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OFFICE OF PREPUBLICATION AND SECURITY REVIEW

OFFENSIVE ANTI-SURFACE WARFARE INCREMENT 1 (LONG RANGE ANTI-SHIP MISSILE) (OASUW INC 1 (LRASM))

December 2021 Selected Acquisition Report (SAR)



DECEMBER 31, 2021
DEPARTMENT OF THE NAVY

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Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance

ACAT - Acquisition Category

ADM - Acquisition Decision Memorandum

APB - Acquisition Program Baseline

APPN - Appropriation

APUC - Average Procurement Unit Cost

\$B - Billions of Dollars

BA - Budget Authority/Budget Activity

Blk - Block

BY - Base Year

CAPE - Cost Assessment and Program Evaluation

CARD - Cost Analysis Requirements Description

CDD - Capability Development Document

CLIN - Contract Line Item Number

CPD - Capability Production Document

CY - Calendar Year

DAB - Defense Acquisition Board

DAE - Defense Acquisition Executive

DAMIR - Defense Acquisition Management Information Retrieval

DoD - Department of Defense

DSN - Defense Switched Network

EMD - Engineering and Manufacturing Development

EVM - Earned Value Management

FOC - Full Operational Capability

FMS - Foreign Military Sales

FRP - Full Rate Production

FY - Fiscal Year

FYDP - Future Years Defense Program

ICE - Independent Cost Estimate

IOC - Initial Operational Capability

Inc - Increment

JROC - Joint Requirements Oversight Council

\$K - Thousands of Dollars

KPP - Key Performance Parameter

LRIP - Low Rate Initial Production

\$M - Millions of Dollars

MDA - Milestone Decision Authority

MDAP - Major Defense Acquisition Program

MILCON - Military Construction

N/A - Not Applicable

O&M - Operations and Maintenance

ORD - Operational Requirements Document

OSD - Office of the Secretary of Defense

O&S - Operating and Support PAUC - Program Acquisition Unit Cost

PB - President's Budget

PE - Program Element

PEO - Program Executive Officer

PM - Program Manager

POE - Program Office Estimate

RDT&E - Research, Development, Test, and Evaluation

SAR - Selected Acquisition Report

SCP - Service Cost Position

TBD - To Be Determined

TY - Then Year

UCR - Unit Cost Reporting

U.S. - United States

USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Manager

Name: CAPT Richard Gensley

Date Assigned: February 10, 2021

Address: 47123 Buse Road Patuxent River, MD 20670 Phone: 301-757-7477

Email: Richard.m.gensley.mil@us.navy.mil

Mission and Description

The U.S. Navy is leveraging Defense Advanced Research Projects Agency (DARPA) demonstration efforts to deliver an air-launched Offensive Anti-Surface Warfare (OASuW) Inc 1 weapon as an early operational capability (EOC) in the required timeframe. OASuW Inc 1 will deliver the Long Range Anti-Ship Missile (LRASM) developed in the demonstration program as an EOC to meet the most urgent air-launched requirement, significantly reducing Joint Force warfighting risks and positioning the DoD to address evolving surface warfare threats. LRASM will remain a viable interim capability pending the determination of the long-term OASuW solution by evolving capability necessary to outpace a dynamic threat.

Based on the February 03, 2014 ADM, the OASuW Inc 1/LRASM program is structured using an accelerated model because of the urgency of need. The program leverages DoDI 5000.02 Model 4 to structure the acquisition approach which includes a highly integrated developmental and operational test program in order to meet EOC objectives. Additionally, the ADM directed establishment of a DARPA/Navy/Air Force LRASM Deployment Office (LDO) to manage the OASuW Inc 1 program. LDO, later renamed the Effects Deployment Office (FXDO), uses Knowledge Point decision meetings with an Executive Steering Board chaired by the Service Acquisition Executive to provide focused support and oversight to address the risk of technical or acquisition inefficiencies in order to achieve the fielded capability by the required date. A sole-source contract for Integration and Test was awarded in April 2016 to Lockheed Martin, the prime integrator for the LRASM demonstration and the legacy Joint Air-to-Surface Standoff Missile-Extended Range system, for development and delivery of the LRASM EOC. The urgency of the requirement is the basis for the streamlined approach to accelerate the process.

