Selected Acquisition Report (SAR)

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

Remote Minehunting System (RMS)

As of FY 2015 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
$K - Thousands of Dollars
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

Remote Minehunting System (RMS)

DoD Component

Navy

Responsible Office

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), AN/WLD-1(V)2, carrying a towed variable depth sensor, the AN/AQS-20A. The RMMV is a high-endurance, semi-autonomous, low-observable, unmanned, diesel-powered vehicle, operated and maintained from the Littoral Combat Ship (LCS). The AN/AQS-20A incorporates five separate sonar/sensors (side-look sonar, forward-look sonar, volume search sonar, gap fill sonar, and electro-optical identification sensor) in a compact, lightweight, and hydro-dynamically 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 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 2013, the RMS Program successfully completed the Remote Multi-Mission Vehicle (RMMV) Reliability Growth Program (RGP) in accordance with the Office of the Under Secretary of Defense, Acquisition, Technology & Logistics Nunn-McCurdy Certification Acquisition Decision Memorandum dated June 1, 2010.

The objective of the RGP was for the RMMV to obtain a minimum of 75 hours Mean Time Between Operational Mission Failure (MTBOMF) utilizing a three-phased approach (v4.1, v4.2 and v4.3).

RGP v4.2 was successfully completed in June 2013. Testing included use of the AN/AQS-20A variable depth sonar, accumulating 855 hours of total system operating time. A MTBOMF of 213.7 hours was demonstrated by the RMMV, significantly exceeding the 75 hour requirement. Due to the success of v4.2, PMS 403 has deemed v4.3 unnecessary, resulting in significant cost savings, which the Program Office has applied to the Littoral Combat Ship (LCS) Integration contract.

The RMS program provided two non-RGP RMMVs to support the LCS Mine Countermeasures (MCM) Mission Package (MP) Developmental Test (DT) Phase IV Period 1 in August 2013. Multi-Vehicle Communications System (MVCS) was tested and RMS Launch, Handling & Recovery (LH&R) cycles from LCS-2 were conducted. Improved LH&R operation was demonstrated and modifications to the LH&R were identified and are being implemented in RMMV v6.0.

FY 2013 sequestration resulted in the delay of DT-IIG from 4th quarter FY 2013 to 1st quarter FY 2014. DT-IIG successfully completed in December 2013. Two RMMVs and AN/AQS-20A sonars were operated exclusively by the LCS MCM MP Detachment Sailors, collecting data during operations in the target minefields (inert mines). A total of 385 hours were accumulated across eighteen at-sea missions. Preliminary indications are that sufficient data was collected to evaluate RMS performance. Two Operational Mission Failures (OMFs) were scored, resulting in a MTBOMF of 192.5 hours. Final DT Report expected in April 2014.

The remaining FY 2014 plan is to achieve a Milestone C decision; conduct a competition for LRIP/Full Rate Production units (award is planned for 2nd quarter FY 2015) and continue RMS LCS MCM MP integration work to upgrade four vehicles in support of LCS testing en route to LCS MCM MP Initial Operational Test & Evaluation in FY 2015.

The RMS RMMV Capability Production Document was approved on March 28, 2014. The RMS RMMV Acquisition Strategy is in final coordination in the Office of the Under Secretary of Defense and approval is expected in April 2014.

