Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-286

Remote Minehunting System (RMS)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs

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

Program Information

Program Name

Remote Minehunting System (RMS)

DoD Component

Navy

Responsible Office

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 7, 2010

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 23, 2012

Mission and Description

The Remote Minehunting System (RMS) is a mine reconnaissance system designed for the detection, classification, identification, and localization of bottom and moored mines in shallow and deep water. The RMS is a fully integrated system consisting of a semi-submersible Remote Multi-Mission Vehicle (RMMV) with a tethered, towed variable depth sensor, the AN/AQS-20. The RMMV is a high-endurance, semi-autonomous, low-observable, unmanned vehicle. The AN/AQS-20, a separate Acquisition Category II program, incorporates five separate sonars/sensors (side-look sonar, forward-look sonar, volume search sonar, gap fill sonar, and electro-optical identification sensor) in a compact, lightweight, and hydrodynamically stable towed body. The AN/AQS-20 localizes mine-like objects and provides the operator with a visual image and a contact data list. All mission data is recorded by the Littoral Combat Ship (LCS) for post-mission analysis. Line-of-Sight and Over-the-Horizon communication provides vehicle Command and Control and mine reconnaissance sensor data transmission. The RMS will provide the Navy the capability to keep ships and Sailors out of the minefield and will be deployed from the LCS as part of the Mine Countermeasures Mission Package (MCM MP).

Executive Summary

This is the final SAR submission for the Remote Minehunting System (RMS) program, because the program has been cancelled.

The RMS is a fully integrated system consisting of the Remote Multi-Mission Vehicle (RMMV) and AN/AQS-20 minehunting sonar system. On June 1, 2010, following critical Nunn McCurdy unit cost breaches, the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) restructured the RMS program as an Acquisition Category ID program and, as required by 10 U.S.C. §2433a, rescinded Milestone (MS) C for the program. USD(AT&L) has not approved the RMS program re-entry into the MS C phase.

The RMMV supported the Littoral Combat Ship (LCS) Mine Countermeasures (MCM) Mission Package (MP) Technical Evaluation (TECHEVAL) from March 2015 through August 2015. The v6.0 RMMVs (1, 7, 9, & 10) were tested from an LCS with 22 launches and 380 hours operating time. The RMMV successfully demonstrated its minehunting performance requirements, but failed to meet the reliability requirement. Subsequently, as a result of the RMMVs unsatisfactory demonstrated reliability, the Assistant Secretary of the Navy, Research, Development, and Acquisition (ASN(RD&A) and the Chief of Naval Operations (CNO) chartered an RMS Independent Review Team (IRT) to assess RMMV technical performance and reliability, requirements, and program management structure and conduct an Analysis of Alternatives of unmanned systems to achieve the Navy's LCS minehunting requirements.

The Navy's budget exhibits in support of the FY 2017 PB were prepared prior to the RMS IRT report being finalized, and those budget exhibits reflected anticipated changes to the RMS program. In the FY 2016 PB, the RMS program received a $34.5M reduction in the Other Procurement, Navy (OPN) line and a $2.5M reduction in the RD&TE line. The FY 2017 PB zeroes OPN beginning in FY 2017 and RDT&E beginning in FY 2018. The FY 2016 PB showed 2 units to be procured in FY 2016 and stated that a total quantity of 54 RMS units would be procured at program completion. FY 2017 PB shows 1 unit to be procured in FY 2016 and states that a total quantity of 11 RMS units would be procured at program completion.

On February 24, 2016, the ASN(RD&A) and the CNO concurred with the RMS IRT report's recommendations, one of which was to halt procurement of additional RMS units. In March 2016, USD(AT&L) issued an ADM that cancelled the RMS program. The ADM reduced the RMS program's total procurement quantity to the 10 units delivered. The ADM directed that RMS production activities shall cease in an orderly manner and that the 10 units delivered shall be sustained until they are transitioned to another acquisition program to serve as test and integration assets.

The RMS program's cancellation will result in critical Nunn McCurdy unit cost breaches. Specifically, the Navy calculates that the reduction in the total quantity of RMS units from 54 to 10 will cause: (a) the PAUC to increase 211.91% in relationship to the PAUC baseline in the current APB; and, (b) the APUC to increase by 24.95% in relationship to the APUC baseline in the current APB. Accordingly, the information required by 10 U.S.C. §2433(g)(1) (A) - (F) is included in this report.

