			
• SBIR/STTR Transfer	-3.378	0.000			
• Program Adjustments	0.000	0.000	-5.150	-	-5.150
• Rate/Misc Adjustments	0.000	0.000	0.462	-	0.462

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

Project: 9999: *Congressional Adds*

Congressional Add: *Operational Test Requirements for Additional Capabilities*

Congressional Add: *LRASM 1.1 capability improvements*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2019	FY 2020
Congressional Add: <i>Operational Test Requirements for Additional Capabilities</i>	19.307	0.000
Congressional Add: <i>LRASM 1.1 capability improvements</i>	0.000	50.000
Congressional Add Subtotals for Project: 9999	19.307	50.000
Congressional Add Totals for all Projects	19.307	50.000

Change Summary Explanation

LRASM v1.1 capability improvements efforts that initiated in FY 2019 continue through FY 2022 to ensure tactical dominance for the warfighter over a longer period of time by providing sanctuary employment against capital warships. Enhancements include range increase, improved communication capabilities, increased survivability and the associated testing for LRASM. Decrease in FY 2021 funding from FY 2020 is due to LRASM v1.1 developmental material

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procurements already on order. FY 2021 funds continue labor for development integration and testing of the v1.1 capability. The FY 2021 funding request was reduced by \$5.0M to account for the availability of prior year execution balances.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>				Project (Number/Name) 3337 / <i>Offensive Anti-Surface Warfare (OASuW) Weapon</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3337: <i>Offensive Anti-Surface Warfare (OASuW) Weapon</i>	1,160.116	122.076	65.419	35.750	-	35.750	29.840	0.000	0.000	0.000	0.000	1,413.201
Quantity of RDT&E Articles	13	-	-	-	-	-	-	-	-	-	-	-

Project MDAP/MAIS Code: P449

A. Mission Description and Budget Item Justification

Offensive Anti-Surface Warfare (OASuW) is an offensive weapon system that can be air, surface, and subsurface launched in the maritime battle space environment. OASuW is a vital component of the Joint Force Anti-Surface Warfare capability and incorporate new and emergent technologies to support an increased offensive strike capability. Due to emerging threats, the fleet issued an Urgent Operational Needs Statement (UONS) that identified a capability gap for a long-range anti-ship missile to be filled by 2018. Directly supporting this UONS and significantly reducing Joint Force warfighting risks, the U.S. Navy initiated OASuW Increment 1 (OASuW-1), which leverages the Defense Advanced Research Projects Agency(DARPA)/Office of Naval Research Long Range Anti-Ship Missile (LRASM) demonstration program to deliver an Early Operational Capability (EOC) in the required timeframe. LRASM fills the most urgent air-launched capability gap to complement existing ASuW weapon systems and positions the Department of Defense to address evolving surface warfare threats. LRASM is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of LRASM has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically, LRASM directly contributes to building a more lethal force and is a critical enabler for joint lethality in contested environments; deterring adversaries from aggression; ensuring common domains remain open and maintaining favorable regional balances of power.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: OASuW Development Program	122.076	65.419	35.750	0.000	35.750
Articles:	-	-	-	-	-
FY 2020 Plans: The development, integration and test phase of the program will continue in FY 2020 for the Long Range Anti-Shape Missile (LRASM) v1.1 capability improvements efforts. Continued development for LRASM v1.1 capability improvements is programmed to ensure tactical dominance for the warfighter over a longer period of time by providing sanctuary employment against capital warships. This continued development expands the mission set to address evolving, persistent and dynamic threats and continues to fill gaps in strike warfare. The development and follow-on test efforts added include range increase, improved communication capabilities, and increased survivability. These expanded mission set efforts will integrate into future Lot procurements.					
FY 2021 Base Plans:					

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continued development, integration and test for the OASuW Increment 1 LRASM v1.1 capability improvements to ensure tactical dominance for the warfighter over a longer period of time by providing sanctuary employment against capital warships. FY 2021 OCO Plans: N/A FY 2020 to FY 2021 Increase/Decrease Statement: Decrease of \$29.699 million from FY 2020 to FY 2021 due to progression of development efforts; developmental related material has previously been ordered and FY 2021 funds continued labor to support integration and testing. The FY 2021 funding request was also reduced by \$5.0M to account for the availability of prior year execution balances.					
Accomplishments/Planned Programs Subtotals	122.076	65.419	35.750	0.000	35.750

