



Selected Acquisition Report (SAR)

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



Remote Minehunting System (RMS)

As of FY 2016 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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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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Assigned: March 6, 2014

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-20A. The RMMV is a high-endurance, semi-autonomous, low-observable, unmanned vehicle. The AN/AQS-20A, 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-20A 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.

Executive Summary

In 2014, the RMS program postured itself to fully support the Littoral Combat Ship (LCS) Mine Countermeasures (MCM) Mission Package (MP). The program successfully completed the upgrade of four Remote Multi-Mission Vehicles (RMMVs) to the v6.0 configuration. The RMMV v6.0 configuration merges the Reliability Growth Program (v4.1 and v4.2), Multi Vehicle Communications System (v5.0) and LCS Integration requirements that incorporate required launch, recovery and handling changes as well as fleet feedback.

The Acquisition Strategy (AS) for the RMMV was approved by USD(AT&L) on April 8, 2014. The AS endorsed the execution of the following contract actions: Increase the LCS Integration contract value to upgrade current RMMVs to a v6.0 configuration; award of a sole source LRIP 1 Maintenance and Integration contract to support the existing LRIP 1 RMMVs; release of a competitive LRIP 2/FRP and interim maintenance support Request for Proposal (RFP).

On July 1, 2014, a RMMV DAB In Process Review (IPR) was held in lieu of a Milestone C review. The IPR ADM authorized release of the production RFP, documented that the program met the majority of the Milestone C requirements outlined in the June 2010 Nunn-McCurdy ADM, directed adherence to affordability caps, and required the program to return for a Milestone C decision prior to competitive production award.

The RMMV supported LCS MCM MP Developmental Test Phase IV Period 2 from August 2014 through October 2014. The RMMV reliability and launch and recovery upgrades were tested from an LCS for the first time. The RMMV was launched 16 times and recovered 14 times with an average recovery time of less than 45 minutes. The RMMV supported nine days and 140 hours of off board operations; eight minehunting missions (four shallow and four deep); two mine identification missions; and launch and recovery proficiency demonstrations.

The RMMV competitive production RFP was released in August 2014. Source selection is currently underway. Contract award has been delayed until FY 2016 as a result of the Senate Appropriations Committee – Defense reduction on the FY 2015 procurement funds (\$42.3M).

RMMV v6.0 conducted integration and developmental testing with the AN/AQS-20A and AN/AQS-20B Pre-Planned Product Improvement. RMMVs are currently being prepared for embark to support the LCS MCM MP Technical Evaluation (TECHEVAL) period.

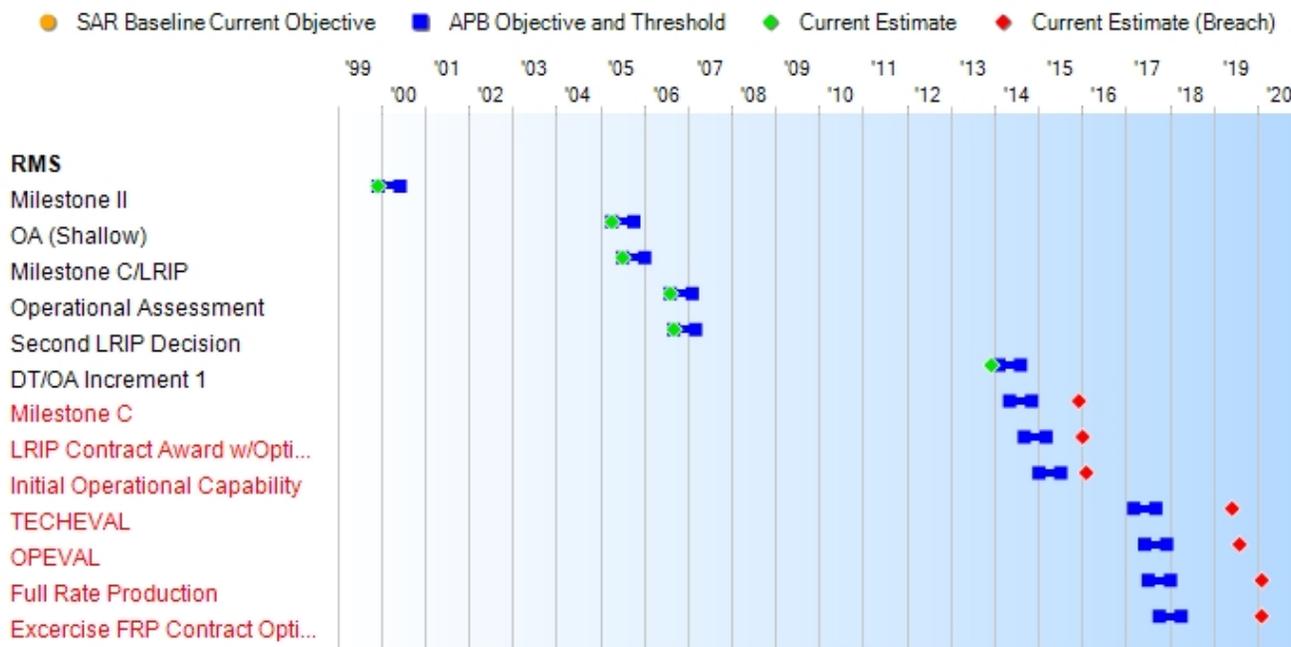
The FY 2015 plan is to continue RMMV upgrades, support LCS MCM MP TECHEVAL and Initial Operational Test & Evaluation, prepare for a Milestone C decision and prepare for award of a competitive production contract in early FY 2016.