In accordance with 10 U.S.C. §2433(g)(2), the Secretary of Defense certification is not required to be submitted for the RMS program. In accordance with 10 U.S.C. §2433(d)(3), this report notifies Congress of the Secretary of the Navy's determination that the PAUC and APUC for the RMS program have increased by a percentage greater than the critical unit cost growth threshold, and these increases are attributed above to the program's cancellation.

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

Threshold Breaches

APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☑
	APUC	☑

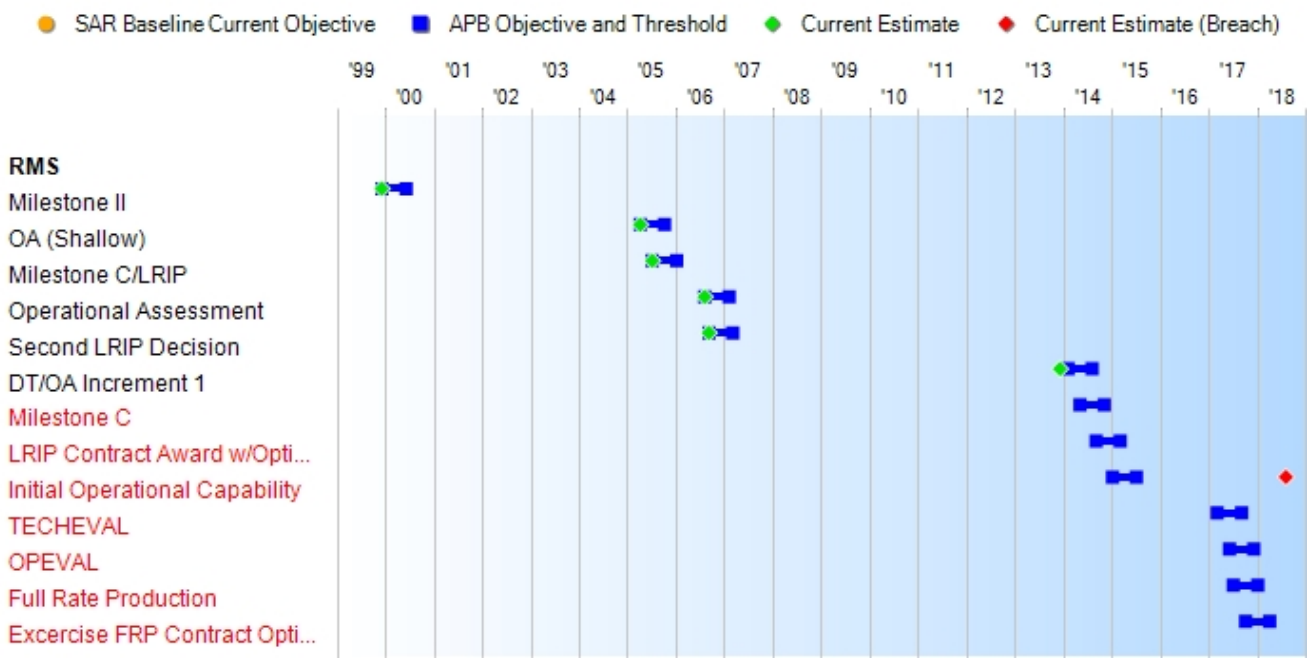
Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	Critical
	APUC	Significant
Original UCR Baseline		
	PAUC	Critical
	APUC	None

Explanation of Breach

The impact of the FY 2017 PB reductions will cause Nunn McCurdy unit cost breaches and multiple APB breaches to schedule. The March 2016 ADM issued by USD(AT&L) truncates the RMS program to the 10 units already delivered.

The O&S Cost reported in this SAR are based on the Program Life Cycle Cost Estimate dated August 2014. This was based upon an inventory of 54 units, which has been dramatically reduced following FY 2017 PB, which results in an O&S breach.