The LRASM weapon system is the force application component of the Anti-Surface Warfare (ASuW) capability servicing threat capital ships. 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.

LRASM will conduct pre-planned and variable strikes against heavily defended surface combatants.

Executive Summary

Significant Accomplishments:

The Offensive Anti-Surface Warfare Increment 1 (OASuW Inc 1)/ Long Range Anti-Ship Missile (LRASM) program was established as a DoD 5000.02 Model 4 accelerated acquisition program with the goal of delivering a credible, lethal threat against advanced surface combatants by 2018 for the B-1 and 2019 for the F/A-18E/F. The program successfully met Early Operational Capability (EOC) on the B-1 in December 2018, which was 10 months ahead of schedule threshold. The program successfully met EOC on the F/A-18E/F in November 2019, 11 months ahead of schedule threshold.

The program shifted focus from EOC capability to development of the new LRASM 1.1 configuration in late 2019. LRASM 1.1 ensures continued tactical dominance against capital ships focusing primarily on improved communication capabilities, increased survivability and obsolescence upgrades. LRASM will conduct a series of technical reviews assessing the maturity of the LRASM 1.1 configuration. Subsystem Critical Design Review (CDR) events have been completed, along with the System-Level Preliminary Design Review (PDR). In second quarter FY 2021, LRASM definitized the LRASM 1.1 delivery order on the Basic Ordering Agreement (BOA) contract and awarded the Lots 4 and 5 missile production contract, which incorporates LRASM 1.1. The LRASM 1.1 CDR was successfully conducted in June 2021. The Lot 6 option on the Production Lot 4/5 contract was partially exercised in November 2021. The next milestone event is: Integrated Test Event Ten (ITE-10).

The program experienced two FY 2021 Congressional adjustments: 1) a \$16.53M increase in RDT&E to support OASuW Inc 1 (LRASM 1.1) and 2) a \$34.78M reduction in procurement which resulted in a quantity reduction on the Lot 5 contract.

The program is facing two FY 2022 Congressional actions which impact the program: 1) a pending \$21M mark against procurement (and extended continuing resolution (CR)) that is impacting the full execution of the Lot 6 Option and 2) the extended CR is preventing the use of FY22 budget reprogramming tools to fully fund the program to completion.

Below are the program achievements since the last published SAR:

March 2020 - Completed Battlefield Awareness and Targeting System-Embedded (BATS-E) 1200 radio qualification

April 2020 – USAF awarded the Lot 3 production contract

May 2020 – Critical Design Reviews for Electronic Safe and Arm (ESAF) (LRASM 1.1 fuze solution) and Radio Frequency Sensor (RFS) obsolescence upgrade conducted

June 2020 – Three Free Flight Evaluation Missiles (FFEM) (R&D) delivered to support tech demo and Valiant Shield activities

July 2020 - Successful participation in advanced technology flight test demonstration

September 2020 - LRASM 1.1 Preliminary Design Review conducted

September 2020 - Lot 1 production deliveries completed

September 2020 - Participated in Valiant Shield fleet exercise

January 2021 – Definitized LRASM 1.1 delivery order on the LRASM Basic Ordering Agreement contract February 2021 – Awarded the Lots 4/5 Production Contract

June 2021 - LRASM 1.1 CDR conducted

November 2021 - Lot 6 Option exercised on Lot 4/5 production contract

December 2021 - Reprogrammed all fielded missiles (USAF/USN) with the latest Missile Operational Flight Program (MOFP) 12.1.5 software.