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

Threshold Breaches

APB Breaches		Explanation of Breach	
Schedule	<input checked="" type="checkbox"/>	<p>The Current Estimate for Milestone C has changed from May 2014 to December 2015 as the MDA determined the need for the Navy to fully evaluate the RMMV LRIP 2 competitive proposals in terms of affordability and program risk prior to a Milestone C Decision. USD (AT&L), issued an ADM for the Secretary of the Navy on August 25, 2014, that recognized the program schedule breach and acknowledged that the APB that was approved in October 2012 will be updated at Milestone C. USD(AT&L) directs RMS to return for a Milestone C decision when the entrance criteria have been completed.</p> <p>The O&S Cost reported in this SAR are based on the Program Life Cycle Cost Estimate dated August 2014. The Current Estimate does exceed the APB Threshold because the 2014 estimate used RMS testing actuals vs analogy (SLQ-48) and applied inflation indices to the sunk cost.</p>	
Performance	<input type="checkbox"/>		
Cost	RDT&E		<input type="checkbox"/>
	Procurement		<input type="checkbox"/>
	MILCON		<input type="checkbox"/>
	Acq O&M		<input type="checkbox"/>
O&S Cost	<input checked="" type="checkbox"/>		
Unit Cost	PAUC		<input type="checkbox"/>
	APUC		<input type="checkbox"/>
Nunn-McCurdy Breaches			
Current UCR Baseline			
	PAUC	None	
	APUC	None	
Original UCR Baseline			
	PAUC	None	
	APUC	None	

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	Dec 2015¹ (Ch-1)
LRIP Contract Award w/Options for FRP	Sep 2014	Sep 2014	Mar 2015	Jan 2016¹ (Ch-2)
Initial Operational Capability	Jan 2015	Jan 2015	Jul 2015	Feb 2016¹ (Ch-2)
TECHEVAL	Mar 2017	Mar 2017	Sep 2017	Jun 2019¹ (Ch-2)
OPEVAL	Jun 2017	Jun 2017	Dec 2017	Aug 2019¹ (Ch-2)
Full Rate Production	Jul 2017	Jul 2017	Jan 2018	Feb 2020¹ (Ch-2)
Exercise FRP Contract Options under LRIP Contract	Oct 2017	Oct 2017	Apr 2018	Feb 2020¹ (Ch-2)

¹ APB Breach

Change Explanations

(Ch-1) The Current Estimate for Milestone C has changed from May 2014 to December 2015 as the MDA determined the need for the Navy to fully evaluate the RMMV LRIP 2 competitive proposals in terms of affordability and program risk prior to a Milestone C Decision.

USD(AT&L), issued an ADM for the Secretary of the Navy on August 25, 2014, that recognized the program schedule breach and acknowledged that the APB that was approved in October 2012 will be updated at Milestone C. USD(AT&L) directs RMS to return for a Milestone C decision when entrance criteria have been completed.