Schedule



Schedule Events					
Events	**SAR Baseline Development Estimate**	**Current APB Development Objective/Threshold**		**Current Estimate**	
Milestone II	Dec 1999	Dec 1999	Jun 2000	Dec 1999	
OA (Shallow)	Apr 2005	Apr 2005	Oct 2005	Apr 2005	
Milestone C/LRIP	Jul 2005	Jul 2005	Jan 2006	Jul 2005	
Operational Assessment	Aug 2006	Aug 2006	Feb 2007	Aug 2006	
Second LRIP Decision	Sep 2006	Sep 2006	Mar 2007	Sep 2006	
DT/OA Increment 1	Feb 2014	Feb 2014	Aug 2014	Dec 2013	
Milestone C	May 2014	May 2014	Nov 2014	**N/A**[1]	(Ch-1)
LRIP Contract Award w/Options for FRP	Sep 2014	Sep 2014	Mar 2015	**N/A**[1]	(Ch-1)
Initial Operational Capability	Jan 2015	Jan 2015	Jul 2015	**Aug 2018**[1]	(Ch-2)
TECHEVAL	Mar 2017	Mar 2017	Sep 2017	**N/A**[1]	(Ch-1)
OPEVAL	Jun 2017	Jun 2017	Dec 2017	**N/A**[1]	(Ch-1)
Full Rate Production	Jul 2017	Jul 2017	Jan 2018	**N/A**[1]	(Ch-1)
Excercise FRP Contract Options under LRIP Contract	Oct 2017	Oct 2017	Apr 2018	**N/A**[1]	(Ch-1)

[1] *APB Breach*

Change Explanations

(Ch-1) The current estimates for the following schedule events have changed to N/A because the Navy will procure no additional RMS units:
-Milestone C
-LRIP Contract Award w/Options for FRP
-TECHEVAL
-OPEVAL
-Full Rate Production
-Exercise FRP Contract Options under LRIP Contract
(Ch-2) The current estimate for IOC has changed from February 2016 to Aug 2018 because only LRIP 1 will proceed to support deployments.

Acronyms and Abbreviations

DT - Developmental Testing
MCM - Mine Countermeasures
OA - Operational Assessment
OPEVAL - Operational Evaluation
RMMV - Remote Multi-Mission Vehicle
TECHEVAL - Technical Evaluation

Performance

Performance Characteristics					
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**	
Operational Availability					
.85	.85	0.80	TBD	0.60	(Ch-1)
Material Availability					
N/A	0.75	0.59	TBD	0.59	
Net Ready					
N/A	yes	yes	TBD	yes	
Transit Speed (kts)					
20	N/A	N/A	N/A	N/A	
Water Depth -Shallow					
Mine Type					
Bottom, CCT, CT, IV	N/A	N/A	N/A	N/A	
Water Depth - Deep					
Mine Type					
CCT, CT, IV	N/A	N/A	N/A	N/A	

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

Requirements Reference

Capability Development Document (CDD) dated May 31, 2011

Change Explanations

(Ch-1) Based upon the performance of the Remote Multi Mission Vehicle (RMMV) during the Littoral Combat Ship Mine Countermeasures Mission Package (LCS MCM MP) Technical Evaluation (TECHEVAL), the current estimate has been revised from 0.80 to 0.60.

Notes

The RMS CPD was approved on March 28, 2014. There are no changes to the KPPs based on the CPD. A Milestone C is no longer planned for the program, therefore an update to the APB is unnecessary.

Acronyms and Abbreviations

CCT - Close-Close Tethered
CT - Close Tethered
IV - In-Volume
kts - knots
MS - Milestone

Track to Budget

RDT&E

Appn	BA	PE
Navy	04	0603502N

Project	Name
0260	Surface and Shallow Water Mine Countermeasures (Shared) (Sunk)
	Notes: Active through FY 2014
9999	Remote Minehunting Systems (Shared) (Sunk)
	Notes: Congressional Add to continue development of RMS during the RMS reliability growth program.

Appn	BA	PE
Navy	04	0603581N

Project	Name
3129	LCS Mission Package Development (Shared) (Sunk)
	Notes: Funding is provided to research and study methods to employ mine warfare mission modules independently of the Littoral Combat Ship (LCS) platform.

Appn	BA	PE
Navy	04	0604122N

Project	Name
0260	Remote Minehunting Systems
	Notes: Active beginning in FY 2015.

Procurement

Appn	BA	PE
Navy	01	0204230N

Line Item	Name
1601	LCS MCM Mission Modules (Shared) (Sunk)
	Notes: The RMS budget is only the Remote Multi-Mission Vehicle (RMMV) element of cost under the Cost Code LM001.
1605	Remote Minehunting Systems (RMS)
	Notes: Includes Remote Multi Mission Vehicles (RMMV), RMMV Cradles and Production Engineering.

Appn	BA	PE
Navy	02	0204302N

Line Item	Name
2622	Minesweeping System Replacement (Shared) (Sunk)
	Notes: The RMS budget is comprised of all the elements of cost listed under Cost Code LV064, RMS.