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• WPN/2291: <i>LRASM</i>	119.790	72.544	168.845	-	168.845	164.846	164.669	160.646	60.512	0.000	1,091.028
• MPAF/8010: <i>LRASM</i>	54.385	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	187.524

Remarks

U.S. Navy WP,N funding supports the following quantities:

- FY17 - 15 (FY17 funding procured 14 Lot 1 units and 1 unit that was priced at and part of the Lot 2 procurement)
- FY18 - 34 (Lot 2)
- FY19 - 33 (Lot 3)
- FY20 - 17 (Lot 4)
- FY21 - 48 (Lot 5)
- FY22 - 48 (Lot 6)
- FY23 - 48 (Lot 7)
- FY24 - 48 (Lot 8)
- FY25 - 18 (Lot 9)

U.S. Air Force MP,AF funding supports the following quantities:

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
FY17 - 19 (Lot 1)											
FY18 - 16 (1 unit is priced at and part of FY 2017 Lot 1 procurement to achieve 20 total Air Force units in Lot 1; 15 units are with the FY 2018 Lot 2 procurement)											
FY19 - 15 (Lot 3)											
USAF currently working outyears budget profile (FY 2023 - FY 2025)											

D. Acquisition Strategy

OASuW-1 is using an accelerated acquisition approach, with streamlined governance to transition the DARPA/ONR-demonstrated Long Range Anti-Ship Missile (LRASM) for use as an air-launched weapon from USAF and USN platforms. LRASM is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. LRASM supports greater performance of the acquisition system and is demonstrating the delivery of performance at the speed of relevance; organizational structure that supports innovation with a rapid approach that dramatically decreases the timeline from development to fielding. The program is leveraging DoDI 5000.02i Model 4 to structure the acquisition strategy, which includes a highly integrated and concurrent transition design, integration, and developmental / operational test program which successfully met the Early Operation Capability (EOC) fielding threshold required by an Urgent Operational Need Statement (UONS) issued by the fleet. The program is structured in three phases: Technology Maturation, Integration and Test, and Procurement. To manage the accelerated timeline and resulting concurrency, the program uses a structured Knowledge Point review process that support decisions regarding significant program events such as transition from design to integration phase and contract awards. These reviews also provide senior DoD leadership the opportunity to provide focused support and active management of technical and acquisition risk and are chaired by the Service Acquisition Executive, ASN(RDA) (delegated MDA), and the Deputy Director of DARPA. The knowledge points are similar to acquisition milestone reviews, but occur more frequently. Knowledge Point 7 supported Lot 3 procurement and Knowledge Point 8 supported USN EOC decision. The program met the statutory requirements associated with Milestone B at Knowledge Point 3. In addition to the Knowledge Point reviews, the program also conducts Executive Steering Board reviews (also chaired by the MDA). Supporting these reviews, the associated engineering approach is designed to mitigate resulting risk by implementing a rolling-wave engineering progression based on the NAVAIR Systems Engineering Technical Review (SETR) process to enable detailed planning and decisions as the system matures. The LRASM v1.1 capability improvements program, which initiated in FY 2019, follows in the same manner with continued reviews and test events to achieve incorporation of those improvements on future production units.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 3337 / <i>Offensive Anti-Surface Warfare (OASuW) Weapon</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Product Development	C/CPIF	Lockheed Martin Missile and Fire Control : Orlando, FL	846.797	79.248	Oct 2018	43.147	Apr 2020	16.999	Oct 2020	-		16.999	14.179	1,000.370	1,000.107
Product Development	C/CPFF	Boeing : St. Louis, MO	60.539	0.964	Mar 2019	0.630	Mar 2020	0.256	Mar 2021	-		0.256	0.000	62.389	62.613
Subtotal			907.336	80.212		43.777		17.255		-		17.255	14.179	1,062.759	N/A