Significant Issues:

There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation

| | History of Significant Developments Since Program Initiation |
|----------------|---|
| Date | Significant Development Description |
| February 2014 | Joint Memorandum from Office of the Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) delegated MDA for the OASuW/ Inc 1 a pre MDAP effort for the Navy. Program was structured as Model 4 accelerated acquisition. |
| June 2014 | Original Acquisition Strategy approved at Knowledge Point (KP) 1. |
| February 2016 | KP 3 was held satisfying Milestone B certification and approved update to the Acquisition Strategy. |
| April 2016 | Contract awarded for Integration and Test. |
| June 2016 | Assistant Secretary of the Navy for Research, Development and Acquisition Joint Memorandum for USD(AT&L) certified as required by section 2366b(a)(3)(L) of title 10, United States Code concurring with cost, schedule, technical feasibility, and performance trade-offs have been made with regard to LRASM. |
| December 2016 | KP 4 satisfying Production Readiness Review requirements and authorizing procurement of Lot 1 Early Operational Capability units. |
| March 2018 | KP 5 was approved, authorizing the contract award of Lot 2 Early Operational Capability (EOC) weapons production contract. |
| September 2018 | KP 6 was approved as a result of meeting the weapon system EOC fielding threshold. The entrance criteria for KP 7 and 8 were also approved. |
| December 2018 | B-1B EOC was achieved. |
| November 2019 | F/A-18E/F EOC was achieved. |

Schedule Schedule Events

| Schedule Events | | | | | | |
|---|------------------------------|---|----------|----------------------------|-----------|--|
| Events | Development APB Objective | Current APB Development Objective/Threshold | | Current Estimate/Actual | Deviation | |
| SETR 2.0 | Sep 2014 | Sep 2014 | Sep 2014 | Sep 2014 | | |
| SETR 3.0 | Sep 2015 | Sep 2015 | Sep 2015 | Sep 2015 | | |
| Knowledge Point 3 | Feb 2016 | Feb 2016 | Feb 2016 | Feb 2016 | | |
| SETR 4.0 | Jun 2016 | Jun 2016 | Jun 2016 | Jun 2016 | | |
| B-1 Early Operational Capability | Sep 2018 | Dec 2018 | Dec 2018 | Dec 2018 | | |
| F/A-18E/F Early Operational Capability | Sep 2019 | Nov 2019 | Nov 2019 | Nov 2019 | | |

Performance

| | Perfo | rmance Characteris | stics | | |
|--|---|--|--|-------------------------------|-----------|
| Development APB Objective | Current APB Development Objective/Threshold | | Demonstrated Performance (include Date of Demonstration) | Current Estimate/Actual | Deviation |
| Key Cost Paramete | r | , | | | |
| USG Only | USG Only | (T=O) USG Only | TBD | USG Only | |
| Material Availability | y | | | | |
| more than or equal to 90% availability | more than or equal to 90% availability | more than or equal to 80% availability | TBD | 94.9% / Jan 22 | |
| Operational Availab | oility | | | | |
| more than or equal to 98% availability | more than or equal to 98% availability | more than or equal to 90% availability | TBD | 91.7% Predicted / Jan 2022 | |
| Weapon System Re | eliability | | | | |
| greater than or equal to 190 hrs | greater than or equal to190 hrs | more than or equal to 30 hrs | TBD | 92.7 Predicted/ Jan 2022 | |
| Key Schedule Para | meter (B-1 / F/A-1 | 18E/F) | | | |
| 4th Quarter FY 2018/2019 | 4th Quarter FY 2018/2019 | 4th Quarter FY 2019/2020 | Dec 2018 / Nov 2019 | Dec 2018 / Nov 2019 | |
| Operations and Su | pport (O&S) Cost | | | | |
| Threshold = Objective | Less than or equal to \$413M | (T=O) Less than or equal to \$413M | TBD | Threshold = Objective | |
| Service Life | | | | | |
| 30 years | 30 years | 15 years | TBD | 15 years | |
| Weapon Load-Out | (B-1/F/A-18 E-F) | | | | |
| Threshold = Objective | 24/4 | (T=O) 24/4 | Dec 2018/Nov 2019 | Threshold = Objective | |

Performance Notes:

Classified Performance Information is provided in the classified annex to this submission.