Appn	BA	PE
Navy	08	0204228N

Line Item	Name		
9020	Spares and Repair Parts	(Shared)	(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2006 $M			BY 2006 $M	TY $M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	649.6	649.6	714.2	618.0	654.4	654.4	617.3
Procurement	630.0	630.0	693.0	121.1	795.0	795.0	127.3
Flyaway	--	--	--	101.9	--	--	107.2
Recurring	--	--	--	101.9	--	--	107.2
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	19.2	--	--	20.1
Other Support	--	--	--	19.2	--	--	20.1
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	1279.6	1279.6	N/A	739.1	1449.4	1449.4	744.6

Confidence Level

Confidence Level of cost estimate for current APB: 50%

The Independent Cost Estimate to support the RMS Nunn-McCurdy certification, like all life-cycle cost estimates previously performed by the Cost Assessment and Program Evaluation (CAPE), is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Derpartment has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Programs (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Total Quantity			
Quantity	**SAR Baseline Development Estimate**	**Current APB Development**	**Current Estimate**
RDT&E	2	2	2
Procurement	52	52	8
Total	54	54	10

Quantity Notes

Of the $53.1M in the FY 2016 Other Procurement Navy (OPN) budget, it is expected the Navy will only release $18M for the program to fund the v6.0 upgrades. The Independent Review Team (IRT) report eliminated the Quantity 1 procurement of LRIP 2 in FY 2016.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	596.7	17.6	3.0	0.0	0.0	0.0	0.0	0.0	617.3
Procurement	109.3	18.0	0.0	0.0	0.0	0.0	0.0	0.0	127.3
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	706.0	35.6	3.0	0.0	0.0	0.0	0.0	0.0	744.6
PB 2016 Total	706.0	107.7	96.4	66.7	68.0	46.0	60.2	388.6	1539.6
Delta	0.0	-72.1	-93.4	-66.7	-68.0	-46.0	-60.2	-388.6	-795.0

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	8	0	0	0	0	0	0	0	8
PB 2017 Total	2	8	0	0	0	0	0	0	0	10
PB 2016 Total	2	8	2	4	4	4	2	4	24	54
Delta	0	0	-2	-4	-4	-4	-2	-4	-24	-44

Cost and Funding

Annual Funding By Appropriation

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	--	--	--	--	--	--	11.9
1997	--	--	--	--	--	--	24.6
1998	--	--	--	--	--	--	16.4
1999	--	--	--	--	--	--	17.4
2000	--	--	--	--	--	--	47.5
2001	--	--	--	--	--	--	42.9
2002	--	--	--	--	--	--	55.4
2003	--	--	--	--	--	--	59.0
2004	--	--	--	--	--	--	56.7
2005	--	--	--	--	--	--	17.3
2006	--	--	--	--	--	--	26.6
2007	--	--	--	--	--	--	5.7
2008	--	--	--	--	--	--	8.5
2009	--	--	--	--	--	--	6.0
2010	--	--	--	--	--	--	26.0
2011	--	--	--	--	--	--	32.5
2012	--	--	--	--	--	--	50.3
2013	--	--	--	--	--	--	37.1
2014	--	--	--	--	--	--	33.8
2015	--	--	--	--	--	--	21.1
2016	--	--	--	--	--	--	17.6
2017	--	--	--	--	--	--	3.0
Subtotal	2	--	--	--	--	--	617.3

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2006 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1996	--	--	--	--	--	--	13.8
1997	--	--	--	--	--	--	28.2
1998	--	--	--	--	--	--	18.7
1999	--	--	--	--	--	--	19.6
2000	--	--	--	--	--	--	52.7
2001	--	--	--	--	--	--	46.9
2002	--	--	--	--	--	--	60.0
2003	--	--	--	--	--	--	63.0
2004	--	--	--	--	--	--	58.9
2005	--	--	--	--	--	--	17.5
2006	--	--	--	--	--	--	26.1
2007	--	--	--	--	--	--	5.5
2008	--	--	--	--	--	--	8.0
2009	--	--	--	--	--	--	5.6
2010	--	--	--	--	--	--	23.8
2011	--	--	--	--	--	--	29.1
2012	--	--	--	--	--	--	44.2
2013	--	--	--	--	--	--	32.3
2014	--	--	--	--	--	--	29.0
2015	--	--	--	--	--	--	17.9
2016	--	--	--	--	--	--	14.7
2017	--	--	--	--	--	--	2.5
Subtotal	2	--	--	--	--	--	618.0