Remarks
Lockheed Martin (LM) costs include all integration and test efforts for LRASM v1.1 capability improvements development by LM and associated sub-contractors. FY 2021 includes continued product development for LRASM v1.1 integration and testing and receipt of previously ordered material to support those activities.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Government Support	WR	NAWC AD : Patuxent River, MD	8.577	1.413	Nov 2018	1.245	Nov 2019	0.990	Nov 2020	-		0.990	1.100	13.325	-
Government Support	WR	NAWC WD : China Lake, CA	50.689	8.668	Nov 2018	2.640	Nov 2019	1.250	Nov 2020	-		1.250	1.180	64.427	-
Development Support	WR	NSMA : Washington, DC	22.987	6.746	Dec 2018	1.015	Nov 2019	1.150	Nov 2020	-		1.150	1.100	32.998	34.928
Contractor Support	C/CPFF	JHU/APL : Laurel, MD	12.256	0.480	Jul 2019	0.500	Jul 2020	0.000		-		0.000	0.000	13.236	13.236
Contractor Support	C/FFP	Gryphon - Schafer Corporation : Arlington, VA	20.744	2.710	Jun 2019	3.140	Jun 2020	1.100	May 2021	-		1.100	0.980	28.674	28.700
Mission Planning Support	C/CPFF	Northrop Grumman : Bethpage, NY	9.988	0.969	Oct 2018	0.950	Feb 2020	0.300	Feb 2021	-		0.300	0.000	12.207	12.207
Contractor Support	C/FFP	Engility : Patuxent River, MD	0.936	0.945	Jun 2019	1.100	Jun 2020	1.000	Jun 2021	-		1.000	0.780	4.761	4.761
Contractor Support	Various	Various : Various	10.986	0.858	Oct 2018	0.850	Oct 2019	0.500	Nov 2020	-		0.500	0.400	13.594	13.594
Government Support	Various	Various : Various	6.185	0.608	Nov 2018	0.085	Nov 2019	0.050	Nov 2020	-		0.050	0.000	6.928	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 3337 / <i>Offensive Anti-Surface Warfare (OASuW) Weapon</i>
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Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prior Yr Supp no longer funded in the FYDP	Various	Various : Various	2.800	0.000		0.000		0.000		-		0.000	0.000	2.800	-
Subtotal			146.148	23.397		11.525		6.340		-		6.340	5.540	192.950	N/A

Remarks
Support costs consist of support from Government offices and Contractor Support experts associated with engineering, threat analysis, CONOPs, and Training and Tactical assessments for continued development of the LRASM v1.1 capability improvements.

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Development Support	WR	NAWC WD : China Lake, CA	50.276	11.174	Nov 2018	6.455	Nov 2019	7.350	Nov 2020	-		7.350	6.205	81.460	-
Development Support	WR	NAWC AD : Patuxent River, MD	29.537	4.262	Nov 2018	1.020	Nov 2019	2.275	Nov 2020	-		2.275	1.604	38.698	-
Development Support	WR	COTF : Norfolk, VA	0.222	0.175	Sep 2019	0.182	Sep 2020	0.185	Sep 2021	-		0.185	0.190	0.954	-
Development Support	MIPR	USAF : Various	5.819	0.081	Oct 2018	0.175	Apr 2020	0.000		-		0.000	0.000	6.075	-
Contractor Eng Support	C/CPFF	NAVSUP : Port Hueneme, CA	0.075	0.000		0.075	Apr 2020	0.075	Sep 2021	-		0.075	0.075	0.300	0.300
Prior Yr T&E no longer funded in the FYDP	Various	Various : Various	4.494	0.000		0.000		0.000		-		0.000	0.000	4.494	-
Subtotal			90.423	15.692		7.907		9.885		-		9.885	8.074	131.981	N/A

Remarks
Test and Evaluation costs support flight testing, system qualifications, range time, and target costs needed for LRASM v1.1 capability improvements. Supports the integrated test program for development test and operational test for LRASM. Increases from FY 2020 to FY 2021 due to increased flight testing related activities for LRASM v1.1 based on progression of development efforts.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 3337 / <i>Offensive Anti-Surface Warfare (OASuW) Weapon</i>
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Government Support	WR	NAWC AD : Patuxent River, MD	8.688	1.839	Nov 2018	1.100	Nov 2019	1.145	Nov 2020	-		1.145	0.995	13.767	-
Government Support	WR	NAWC WD : China Lake, CA	4.556	0.791	Nov 2018	0.960	Nov 2019	0.975	Nov 2020	-		0.975	0.980	8.262	-
Project Management Support	C/CPFF	NAWC AD : Patuxent River, MD	1.600	0.000		0.000		0.000		-		0.000	0.000	1.600	1.600
Travel	Various	NAWC AD : Patuxent River, MD	1.365	0.145	Oct 2018	0.150	Oct 2019	0.150	Oct 2020	-		0.150	0.150	1.960	-
Subtotal			16.209	2.775		2.210		2.270		-		2.270	2.125	25.589	N/A