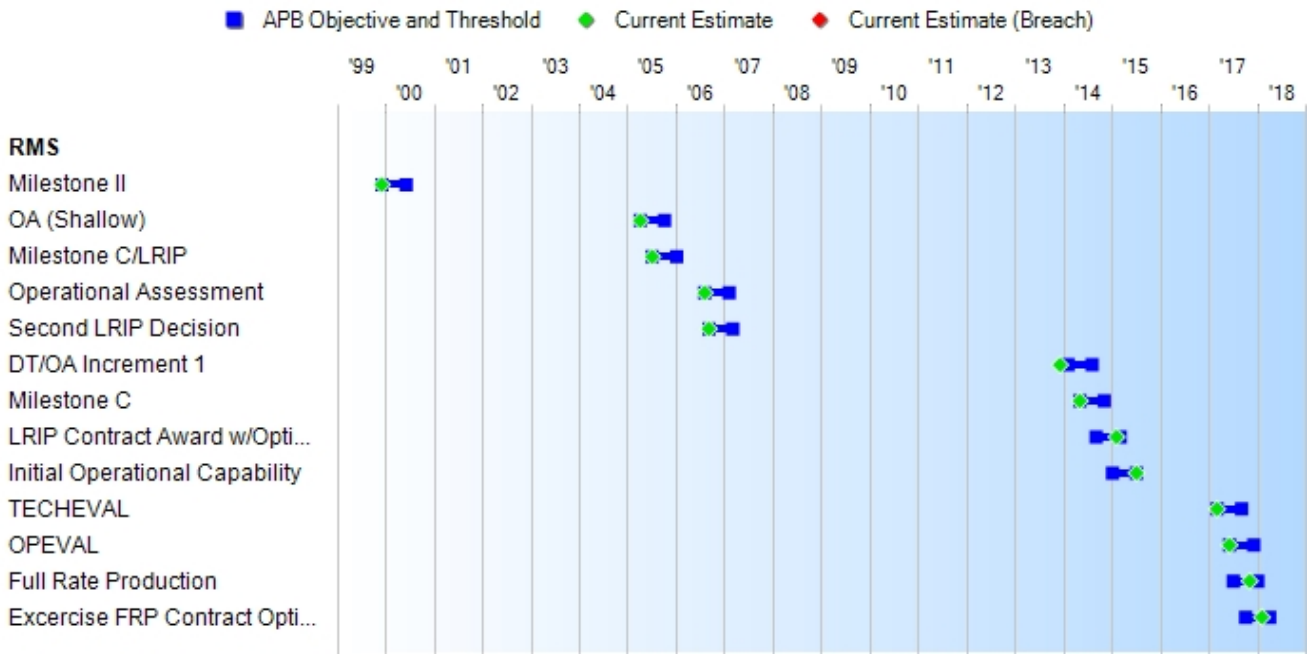
There are no significant software-related issues with this program at this time.

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	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Milestones	SAR Baseline Dev Est	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	(Ch-1)
Milestone C	MAY 2014	MAY 2014	NOV 2014	MAY 2014	
LRIP Contract Award w/Options for FRP	SEP 2014	SEP 2014	MAR 2015	FEB 2015	(Ch-2)
Initial Operational Capability	JAN 2015	JAN 2015	JUL 2015	JUL 2015	(Ch-3)
TECHEVAL	MAR 2017	MAR 2017	SEP 2017	MAR 2017	
OPEVAL	JUN 2017	JUN 2017	DEC 2017	JUN 2017	
Full Rate Production	JUL 2017	JUL 2017	JAN 2018	NOV 2017	(Ch-3)
Excercise FRP Contract Options under LRIP Contract	OCT 2017	OCT 2017	APR 2018	FEB 2018	(Ch-3)

Change Explanations

(Ch-1) The Current Estimate for the event, DT/OA Increment I, was updated from February 2014 to December 2013. RMS DT-IIG successfully completed in December 2013. The OA, originally planned to start January 2014, was cancelled due to the non-approval of the OA Test Plan by the DOT&E. The Program Office concurs with DOT&E's assessment that there is sufficient data on RMMV v4.2 performance (89 offshore missions with over 1600 hours of operating time) and minimal new information would be gained by executing an OA using the v4.2 vehicle.

(Ch-2) The Current Estimate for the event, LRIP Contract Award w/Options for FRP, was updated from September 2014 to February 2015, to reflect the amount of time required to award a competitive contract in the current contracting environment.

(Ch-3) The Current Estimate for these events, IOC, FRP and Exercise FRP Contract Options under LRIP Contract, were reassessed by the Program Office. IOC was updated from January 2014 to July 2015, FRP was updated from July 2017 to November 2017 and Exercise FRP Contract Options under LRIP Contract was updated from October 2017 to February 2018.

Memo

An update to the APB is currently under development in preparation for MS C in FY 2014. Future Events/Milestones have been updated and will be re-assessed for MS C to align RMS with the LCS MCM MP IOT&E in September 2015.

Acronyms and Abbreviations

DOT&E - Director, Operational Test & Evaluation
DT - Developmental Testing
FRP - Full Rate Production
IOT&E - Initial Operational Test & Evaluation
LCS - Littoral Combat Ship
MCM - Mine Countermeasures
MP - Mission Package
MS - Milestone
OA - Operational Assessment
OPEVAL - Operational Evaluation
RMMV - Remote Multi-Mission Vehicle
TECHEVAL - Technical Evaluation

Performance

Characteristics	SAR Baseline Dev Est	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 Source

Capability Development Document (CDD) dated May 31, 2011

Change Explanations

None

Memo

A CPD is currently under JROC review, final approval is expected in April 2014. An update to the APB is underway for MS C. There are no changes to KPPs.

Acronyms and Abbreviations

CCT - Close-Close Tethered
CPD - Capability Production Document
CT - Close Tethered
IV - In-Volume
JROC - Joint Requirements Oversight Council
KPP - Key Performance Parameter
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		RMS Prog - Cong	(Shared)	(Sunk)
	Notes:		Congressional Add to continue development of RMS during the RMS reliability growth program.		
Navy	1319	04	0603581N		
	Project		**Name**		
	3129A		MIW Modules Prog - Cong	(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 transparency requirement.		