Annual Funding 1810 | Procurement | Other Procurement, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	3	32.1	--	--	32.1	2.1	34.2
2006	4	46.3	--	--	46.3	11.7	58.0
2007	--	--	--	--	--	--	--
2008	1	10.8	--	--	10.8	3.6	14.4
2009	--	--	--	--	--	2.7	2.7
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	18.0	--	18.0	--	18.0
Subtotal	8	89.2	18.0	--	107.2	20.1	127.3

Annual Funding 1810 | Procurement | Other Procurement, Navy							
Fiscal Year	Quantity	BY 2006 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	3	32.1	--	--	32.1	2.1	34.2
2006	4	44.8	--	--	44.8	11.3	56.1
2007	--	--	--	--	--	--	--
2008	1	10.1	--	--	10.1	3.3	13.4
2009	--	--	--	--	--	2.5	2.5
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	14.9	--	14.9	--	14.9
Subtotal	8	87.0	14.9	--	101.9	19.2	121.1

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	7/1/2005	6/1/2010
Approved Quantity	3	18
Reference	Milestone C ADM	Nunn-McCurdy ADM
Start Year	2005	2005
End Year	2007	2016

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the elimination of the Remote Multi-Mission Vehicles (RMMVs) for the Anti-Submarine Warfare Mission Package for the Littoral Combat Ship in the FY 2010 PB, which reduced the number of RMMV production units from 106 to 52.

In July 2005, the initial approval of three RMMV LRIP 1 units was authorized. The Assistant Secretary of the Navy for Research, Development, and Acquisition approved an additional four RMMV LRIP 1 units in September 2006 and one more RMMV LRIP 1 unit in April 2008. USD(AT&L) authorized ten additional RMMV LRIP 2 units in June 2010.

Eighteen RMMV LRIP units have been authorized to date and eight RMMV LRIP 1 units have been delivered.

On August 25, 2014, USD(AT&L) issued an ADM that authorized the release of the LRIP 2 contract.

USD(AT&L) is the Milestone Decision Authority for the RMS program. The March 2016 ADM truncates the RMS program to the 10 units already delivered and directs the Navy to develop a transition plan to shut-down RMS production in an orderly fashion and sustain the 10 RMS units in the Navy’s inventory as test and integration assets.

Foreign Military Sales

None

Nuclear Costs

None

Unit Cost

Unit Cost Report

Item	BY 2006 $M	BY 2006 $M	% Change
	Current UCR Baseline (Oct 2012 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost			
Cost	1279.6	739.1	
Quantity	54	10	
Unit Cost	23.696	73.910	**+211.91**[1]
Average Procurement Unit Cost			
Cost	630.0	121.1	
Quantity	52	8	
Unit Cost	12.115	15.138	**+24.95**[1]

Item	BY 2006 $M	BY 2006 $M	% Change
	Revised Original UCR Baseline (Oct 2010 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost			
Cost	1279.6	739.1	
Quantity	54	10	
Unit Cost	23.696	73.910	**+211.91**[1]
Average Procurement Unit Cost			
Cost	630.0	121.1	
Quantity	52	8	
Unit Cost	12.115	15.138	+24.95

Item	TY $M		TY % Change
	Current UCR Baseline (Oct 2012 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost (PAUC)			
Cost	1449.4	744.6	
Unit Cost	26.841	74.460	+177.41
Average Procurement Unit Cost (APUC)			
Cost	795.0	127.3	
Unit Cost	15.288	15.912	+4.08

Item	TY $M		TY % Change
	Revised Original UCR Baseline (Oct 2010 APB)	Current Estimate (Dec 2015 SAR)	
Program Acquisition Unit Cost (PAUC)			
Cost	1449.4	744.6	
Unit Cost	26.841	74.460	+177.41
Average Procurement Unit Cost (APUC)			
Cost	795.0	127.3	
Unit Cost	15.288	15.912	+4.08

[1] *Nunn-McCurdy Breach*

The impact of the FY 2017 PB reductions caused a Nunn-McCurdy unit cost breach. The March 2016 ADM issued by USD (AT&L) truncates the RMS program to the 10 units already delivered. The Unit Cost Report is reflective of Quantity 10 units vice the Quantity 11 provided in FY 2017 PB.