(Ch-2) The Current Estimate for these events, LRIP Contract Award, IOC, TECHEVAL, OPEVAL and FRP were reassessed as a result of the Senate Appropriations Committee - Defense reduction of \$42.3M which zeroed out the FY 2015 Procurement funding for RMS. LRIP Contract Award w/Options for FRP was updated from February 2015 to January 2016. IOC was updated from July 2015 to February 2016. IOC was changed to align with the Littoral Combat Ship. TECHEVAL was updated from March 2017 to June 2019, OPEVAL was updated from June 2017 to August 2019, FRP was updated from November 2017 to February 2020 and Exercise FRP Contract Options under LRIP Contract was updated from February 2018 to February 2020. Milestones align with a February 2016 Contract Award and 34 months production lead time.

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	0.80
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

None

Notes

The RMS CPD was approved on March 28, 2014. An update to the APB is underway for a FY 2016 Milestone C. There are no changes to the KPPs based on the CPD.

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	1319 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.
Navy	1319 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.
Navy	1319 04	0604122N
	Project	Name
	0260	Remote Minehunting Systems Notes: Active beginning in FY 2015. Generated due to ACAT ID funding transparency requirement.

Procurement

Appn	BA	PE
Navy	1810 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: Generated due to the ACAT ID funding transparency requirement. (Includes RMMVs, RMMV Cradles and Production Engineering)
Navy	1810 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.

Navy 1810 08 0204228N

Line Item	Name
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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	660.8	654.4	654.4	671.6
Procurement	630.0	630.0	693.0	666.9	795.0	795.0	868.0
Flyaway	--	--	--	580.7	--	--	756.5
Recurring	--	--	--	580.7	--	--	756.5
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	86.2	--	--	111.5
Other Support	--	--	--	54.5	--	--	68.3
Initial Spares	--	--	--	31.7	--	--	43.2
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	1327.7	1449.4	1449.4	1539.6

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 Department 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
Procurement		52	52
Total		54	54

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2016 President's Budget / December 2014 SAR (TY\$ M)									
Appropriation	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
RDT&E	575.6	21.1	20.1	28.0	8.2	10.0	8.6	0.0	671.6
Procurement	109.3	0.0	87.6	68.4	58.5	58.0	37.4	448.8	868.0
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 2016 Total	684.9	21.1	107.7	96.4	66.7	68.0	46.0	448.8	1539.6
PB 2015 Total	682.9	63.4	86.7	83.5	76.1	76.9	70.9	354.9	1495.3
Delta	2.0	-42.3	21.0	12.9	-9.4	-8.9	-24.9	93.9	44.3

Quantity Summary										
FY 2016 President's Budget / December 2014 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	8	0	2	4	4	4	4	2	28
PB 2016 Total	2	8	0	2	4	4	4	4	2	54
PB 2015 Total	2	8	2	4	4	4	4	4	4	54
Delta	0	0	-2	-2	0	0	0	0	-2	6

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	--	--	--	--	--	--	20.1
2017	--	--	--	--	--	--	28.0
2018	--	--	--	--	--	--	8.2
2019	--	--	--	--	--	--	10.0
2020	--	--	--	--	--	--	8.6
Subtotal	2	--	--	--	--	--	671.6

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	--	--	--	--	--	--	29.0
2012	--	--	--	--	--	--	44.2
2013	--	--	--	--	--	--	32.1
2014	--	--	--	--	--	--	29.0
2015	--	--	--	--	--	--	17.8
2016	--	--	--	--	--	--	16.7
2017	--	--	--	--	--	--	22.8
2018	--	--	--	--	--	--	6.5
2019	--	--	--	--	--	--	7.8
2020	--	--	--	--	--	--	6.6
Subtotal	2	--	--	--	--	--	660.8

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	2	74.3	6.3	--	80.6	7.0	87.6	
2017	4	55.6	5.9	--	61.5	6.9	68.4	
2018	4	45.6	5.9	--	51.5	7.0	58.5	
2019	4	44.8	6.0	--	50.8	7.2	58.0	
2020	2	24.0	6.1	--	30.1	7.3	37.4	
2021	4	46.6	6.2	--	52.8	7.4	60.2	
2022	4	47.5	6.3	--	53.8	7.6	61.4	
2023	4	48.3	6.5	--	54.8	7.8	62.6	
2024	4	49.3	6.7	--	56.0	7.8	63.8	
2025	4	50.2	6.9	--	57.1	8.0	65.1	
2026	4	51.2	7.0	--	58.2	8.2	66.4	
2027	4	53.0	7.1	--	60.1	8.4	68.5	
2028	--	--	--	--	--	0.8	0.8	
Subtotal	52	679.6	76.9	--	756.5	111.5	868.0	