Procurement

Appn		BA	PE		
Navy	1810	01	0204230N		
	Line Item		**Name**		
	34160100		LCS Modules	(Shared)	(Sunk)
	Notes:		The RMS budget is only the Remote Multi-Mission Vehicle (RMMV) element of cost under the Cost Code LM001.		
	34160500		Remote Minehunting System (RMS)		
	Notes:		Generated due to the ACAT ID transparency requirement. (Includes RMMVs, RMMV Cradles and Production		

			Engineering)		
Navy	1810	02	0204302N		
	Line Item		**Name**		
	34262200		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**		
	34902000		Spares and Repair Parts	(Shared)	(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2006 $M			BY2006 $M	TY $M		
Appropriation	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	649.6	649.6	714.2	645.4	654.4	654.4	654.4
Procurement	630.0	630.0	693.0	652.9	795.0	795.0	840.9
Flyaway	--	--	--	544.0	--	--	699.6
Recurring	--	--	--	541.3	--	--	696.4
Non Recurring	--	--	--	2.7	--	--	3.2
Support	--	--	--	108.9	--	--	141.3
Other Support	--	--	--	76.8	--	--	98.2
Initial Spares	--	--	--	32.1	--	--	43.1
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	1298.3	1449.4	1449.4	1495.3

Confidence Level for Current APB Cost 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.

A Service Cost Position and an Independent Cost Estimate are underway in support of a Milestone C in FY 2014.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	2	2	2
Procurement	52	52	52
Total	54	54	54

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2015 President's Budget / December 2013 SAR (TY$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	541.8	31.8	21.1	15.9	16.0	8.4	8.6	10.8	654.4
Procurement	109.3	0.0	42.3	70.8	67.5	67.7	68.3	415.0	840.9
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 2015 Total	651.1	31.8	63.4	86.7	83.5	76.1	76.9	425.8	1495.3
PB 2014 Total	653.1	31.8	57.1	79.8	77.3	69.6	65.7	415.0	1449.4
Delta	-2.0	0.0	6.3	6.9	6.2	6.5	11.2	10.8	45.9

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	8	0	2	4	4	4	4	26	52
PB 2015 Total	2	8	0	2	4	4	4	4	26	54
PB 2014 Total	2	8	0	2	4	4	4	4	26	54
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
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	--	--	--	--	--	--	31.8
2015	--	--	--	--	--	--	21.1
2016	--	--	--	--	--	--	15.9
2017	--	--	--	--	--	--	16.0
2018	--	--	--	--	--	--	8.4
2019	--	--	--	--	--	--	8.6
2020	--	--	--	--	--	--	10.8
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**654.4**

Annual Funding BY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
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	--	--	--	--	--	--	27.0
2015	--	--	--	--	--	--	17.6
2016	--	--	--	--	--	--	13.0
2017	--	--	--	--	--	--	12.8
2018	--	--	--	--	--	--	6.6
2019	--	--	--	--	--	--	6.6
2020	--	--	--	--	--	--	8.2
Subtotal	**2**	**--**	**--**	**--**	**--**	**--**	**645.4**

Annual Funding TY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
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	2	31.8	3.7	3.2	38.7	3.6	42.3
2016	4	53.9	6.3	--	60.2	10.6	70.8
2017	4	51.0	6.1	--	57.1	10.4	67.5
2018	4	51.3	6.0	--	57.3	10.4	67.7
2019	4	51.6	6.1	--	57.7	10.6	68.3
2020	4	43.2	6.2	--	49.4	10.7	60.1
2021	4	44.0	6.3	--	50.3	10.9	61.2
2022	4	44.8	6.4	--	51.2	11.1	62.3
2023	4	45.8	6.5	--	52.3	11.3	63.6
2024	4	46.7	6.7	--	53.4	11.5	64.9
2025	4	47.7	6.9	--	54.6	11.7	66.3
2026	2	24.7	3.5	--	28.2	8.4	36.6
Subtotal	**52**	**625.7**	**70.7**	**3.2**	**699.6**	**141.3**	**840.9**