Unit Cost Breach Data		
Changes From Previous SAR	$M/Qty.	Percent
PAUC (BY $M)	49.323	+200.61
APUC (BY $M)	2.313	+18.04
PAUC Quantity	-44	0.00
PAUC (TY $M)	45.949	+161.16
APUC (TY $M)	-0.780	-4.67

Initial SAR Information - Dec 2006	BY2006 $M	TY $M
Program Acquisition Cost	1298.2	1411.7

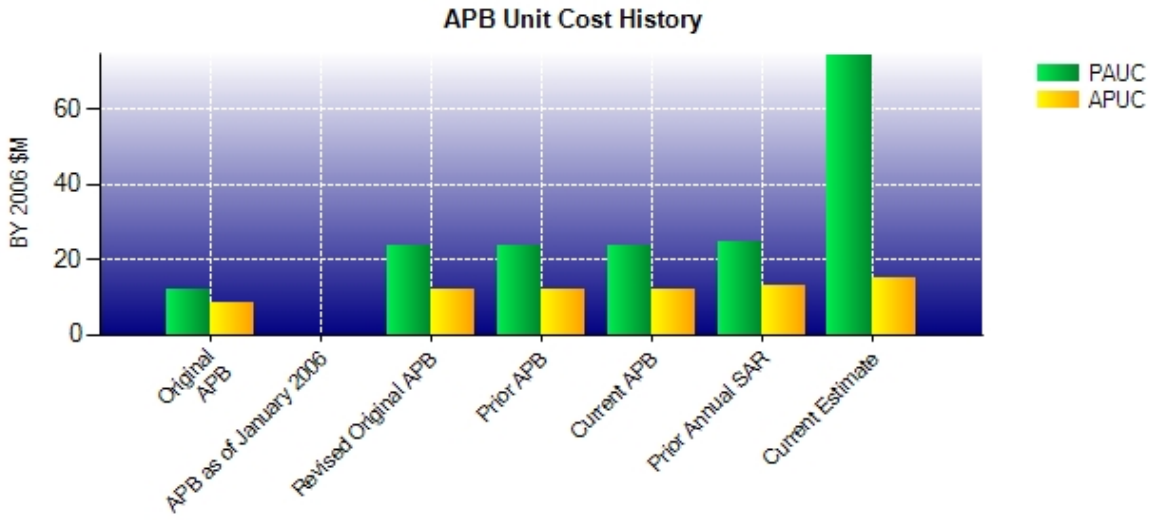
Unit Cost PAUC Changes

The impact of the FY 2017 PB reductions caused a Nunn-McCurdy unit cost breach. The March 2016 ADM issued by USD (AT&L) truncates the RMS program to the 10 units already delivered. The Unit Cost Report is reflective of Quantity 10 units vice the Quantity 11 provided in FY 2017 PB.

Unit Cost APUC Changes

The impact of the FY 2017 PB reductions caused a Nunn-McCurdy unit cost breach. The March 2016 ADM issued by USD (AT&L) truncates the RMS program to the 10 units already delivered. The Unit Cost Report is reflective of Quantity 10 units vice the Quantity 11 provided in FY 2017 PB.

Unit Cost History



Item	Date	BY 2006 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Oct 2006	12.080	8.364	12.957	9.572
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	Oct 2010	23.696	12.115	26.841	15.288
Prior APB	Oct 2010	23.696	12.115	26.841	15.288
Current APB	Oct 2012	23.696	12.115	26.841	15.288
Prior Annual SAR	Dec 2014	24.587	12.825	28.511	16.692
Current Estimate	Dec 2015	73.910	15.138	74.460	15.912

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial PAUC Production Estimate	Changes								PAUC Development Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
12.957	-0.752	3.262	2.950	0.454	6.344	0.000	1.626	13.884	26.841

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
26.841	1.010	66.349	5.300	0.000	-12.520	0.000	-12.520	47.619	74.460

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial APUC Production Estimate	Changes								APUC Development Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
9.572	-0.783	-0.129	3.238	0.000	1.702	0.000	1.688	5.716	15.288

Current SAR Baseline to Current Estimate (TY $M)									
APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
15.288	0.838	19.399	6.625	0.000	-10.588	0.000	-15.650	0.624	15.912

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	N/A	Dec 1999	Dec 1999
Milestone C	N/A	May 2014	Jul 2005	Jul 2005
IOC	N/A	Jan 2015	Sep 2007	Aug 2018
Total Cost (TY $M)	N/A	1449.4	1399.4	744.6
Total Quantity	N/A	54	108	10
PAUC	N/A	26.841	12.957	74.460