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	2	61.0	5.1	--	66.1	5.8	71.9	
2017	4	44.8	4.7	--	49.5	5.6	55.1	
2018	4	36.0	4.7	--	40.7	5.5	46.2	
2019	4	34.7	4.7	--	39.4	5.5	44.9	
2020	2	18.2	4.6	--	22.8	5.6	28.4	
2021	4	34.7	4.6	--	39.3	5.5	44.8	
2022	4	34.6	4.7	--	39.3	5.5	44.8	
2023	4	34.5	4.8	--	39.3	5.5	44.8	
2024	4	34.6	4.6	--	39.2	5.5	44.7	
2025	4	34.5	4.7	--	39.2	5.5	44.7	
2026	4	34.5	4.7	--	39.2	5.5	44.7	
2027	4	35.0	4.7	--	39.7	5.5	45.2	
2028	--	--	--	--	--	0.5	0.5	
Subtotal	52	524.1	56.6	--	580.7	86.2	666.9	

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	2017

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.

USD(AT&L) issued an ADM to the Secretary of the Navy on August 25, 2014 that authorized release of a Request for Proposal for LRIP 2 procurement. Authorization to award the LRIP 2 contract and procure up to 10 LRIP 2 units is anticipated at Milestone C.

Foreign Military Sales

None

Nuclear Costs

None

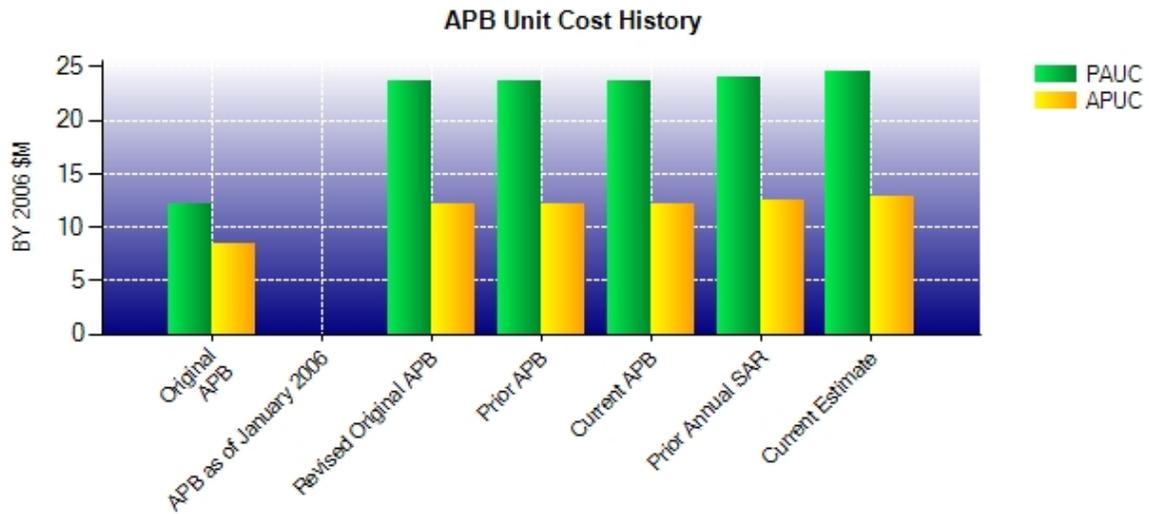
Unit Cost

Unit Cost Report

Item	BY 2006 \$M	BY 2006 \$M	% Change
	Current UCR Baseline (Oct 2012 APB)	Current Estimate (Dec 2014 SAR)	
Program Acquisition Unit Cost			
Cost	1279.6	1327.7	
Quantity	54	54	
Item	23.696	24.587	+3.76
Average Procurement Unit Cost			
Cost	630.0	666.9	
Quantity	52	52	
Unit Cost	12.115	12.825	+5.86

Item	BY 2006 \$M	BY 2006 \$M	% Change
	Revised Original UCR Baseline (Oct 2010 APB)	Current Estimate (Dec 2014 SAR)	
Program Acquisition Unit Cost			
Cost	1279.6	1327.7	
Quantity	54	54	
Unit Cost	23.696	24.587	+3.76
Average Procurement Unit Cost			
Cost	630.0	666.9	
Quantity	52	52	
Unit Cost	12.115	12.825	+5.86