Requirements Source: CDD for OASuW Weapon System Increment approved by JROC Memorandum 033-15 March 25, 2015

Acquisition Budget Estimate

Total Acquisition Cost

| | | Development APB | (Cur | nange 2 rent) //2020) | Budget I PB 2 | Estimate 2023 | |
|-------------|--------------|---------------------|---------------------|-----------------------------|------------------|------------------|-----------|
| Category | Base Year | Objective (BY\$) | Objective (BY\$) | Threshold (BY\$) | BY\$ | TY\$ | Deviation |
| RDT&E | 2014 | 1175.0 | 1394.7 | 1534.2 | 1416.6 | 1511.0 | 1.57% |
| Procurement | 2014 | 292.3 | 1549.3 | 1678.7 | 1832.3 | 2260.7 | 18.26% |
| MILCON | | 0.0 | 0.0 | 0.0 | | | |
| Acq. O&M | | 0.0 | 0.0 | 0.0 | | | |
| Total | 1,- | | - 27 | | | | |
| PAUC | 2014 | 11.833 | 5.841 | 6.375 | 5.037 | 5.848 | -13.77% |
| APUC | 2014 | 2.657 | 3.175 | 3.440 | 2.913 | 3.594 | -8.25% |

Total End Item Quantity

| Quantity Category | Current APB Quantity | Current Estimate Quantity |
|--------------------------|----------------------|---------------------------|
| Development | 16 | 16 |
| Procurement | 488 | 629 |

Quantity Notes:

The total quantity of Long Range Anti-Ship Missile (LRASM) weapons required is 629 All Up Rounds (450 USN and 179 USAF).

Risk and Sensitivity Analysis

| Risks and Sensitivity Analysis |
|--|
| Current Procurement Cost (December 2021) |

1. There are no procurement cost risks.

Original Baseline Estimate (February 2016)

 A Joint Component Cost Estimate was completed to support Knowledge Point 3 dated February 19, 2016 and was completed at the 50% confidence level. There are no known cost risks at this time.

Revised Original Estimate (N/A)

None

Unit Cost

Current Baseline Compared with Current Estimate

| Category (\$M) | Current APB | Current Estimate | % Change | NMC Breach |
|----------------|-------------|------------------|----------|------------|
| PAUC | | | | |
| Cost | 2944.0 | 3248.8 | 10.35% | No |
| Quantity | 504 | 645 | N/A | N/A |
| Unit Cost | 5.841 | 5.037 | -13.77% | No |
| APUC | | | | |
| Cost | 1549.3 | 1832.3 | 18.26% | No |
| Quantity | 488 | 629 | N/A | N/A |
| Unit Cost | 3.175 | 2.913 | -8.25% | No |

Original Baseline Compared with Current Estimate

| Category (\$M) | Current APB | Current Estimate | % Change | NMC Breach |
|----------------|-------------|------------------|----------|------------|
| PAUC | | | | |
| Cost | 1467.3 | 3248.8 | 121.42% | No |
| Quantity | 124 | 645 | N/A | N/A |
| Unit Cost | 11.833 | 5.037 | -57.43% | No |
| APUC | | | | |
| Cost | 292.3 | 1832.3 | 526.84% | No |
| Quantity | 110 | 629 | N/A | N/A |
| Unit Cost | 2.657 | 2.913 | 9.62% | No |

Contracts

| | Contra | act Data (\$7 | YM) | |
|------------------------------|----------------|---|----------------------|--|
| Contract Number | FA8682-19-C-0 | 0010 | | |
| Effort Number | 3 | 3 | | |
| Modification Number | | | | |
| Award Date | November 15, | 2018 | | |
| Definitization Date | November 15, | 2018 | | |
| Order Number | | | | |
| CAGE Code/CAGE Legal Name | 04939/ Lockhe | ed Martin C | orporation | |
| Contract Title | LRASM Produc | ction Contra | ct (Lot 2) | |
| Contract Address | | 5600 W Sand Lake Road Orlando, FL 32819-8907 | | |
| Con | | | nd Performance (\$M) | |
| Initial Target Price | | Current T | arget Price | |
| 172.2 | | 183.7 | 7 | |
| Initial Ceiling Price | | Current C | eiling Price | |
| 192.2 | | 204.4 | | |
| Contract's EAC | | PM's EAC | | |
| 176.63 | | 191.8 | | |
| Initial Quantity | Current Quanti | ty | Delivered Quantity | |
| 50 | 53 | | 48 | |
| BAC | BCWP | | ACWP | |
| 164.19 | 161.0 | | 170.22 | |
| BCWS | Cost Variance | | Schedule Variance | |
| 161.84 | (-\$9.23M) | | (-\$0.84M) | |