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	654.4	795.0	--	1449.4
Previous Changes				
Economic	+4.2	+12.5	--	+16.7
Quantity	--	--	--	--
Schedule	--	+103.6	--	+103.6
Engineering	--	--	--	--
Estimating	+13.0	-9.3	--	+3.7
Other	--	--	--	--
Support	--	-33.8	--	-33.8
Subtotal	+17.2	+73.0	--	+90.2
Current Changes				
Economic	-0.8	-5.8	--	-6.6
Quantity	--	-517.5	--	-517.5
Schedule	--	-50.6	--	-50.6
Engineering	--	--	--	--
Estimating	-53.5	-75.4	--	-128.9
Other	--	--	--	--
Support	--	-91.4	--	-91.4
Subtotal	-54.3	-740.7	--	-795.0
Total Changes	-37.1	-667.7	--	-704.8
CE - Cost Variance	617.3	127.3	--	744.6
CE - Cost & Funding	617.3	127.3	--	744.6

Summary BY 2006 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	649.6	630.0	--	1279.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+71.9	--	+71.9
Engineering	--	--	--	--
Estimating	+11.2	-10.0	--	+1.2
Other	--	--	--	--
Support	--	-25.0	--	-25.0
Subtotal	+11.2	+36.9	--	+48.1
Current Changes				
Economic	--	--	--	--
Quantity	--	-382.1	--	-382.1
Schedule	--	-38.0	--	-38.0
Engineering	--	--	--	--
Estimating	-42.8	-58.7	--	-101.5
Other	--	--	--	--
Support	--	-67.0	--	-67.0
Subtotal	-42.8	-545.8	--	-588.6
Total Changes	-31.6	-508.9	--	-540.5
CE - Cost Variance	618.0	121.1	--	739.1
CE - Cost & Funding	618.0	121.1	--	739.1

Previous Estimate: December 2014

Cost Variance Notes

All variances are related to the impact of the FY 2017 PB and Independent Review Team (IRT) Report.

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.8
Adjustment for current and prior escalation. (Estimating)	+0.5	+0.5
Revised Estimate to align to FY 2017 PB (Estimating)	-43.3	-54.0
RDT&E Subtotal	-42.8	-54.3

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-5.8
Adjustment for current and prior escalation. (Estimating)	+0.5	+0.6
Quantity variance resulting from a decrease of 44 Remote Multi Mission Vehicles (RMMVs) from 52 to 8. (Subtotal)	-416.6	-563.2
Quantity variance resulting from a decrease of 44 RMMVs from 52 to 8. (Quantity)	(-382.1)	(-517.5)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(-38.0)	(-50.6)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+3.5)	(+4.9)
Revised Estimate to align to FY 2017 PB (Estimating) (QR)	-62.7	-80.9
Decrease in Other Support due to a change in RMMV quantities. (Support) (QR)	-35.3	-48.2
Decrease in Initial Spares due to the resulting decrease in RMMV quantities. (Support) (QR)	-31.7	-43.2
Procurement Subtotal	-545.8	-740.7

(QR) Quantity Related

Contracts

Contract Identification

Appropriation: RDT&E

Contract Name: Remote Multi Mission Vehicle (RMMV) LRIP 1 Support BOA DO-1 TECHEVAL and IOT&E Support

Contractor: Lockheed Martin Corporation

Contractor Location: 100 East 17th Street
Riviera Beach, FL 33404

Contract Number: N00024-15-G-6315

Contract Type: Cost Plus Fixed Fee (CPFF)

Award Date: December 22, 2014

Definitization Date: December 22, 2014

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
85.5	N/A	0	14.7	N/A	0	14.7	14.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the ceiling price is the total value of the Basic Ordering Agreement (BOA), and the BOA will be comprised of multiple Delivery Orders (DOs). The Target Price is the total value of the first DO (DO-1).

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (CPFF) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting.

Notes

Cost and schedule variances are not reported for this contract, because the cost or incentive portion does not meet the threshold requirements for earned value management reporting. The Delivery Order does not meet the threshold cost ($14.7).The Ceiling value of the Basic Ordering Agreement (BOA) is $85.5M. The BOA will be comprised of multiple Delivery Orders (DOs).

Contract Identification

Appropriation: RDT&E

Contract Name: Remote Minehunting System (RMS)/Littoral Combat Ship (LCS) Integration Contract

Contractor: Lockheed Martin Corporation

Contractor Location: 100 East 17th Street
Riviera Beach, FL 33404

Contract Number: N00024-13-C-6300/1

Contract Type: Cost Plus Fixed Fee (CPFF), Firm Fixed Price (FFP)

Award Date: May 21, 2013

Definitization Date: April 07, 2014

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
62.8	N/A	0	87.2	N/A	0	92.3	92.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to Increase in cost due to award of modification to upgrade of Remote Multi Mission Vehicles (RMMVs) 2, 5, and 6 to a v6.0 configuration via Firm-Fixed Price with an option.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (4/16/2015)	-1.9	-0.3
Previous Cumulative Variances	-1.7	-0.5
Net Change	-0.2	+0.2
Percent Variance	-4.70%	-0.60%
Percent Complete	+91.04%	

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to increased complexity to integrate with the AN/AQS-20 Pre Planned Product Improvement.