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 2013	24.043	12.556	27.691	16.171
Current Estimate	Dec 2014	24.587	12.825	28.511	16.692

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	0.309	0.000	1.919	0.000	0.133	-0.065	-0.626	1.670	28.511

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	0.240	0.000	1.992	0.000	-0.112	-0.067	-0.650	1.403	16.692

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	N/A	Dec 2015	
IOC	N/A	Jan 2015	Sep 2007	Feb 2016	
Total Cost (TY \$M)	N/A	1449.4	1399.4	1539.6	
Total Quantity	N/A	54	108	54	
PAUC	N/A	26.841	12.957	28.511	

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	654.4	795.0	--	1449.4
Previous Changes				
Economic	+5.4	+19.0	--	+24.4
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-5.4	+35.0	--	+29.6
Other	--	-3.5	--	-3.5
Support	--	-4.6	--	-4.6
Subtotal	--	+45.9	--	+45.9
Current Changes				
Economic	-1.2	-6.5	--	-7.7
Quantity	--	--	--	--
Schedule	--	+103.6	--	+103.6
Engineering	--	--	--	--
Estimating	+18.4	-40.8	--	-22.4
Other	--	--	--	--
Support	--	-29.2	--	-29.2
Subtotal	+17.2	+27.1	--	+44.3
Total Changes	+17.2	+73.0	--	+90.2
CE - Cost Variance	671.6	868.0	--	1539.6
CE - Cost & Funding	671.6	868.0	--	1539.6

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	--	--	--	--
Engineering	--	--	--	--
Estimating	-4.2	+25.2	--	+21.0
Other	--	--	--	--
Support	--	-2.3	--	-2.3
Subtotal	-4.2	+22.9	--	+18.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+71.9	--	+71.9
Engineering	--	--	--	--
Estimating	+15.4	-35.2	--	-19.8
Other	--	--	--	--
Support	--	-22.7	--	-22.7
Subtotal	+15.4	+14.0	--	+29.4
Total Changes	+11.2	+36.9	--	+48.1
CE - Cost Variance	660.8	666.9	--	1327.7
CE - Cost & Funding	660.8	666.9	--	1327.7

Previous Estimate: December 2013

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-1.2
Increase in Navy funding in FY 2016, FY 2017 and FY 2019 in accordance with the Assistant Secretary of the Navy Joint Memorandum dated May 23, 2014, to fully fund RMS to the interim RMS SCP. (Estimating)	+14.8	+18.0
Miscellaneous budget adjustment. (Estimating)	-1.6	-2.1
Adjustment for current and prior escalation. (Estimating)	+0.5	+0.5
Increase in FY 2014 to support Developmental Testing/Integrated Testing for sonar integration to the Remote Multi-Mission Vehicle. (Estimating)	+1.7	+2.0
RDT&E Subtotal	+15.4	+17.2

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-6.5
Stretch-out of procurement buy profile from FY 2026 to FY 2027 due to Congressional reduction of procurement funding in FY 2015 which resulted in delay of contract award. (Schedule)	0.0	+13.9
Navy decision to defer Littoral Combat Ship (LCS) Mine Countermeasures (MCM) Mission Package (MP) in FY 2020. (Estimating)	-20.7	-27.0
Navy Working Capital Fund adjustments. (Estimating)	-9.3	-11.5
Decrease due to Congressional reduction in FY 2015. (Estimating)	-35.3	-42.3
Miscellaneous budget adjustment. (Estimating)	-14.5	-18.9
Revised estimate due to reduction in FY 2015 funding resulting in change in procurement profile. Reduction in FY 2015 from two units to zero; in FY 2016 from four units to two. (Schedule)	+46.1	+55.7
Revised estimate due to reduction in FY 2020 funding resulting in change in procurement profile. Reduction in FY 2020 from four units to two. (Schedule)	+25.8	+34.0
Increase in FY 2016 to fund additional LCS MCM MP while Navy phases out MCM-1 Class Ships. (Estimating)	+19.2	+23.4
Increase in FY 2017 through FY 2027 is due to the change in procurement profile due to reduction of funding in FY 2015. (Estimating)	+18.7	+26.3
Revised estimate to reflect Program Life Cycle Cost Estimate (PLCCE) of August 2014. (Estimating)	+6.5	+9.0
Adjustment for current and prior escalation. (Estimating)	+0.2	+0.2
Decrease in Other Support based on PLCCE dated August 2014. (Support)	-22.3	-29.3
Increase in Initial Spares based on PLCCE dated August 2014. (Support)	-0.4	+0.1
Procurement Subtotal	+14.0	+27.1