Contract Notes:

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to increasing the scope resulting in three additional missiles. There were minor changes to Current Target and Current Ceiling price from the last report.

Cost Variance:

The unfavorable cumulative cost variance is mainly driven by Communications as this element scope is costing more to execute than was planned in the budget. Common Support Equipment is also contributing to the variance due to additional effort required to support Ocala and Troy test stations.

Schedule Variance:

The unfavorable schedule variance is driven by All Up Round Assembly.

| | Contrac | t Data (\$TYI | M) | | |
|------------------------------|-----------------------------------|------------------|--------------------|--|--|
| Contract Number | FA8682-20-C-00 | FA8682-20-C-0003 | | | |
| Effort Number | 5 | | | | |
| Modification Number | | | | | |
| Award Date | April 07, 2020 | | | | |
| Definitization Date | April 07, 2020 | | | | |
| Order Number | | 711 | | | |
| CAGE Code/CAGE Legal Name | 04939/ Lockheed | d Martin Cor | poration | | |
| Contract Title | LRASM Product | ion (Lot 3) | | | |
| Contract Address | 5600 West Sand Orlando, FL 328 | | | | |
| Con | tracts/Effort Price, Q | uantity, and | Performance (\$M) | | |
| Initial Target Price | | Current Tar | get Price | | |
| 165.1 | | 165.2 | | | |
| Initial Ceiling Price | | Current Cei | ling Price | | |
| 176.2 | | 176.4 | | | |
| Contract's EAC | | PM's EAC | | | |
| 159.87 | | 161.56 | | | |
| Initial Quantity | Current Quantity | | Delivered Quantity | | |
| 48 | 48 | | 0 | | |
| BAC | BCWP | | ACWP | | |
| 146.96 | 101.77 | | 99.78 | | |
| BCWS | Cost Variance | | Schedule Variance | | |
| 98.49 | \$1.99M | | \$3.28M | | |

Contract Notes:

No changes since last report.

Cost Variance:

The favorable cumulative cost variance is mainly driven by Production Management support needed on other Long Range Anti-Ship Missile (LRASM) contracts; less raw material and NPA needed in All Up Round (AUR) assembly; and less hours than planned for in Configuration Management due to delayed drawing releases.

Schedule Variance:

The favorable cumulative schedule variance is mainly driven by the early receipt of airframe and fuel tank materials.

| | Cont | ract Data (\$T | YM) | | |
|---|------------------------------|-----------------------|---------------------|--|--|
| Contract Number | FA8682-21-C | | | | |
| Effort Number | 6 | 6 | | | |
| Modification Number | | | | | |
| Award Date | February 22, | 2021 | | | |
| Definitization Date | February 22, | 2021 | | | |
| Order Number | | | | | |
| CAGE Code/CAGE Legal Name | 04939/ Lockh | need Martin C | orporation | | |
| Contract Title | LRASM Prod | uction (Lot 4/ | 5/6) | | |
| Contract Address | 5600 West S Orlando, FL 3 | | ad | | |
| Cor | | | d Performance (\$M) | | |
| Initial Target Price (Contracto Price) | | | arget Price | | |
| 414.3 | | 550.0 | Service Service | | |
| Initial Ceiling Price | | Current Ceiling Price | | | |
| N/A | | N/A | | | |
| Contract's EAC (Negotiated 0 | Contract Cost) | PM's EAC | | | |
| 550.0 | | 550.0 | | | |
| Initial Quantity | Current Quar | ntity | Delivered Quantity | | |
| 137 | 180 | | 0 | | |
| BAC | BCWP | | ACWP | | |
| N/A | N/A | | N/A | | |
| BCWS | Cost Varianc | e | Schedule Variance | | |
| N/A | N/A | | N/A | | |