The favorable net change in the schedule variance is due to aging purchase requisitions.

Notes

Integrated Baseline Review was held on November 19, 2013 and contract was definitized on April 7, 2014.

This contract is more than 90% complete; therefore, this is the final report for this contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	2	2	2	100.00%
Production	8	8	8	100.00%
Total Program Quantity Delivered	10	10	10	100.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	744.6	Years Appropriated	21
Expended to Date	692.8	Percent Years Appropriated	95.45%
Percent Expended	93.04%	Appropriated to Date	741.6
Total Funding Years	22	Percent Appropriated	99.60%

The above data is current as of February 09, 2016.

Operating and Support Cost

Cost Estimate Details

Date of Estimate: March 16, 2016
Source of Estimate: POE
Quantity to Sustain: 10
Unit of Measure: Vehicle
Service Life per Unit: 10.00 Years
Fiscal Years in Service: FY 2015 - FY 2026

The Navy anticipates that the ADM issued will in effect truncate the RMS program to the 10 units already delivered and direct the Navy to develop a transition plan to shut-down RMS production in an orderly fashion and sustain the 10 RMS units in the Navy's inventory as test and integration assets.

Sustainment Strategy

RMS currently plans to execute an "organic/industry " three level maintenance strategy. Afloat, Ashore and Depot maintenance approaches are defined as follows: Afloat - critical corrective maintenance with Mission Package Detachment trained in corrective maintenance procedures. Intermediate maintenance will be done by the Mission Package Support Facility or their representative such as the In-service Engineering Agent or other shore support activities. Depot – Analysis was completed and the Original Equipment Manufacturer (OEM) was selected based on the number of vehicles and the repair capabilities identified. The first ten units will be under the OEM Depot Source of Repair. The RMS program is following the Independent Review Team Recommendations to deploy RMS as part of the Littoral Combat Ship Mine Countermeasures Mission Package (LCS MCM MP) in FY 2018. Based upon its performance and that of the other Minehunting alternatives an assessment will be made by the Navy on what solution will continue forward. If RMS is not selected, it will likely be phased out through FY 2026. If RMS is selected, the program will be reinstated.

Antecedent Information

No Antecedent.

Annual O&S Costs BY2006 $K		
Cost Element	**RMS Average Annual Cost Per Vehicle**	**No Antecedent System (Antecedent) No Antecedent System**
Unit-Level Manpower	0.000	--
Unit Operations	4.605	--
Maintenance	507.662	--
Sustaining Support	45.649	--
Continuing System Improvements	123.884	--
Indirect Support	0.000	--
Other	17.251	--
Total	699.051	--

The Unit-Level Manpower is a Littoral Combat Ship (LCS) Mission Module cost. RMS will still be deployed with the LCS Mine Countermeasure Mission Package (MCM MP) in FY 2018 per the Independent Review Team (IRT) recommendations.

Item	Total O&S Cost $M			
	RMS			No Antecedent System (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	649.0	713.9	69.9	0.0
Then Year	1109.0	N/A	119.4	N/A

The Current Estimate reflects the Program's truncation to the 10 units already delivered along with the reduced service life of 10 years.

Equation to Translate Annual Cost to Total Cost

Total O&S Costs = Average Annual Cost Per Vehicle x # Remote Multi Mission Vehicle (RMMV) Units x Service Life; $699.051K x 10 x 10 = $69,905K

O&S Cost Variance		
Category	**BY 2006 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2014 SAR	755.0	
Programmatic/Planning Factors	-685.1	Reflects change in POR inventory from 54 to 10 and the reduction of service life from 20 to 10 years.
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	-685.1	
Current Estimate	69.9	

Disposal Estimate Details

Date of Estimate: March 16, 2016

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2006 $M): Total costs for disposal of all Vehicle are 0.8

The per unit disposal cost is $6.53 per pound (lb.) in BY 2006 and was derived from an analogy to the AN/SLQ-32 Program. The weight is 12,850 lbs. as identified in the Remote Multi-Mission Vehicle CARD. Phase-out and disposal of the system begins in FY 2019 and ends in FY 2026.