Contracts

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)
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	62.8	N/A	0	62.8	62.8

Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/16/2015)	-1.7	-0.5
Previous Cumulative Variances	--	--
Net Change	-1.7	-0.5

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to delays in completing Remote Multi-Mission Vehicles (RMMVs) v4.2 to v6.0 upgrades.

The unfavorable cumulative schedule variance is due to delays in completing Remote Multi-Mission Vehicles (RMMVs) v4.2 to v6.0 upgrades.

Notes

This is the first time this contract is being reported.

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

The LCS Integration Contract is 89% complete.

Contract Identification

Appropriation: RDT&E
Contract Name: 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	4.2	N/A	0	4.2	4.2	

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to multiple delivery orders that comprise the Basic Ordering Agreement. The Current Contract Price Target represents the funded value of the first delivery order.

Contract Variance			
Item	Cost Variance		Schedule Variance
Cumulative Variances To Date	0.0		0.0
Previous Cumulative Variances	--		--
Net Change	+0.0		+0.0

Cost and Schedule Variance Explanations

None

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because EVM was not applied on the first delivery order due to it not meeting the EVM thresholds in the DFARS and the scope of the delivery order not warranting the use of EVM. If in the future, an individual delivery order or group of related delivery orders meets the thresholds and has scope that is developmental in nature, with schedulable efforts, then EVM will be applied.

Notes

This is the first time this contract is being reported.

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	52	15.38%
Total Program Quantity Delivered	10	10	54	18.52%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	1539.6	Years Appropriated	20
Expended to Date	683.7	Percent Years Appropriated	60.61%
Percent Expended	44.41%	Appropriated to Date	706.0
Total Funding Years	33	Percent Appropriated	45.86%

The above data is current as of January 30, 2015.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	August 20, 2014
Source of Estimate:	POE
Quantity to Sustain:	54
Unit of Measure:	Vehicle
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 2015 - FY 2043

The Production & Deployment effort assumes APB quantity of 54 Remote Multi-Mission Vehicles (RMMVs) (two Engineering Development Models, 18 LRIP and 34 Production Units). Operational Units have an operational tempo (OPTEMPO) of 164 hours per year. Trainers have an OPTEMPO of 98.4 hours per year. Maintenance costs do not need to be scaled for operational versus test environments. Fly-Away Teams will travel twice per year to each of six locations, four Outside the Continental United States and two Continental United States. Trainers will require 60% of overhaul effort as operational units.

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 LRIP units will be under the OEM Depot Source of Repair. The next generation design supporting the acquisition of the 44 additional units will be based on performance specifications and will drive the need to re-evaluate depot support once the specifications and technical data packages are fully defined.

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.

Item	Total O&S Cost \$M			
	RMS		No Antecedent System (Antecedent)	
	Current Development APB Objective/Threshold	Current Estimate		
Base Year	649.0	713.9	755.0¹	N/A
Then Year	1109.0	N/A	1162.9	N/A

¹ APB O&S Cost Breach

The Current Estimate does exceed the APB Threshold because the 2014 estimate used RMS testing actuals vs analogy (SLQ-48) and applied inflation indices to the sunk cost.

Equation to Translate Annual Cost to Total Cost

Total O&S Costs = Average Annual Cost Per Vehicle x #RMMV Units x Service Life; \$699.051K x 54 x 20 = \$754,975K

O&S Cost Variance		
Category	BY 2006 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2013 SAR	649.0	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	87.4	The 2014 estimate used RMS testing actuals vs analogy (SLQ-48) and applied inflation indices to the sunk cost.
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	18.6	Sunk O&S Costs identified in Program Life Cycle Cost Estimate.
Total Changes	106.0	

Current Estimate 755.0

Disposal Estimate Details

Date of Estimate: August 20, 2014
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 2006 \$M): Total costs for disposal of all Vehicle are 4.5

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 2034 and ends in FY 2048.