Contract Notes:

Lot 6 Option was exercised. 42 out of 48 USN missiles put on contract. Due to pending mark against FY 2022 Weapons Procurement, Navy (WPN) funding, program is unable to award the remaining six missiles until Continuing Resolution is resolved. Total quantity for this contract: 180 missiles. The difference from the Initial Target Price to the Current Target Price is due to the added funding for the additional option.

Cost Variance:

Cost Variance reporting is not required on this Firm Fixed Price (FFP) contract.

Schedule Variance:

Schedule Variance reporting is not required on this (FFP) contract

| | | t Data (\$TY | M) | |
|------------------------------|---|-----------------------|--------------------|--|
| Contract Number | N00019-19-F-4037/1 | | | |
| Effort Number | 4 | | | |
| Modification Number | I SALCO TURO | | | |
| Award Date | July 03, 2019 | | | |
| Definitization Date | January 28, 2021 | | | |
| Order Number | 1 | | | |
| CAGE Code/CAGE Legal Name | 04939/ Lockheed Martin Corporation | | | |
| Contract Title | LRASM BOA Contract (LRASM 1.1) | | | |
| Contract Address | 5600 West Sand Lake Road Orlando, FL 32819 | | | |
| Con | tracts/Effort Price, Q | uantity, and | Performance (\$M) | |
| Initial Target Price | | Current Target Price | | |
| 121.05 | | 122.6 | | |
| Initial Ceiling Price | | Current Ceiling Price | | |
| 121.0 | | N/A | | |
| Contractor's EAC | | PM's EAC | | |
| 109.8 | | 110.5 | | |
| Initial Quantity | Current Quantity | | Delivered Quantity | |
| 1 | 1 | | 0 | |
| BAC | BCWP | | ACWP | |
| 110.5 | 75.1 | | 70.1 | |
| BCWS | Cost Variance | | Schedule Variance | |
| 82.8 | 5.0 | | (7.7) | |

Contract Notes:

LRASM 1.1 capability improvement efforts as the program transitions to final testing and delivery of the LRASM 1.1 Early Operational Capability (EOC) to the Fleet.

Cost Variance:

Favorable cost variance is driven by Seeker Assemblies (\$6.3M) due to schedule delays affecting planned activities. Cost variance will degrade as activities ramp up as technical issues are resolved.

Schedule Variance:

Unfavorable schedule variance is driven by Seeker Assemblies (\$4.1M) due to delays in operation builds caused by late Radio Frequency Sensor (RFS) deliveries due to hardware issues.

Deliveries and Expenditures

| Deliveries | | | | | | |
|----------------------------------|--------------------|----------------|----------------|----------------------|--|--|
| Delivered to Date | Planned to Date | Actual to Date | Total Quantity | Percent Delivered | | |
| Development | 13 | 13 | 16 | 81.25% | | |
| Production | 77 | 77 | 629 | 12.24% | | |
| Total Program Quantity Delivered | 90 | 90 | 645 | 13.95% | | |

Expended and Appropriated (TY \$M)

Total Acquisition Cost: 2379.7 Expended to Date: 1609.2 Percent Expended: 67.62% Total Funding Years: 13 Years Appropriated: 9

Percent Years Appropriated: 69.23% Appropriated to Date: 2182.6

Percent Appropriated: 91.72%

The above data is current as of April 18, 2022.

Low Rate Initial Production

| Item | Initial LRIP Decision | Current Total LRIP |
|-------------------|--|-----------------------|
| Approval Date | 3/31/2016 | 1/3/2020 |
| Approved Quantity | 110 | 488 |
| Reference | OASuW Increment 1 Knowledge Pt #3, ADM | PB2021 Budget Exhibit |
| Start Year | 2017 | 2017 |
| End Year | 2019 | 2025 |

Rationale if Current Total LRIP Quantity exceeds 10% of the total Procurement quantities:

The Current Total LRIP Quantity is more than 10% of the total production quantity because Long Range Anti-Ship Missile (LRASM) continues to be an interim solution pending determination of the long-term OASuW/Inc 2 solution.