Remarks
Management Services costs consist of Non-Headquarters Program Office Management team (Government labor and Contractor support services) required for the management of the program. FY 2021 continues management services to support the LRASM v1.1 capability improvements.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,160.116	122.076	65.419	35.750	-	35.750	29.918	1,413.279	N/A

Remarks

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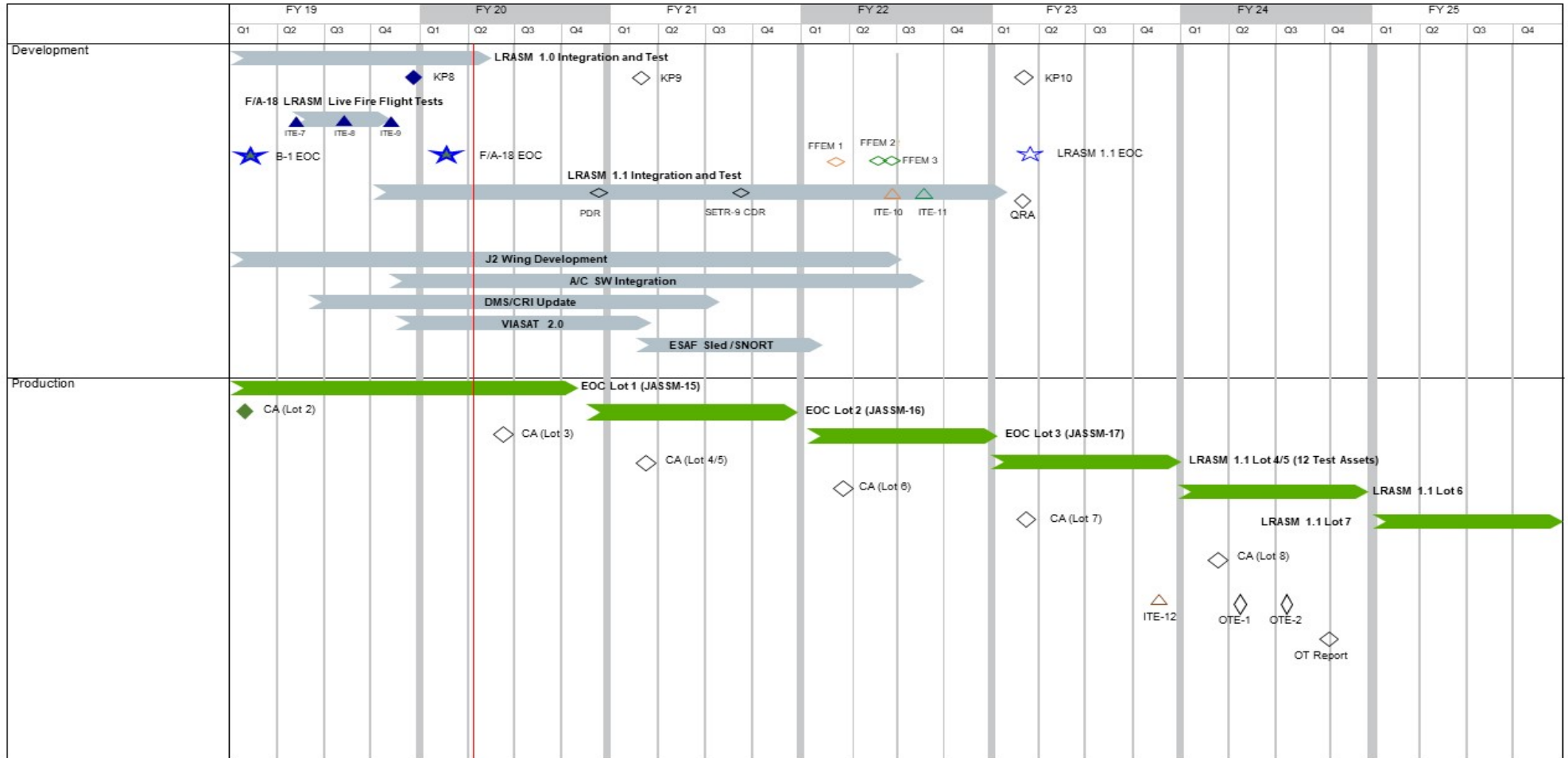
Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy

Date: February 2020

Appropriation/Budget Activity
1319 / 4

R-1 Program Element (Number/Name)
PE 0604786N / Offensive Anti-Surface
Warfare Weapon Dev

Project (Number/Name)
3337 / Offensive Anti-Surface Warfare
(OASuW) Weapon



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Offensive Anti-Surface Weapon (OASuW) Page 1</i>				
Development: Knowledge Point 8	4	2019	4	2019
Development: Early Operational Capability (EOC) Air Force	1	2019	1	2019
Development: Early Operational Capability (EOC) Navy	1	2020	1	2020
Development: Knowledge Point 9 (LRASM v1.1)	1	2021	1	2021
Development: Knowledge Point 10 (LRASM v1.1)	1	2023	1	2023
Development: Early Operational Capability (LRASM v1.1) Navy	1	2023	1	2023
Development: LRASM 1.0 Integration & Test	1	2019	2	2020
Development: LRASM 1.1 Integration & Test	3	2019	1	2023
Development: J2 Wing Development (LRASM v1.1)	1	2019	3	2022
Development: LRASM 1.1 Integration & Test PDR	4	2020	4	2020
Development: LRASM 1.1 Integration & Test CDR (SETR-9)	3	2021	3	2021
Development: A/C Software Integration	4	2019	3	2022
Development: Diminishing Manufacturing Sources / Cost Reduction Initiative (Radio Frequency Sensor)	2	2019	3	2021
Development: VIASAT 2.0	4	2019	1	2021
Development: ESAF Sled / SNORT (Fuze)	1	2021	1	2022
Development: Free Flight Evaluation Missile (FFEM)-1	1	2022	1	2022
Development: FFEM-2	2	2022	2	2022
Development: FFEM-3	2	2022	2	2022
Development: Integrated Test Event (ITE)-10	2	2022	2	2022
Development: ITE-11	3	2022	3	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy **Date:** February 2020

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Development: Quick Reaction Assessment Testing (Navy)	1	2023	1	2023
Production: FY18 Production Buy - 50 units (16 AF, 34 NAVY)	1	2019	1	2019
Production: FY19 Production Buy - 48 units (15 AF, 33 NAVY)	2	2020	2	2020
Production: FY20 Production Buy - 48 units (17 NAVY)	1	2021	1	2021
Production: FY21 Production Buy - 48 units (48 NAVY)	1	2021	1	2021
Production: FY22 Production Buy - 48 units (48 NAVY)	1	2022	1	2022
Production: FY23 Production Buy - 48 units (48 NAVY)	1	2023	1	2023
Production: FY24 Production Buy - 48 units (48 NAVY)	1	2024	1	2024
Production: FY25 Production Buy - 18 units (18 NAVY)	1	2025	1	2025
Production: FY17 Deliveries - 34 units	1	2019	4	2020
Production: FY18 Deliveries - 50 units	4	2020	4	2021
Production: FY19 Deliveries - 48 units	1	2022	1	2023
Production: FY20 Deliveries - 48 units	1	2023	1	2024
Production: FY21 Deliveries - 48 units	1	2024	1	2025
Production: FY22 Deliveries - 48 units	1	2025	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	0.000	19.307	50.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	69.307
Quantity of RDT&E Articles		3	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Offensive Anti-Surface Warfare (OASuW) is an offensive weapon system that can be air, surface, and subsurface launched in the maritime battle space environment. OASuW is a vital component of the Joint Force Anti-Surface Warfare capability and incorporate new and emergent technologies to support an increased offensive strike capability. Due to emerging threats, the fleet issued an Urgent Operational Needs Statement (UONS) that identified a capability gap for a long-range anti-ship missile to be filled by 2018. Directly supporting this UONS and significantly reducing Joint Force warfighting risks, the U.S. Navy initiated OASuW Increment 1 (OASuW-1), which leverages the Defense Advanced Research Projects Agency(DARPA)/Office of Naval Research Long Range Anti-Ship Missile (LRASM) demonstration program to deliver an Early Operational Capability (EOC) in the required timeframe. LRASM fills the most urgent air-launched capability gap to complement existing ASuW weapon systems and positions the Department of Defense to address evolving surface warfare threats. LRASM is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. The development and acquisition of LRASM has been structured to be fielded at a pace relevant to maintain overmatch against long-term strategic competition. Specifically, LRASM directly contributes to building a more lethal force and is a critical enabler for joint lethality in contested environments; deterring adversaries from aggression; ensuring common domains remain open and maintaining favorable regional balances of power.