As a result of PB23 issued quantities, adjustments have been made to the program increasing the required quantity to 629 All Up Rounds (450 USN and 179 USAF).

Operating and Support Costs

Total Program O&S Cost Compared with Baseline

| | Current APB Objective (BY\$) | Current APB Threshold (BY\$) | Current Estimate (BY\$) | Current Estimate (TY\$) | Deviation |
|---------------------------|------------------------------------|------------------------------------|-------------------------------|----------------------------|-----------|
| Total O&S (\$Millions) | 318.2 | 350.0 | 300.4 | 392.4 | -5.93% |

O&S Cost Breakdown

Allocate O&S estimate by each weapon system (or system variants) acquired by the program) into the CAPE Cost Categories. Add a fresh column for each variant/system.

| Category (BY\$ Million) | OASuW Inc 1 (LRASM |
|----------------------------------|--------------------|
| Unit-Level Manpower | 0.000 |
| Unit Operations | 0.000 |
| Maintenance | 0.079 |
| Sustaining Support | 0.322 |
| Continued System Improvements | 0.077 |
| Other | |
| Total O&S | 0.478 |

Cost Estimate Source: Program Office Estimate (POE) dated January 15, 2020.

O&S Cost Notes:

a. Disposal/Demilitarization Cost Estimate and Source of Estimate:

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2014 \$M): 12.9

The assumption for Disposal/Demilitarization costs is that no missiles have been expended/fired through the life of the program. Therefore, all 629 units will be disposed.

b. Sustainment Strategy:

The Long Range Anti-Ship Missile (LRASM) is a war-reserved asset and does not require periodic or scheduled depot maintenance. The initial Joint Air-to-Surface Standoff Missile (JASSM) product support strategy was to employ a warranty for the life of the weapon. The current JASSM/JASSM-Extended Range (ER) product support strategy has no warranty and a two-level maintenance concept will address parts, labor, failure analysis and correction, disposal of failed missiles or components, and all transportation within the continental United States. Organic depot repair capability does not exist within DoD, and the assets' specialized coating can only be repaired by the manufacturer.

Leveraging off of the current JASSM/JASSM-ER strategy, the weapon system will be maintained under a two-level maintenance concept defined above: organizational and depot levels. Qualified maintenance personnel perform pre-flight and post-flight inspections in accordance with verified manuals and checklists. Missiles are maintained in a serviceable condition at the organizational level through storage monitoring inspections, returned munitions inspections and limited corrective maintenance. Organizational corrective repair actions are limited to minor repairs such as container desiccant replacement, missile surface paint touch up, container latch replacement, and initiation of Built in Test (BIT) and missile software reprogramming using the Common

Munitions BIT Reprogramming Equipment, AN-GYQ/79 test set with Ethernet. Limited provisioning will be conducted to include container parts and several external components on the missile. All deficiencies beyond the scope of technical manuals will be reported through All Weapons Information System for Navy and the Tactical Munitions Reporting System for the Air Force. Final disposition instructions will be provided by the Program Office.

Under the anticipated sustainment strategy, unplanned depot level maintenance of LRASM will be performed by the contractor as necessary. The service life requirement is 15 years. The LRASM Deployment Office will determine the most efficient way to handle supportability after the 15-year expires. The requirement to conduct periodic BIT (every 24 months) will be performed in the field and reported to the program office for reliability assessment purposes.

- c. For Each Acquired System or System Variant:
 - Quantity to Sustain: 629
 - ii. First Operational Fiscal Year: 2018
 - iii. Final Operational Fiscal Year: 2042
 - iv. Unit Expected Service Life: 15
- d. Antecedent System(s) O&S Costs:
 - No Antecedent. JASSM is not considered to be an Antecedent to LRASM as the internal components are substantially different.