Budget Item Justification: Funding in this project is for OASuW Increment I / LRASM v1.1 capability improvements to include OT requirements.

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

	FY 2019	FY 2020
Congressional Add: Operational Test Requirements for Additional Capabilities	19.307	0.000
FY 2019 Accomplishments: Funding that was Congressionally directed to be utilized for LRASM v1.1 capability improvements Operational Test (OT) requirements procured 3 test assets for OT.		
FY 2020 Plans: N/A		
Congressional Add: LRASM 1.1 capability improvements	0.000	50.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: FY 2020 funding supports development of LRASM 1.1 capability improvements including beyond line of sight capabilities, survivability enhancements, range improvements and obsolescence upgrades		
Congressional Adds Subtotals	19.307	50.000

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

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

Remarks

D. Acquisition Strategy

OASuW-1 is using an accelerated acquisition approach, with streamlined governance to transition the DARPA/ONR-demonstrated Long Range Anti-Ship Missile (LRASM) for use as an air-launched weapon from USAF and USN platforms. LRASM is integral to realizing the National Defense Strategy of combat-credible military forces to deter war, protect the security of our nation and to enable the Joint Force to win should deterrence fail. LRASM supports greater performance of the acquisition system and is demonstrating the delivery of performance at the speed of relevance; organizational structure that supports innovation with a rapid approach that dramatically decreases the timeline from development to fielding. The program is leveraging DoDI 5000.02i Model 4 to structure the acquisition strategy, which includes a highly integrated and concurrent transition design, integration, and developmental / operational test program which successfully met the Early Operation Capability (EOC) fielding threshold required by an Urgent Operational Need Statement (UONS) issued by the fleet. The program is structured in three phases: Technology Maturation, Integration and Test, and Procurement. To manage the accelerated timeline and resulting concurrency, the program uses a structured Knowledge Point review process that support decisions regarding significant program events such as transition from design to integration phase and contract awards. These reviews also provide senior DoD leadership the opportunity to provide focused support and active management of technical and acquisition risk and are chaired by the Service Acquisition Executive, ASN(RDA) (delegated MDA), and the Deputy Director of DARPA. The knowledge points are similar to acquisition milestone reviews, but occur more frequently. Knowledge Point 7 supported Lot 3 procurement and Knowledge Point 8 supported USN EOC decision. The program met the statutory requirements associated with Milestone B at Knowledge Point 3. In addition to the Knowledge Point reviews, the program also conducts Executive Steering Board reviews (also chaired by the MDA). Supporting these reviews, the associated engineering approach is designed to mitigate resulting risk by implementing a rolling-wave engineering progression based on the NAVAIR Systems Engineering Technical Review (SETR) process to enable detailed planning and decisions as the system matures. The LRASM v1.1 capability improvements program, follows in the same manner with continued reviews and test events to achieve incorporation of those improvements on future production units.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Product Development	C/CPIF	Lockheed Martin Missile and Fire Control : Orlando, FL	0.000	0.000		50.000	May 2020	0.000		-		0.000	0.000	50.000	-
Subtotal			0.000	0.000		50.000		0.000		-		0.000	0.000	50.000	N/A

Remarks
FY 2020 Congressional increase of funding for LRASM 1.1 capabilities improvements.

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Development Support (OT)	C/CPIF	Lockheed Martin Missile and Fire Control : Orlando, FL	0.000	19.307	Jun 2019	0.000		0.000		-		0.000	0.000	19.307	19.307
Subtotal			0.000	19.307		0.000		0.000		-		0.000	0.000	19.307	N/A

Remarks
FY 2019 Congressional direction for funding to be utilized for Offensive Anti-Surface Warfare (OASuW) Increment I / Long Range Anti-Ship Missile (LRASM) operational test requirements for 1.1 additional capabilities.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	19.307	50.000	0.000	-	0.000	0.000	69.307	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>
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Offensive Anti-Surface Warfare (OASuW)	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025							
	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				
Test & Evaluation	LRASM v1.1 Capability Improvements OT																															

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604786N / <i>Offensive Anti-Surface Warfare Weapon Dev</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Offensive Anti-Surface Warfare (OASuW)</i>				
Test & Evaluation: Operational Testing (OT) (LRASM v1.1)	3	2019	4	2022