Annual Funding BY$
1810 | Procurement | Other Procurement, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2006 $M	Non End Item Recurring Flyaway BY 2006 $M	Non Recurring Flyaway BY 2006 $M	Total Flyaway BY 2006 $M	Total Support BY 2006 $M	Total Program BY 2006 $M
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	2	26.4	3.0	2.7	32.1	3.0	35.1
2016	4	43.8	5.1	--	48.9	8.7	57.6
2017	4	40.7	4.9	--	45.6	8.2	53.8
2018	4	40.1	4.7	--	44.8	8.1	52.9
2019	4	39.6	4.7	--	44.3	8.1	52.4
2020	4	32.5	4.7	--	37.2	8.0	45.2
2021	4	32.4	4.6	--	37.0	8.1	45.1
2022	4	32.4	4.6	--	37.0	8.0	45.0
2023	4	32.4	4.6	--	37.0	8.0	45.0
2024	4	32.4	4.7	--	37.1	8.0	45.1
2025	4	32.5	4.7	--	37.2	7.9	45.1
2026	2	16.5	2.3	--	18.8	5.6	24.4
Subtotal	**52**	**488.7**	**52.6**	**2.7**	**544.0**	**108.9**	**652.9**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	7/1/2005	6/1/2010
Approved Quantity	3	18
Reference	Acquisition Decision Memorandum (ADM)	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.

Eighteen RMMV LRIP units have been authorized to date and eight RMMV LRIP units have been delivered. Two RMMV Engineering Development Models have been upgraded to the RMMV LRIP configuration.

Foreign Military Sales

None

Nuclear Costs

None

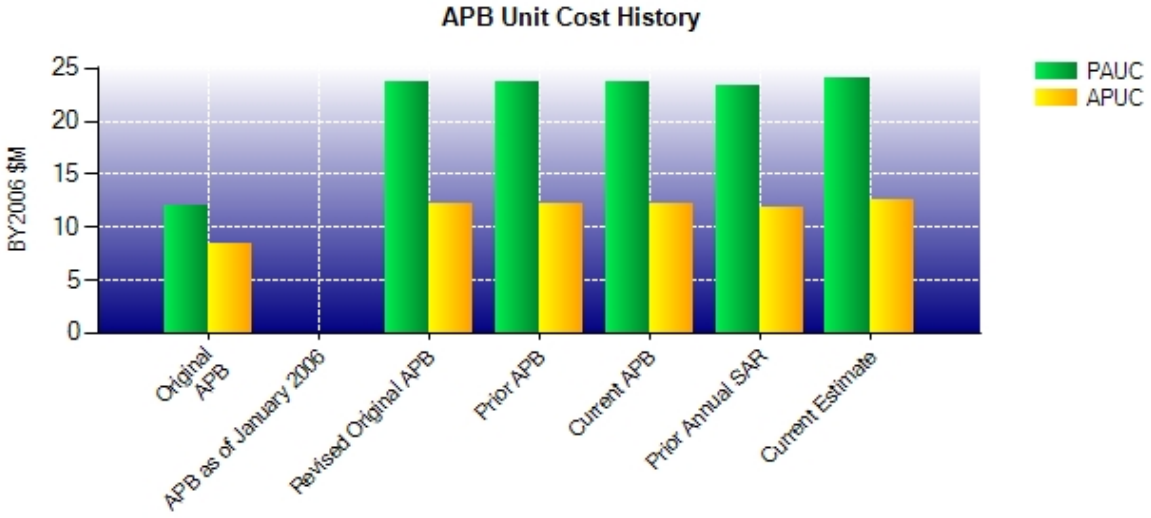
Unit Cost

Unit Cost Report

	BY2006 $M	BY2006 $M	
Unit Cost	**Current UCR Baseline (OCT 2012 APB)**	**Current Estimate (DEC 2013 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	1279.6	1298.3	
Quantity	54	54	
Unit Cost	23.696	24.043	+1.46
Average Procurement Unit Cost (APUC)			
Cost	630.0	652.9	
Quantity	52	52	
Unit Cost	12.115	12.556	+3.64

	BY2006 $M	BY2006 $M	
Unit Cost	**Revised Original UCR Baseline (OCT 2010 APB)**	**Current Estimate (DEC 2013 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	1279.6	1298.3	
Quantity	54	54	
Unit Cost	23.696	24.043	+1.46
Average Procurement Unit Cost (APUC)			
Cost	630.0	652.9	
Quantity	52	52	
Unit Cost	12.115	12.556	+3.64

Unit Cost History



		BY2006 $M		TY $M	
	Date	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 2012	23.307	11.798	26.841	15.288
Current Estimate	DEC 2013	24.043	12.556	27.691	16.171

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial PAUC Prod Est	Changes								PAUC Dev Est
	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 Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
26.841	0.452	0.000	0.000	0.000	0.548	-0.065	-0.085	0.850	27.691

Initial SAR Baseline to Current SAR Baseline (TY $M)

Initial APUC Prod Est	Changes								APUC Dev Est
	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 Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
15.288	0.365	0.000	0.000	0.000	0.673	-0.067	-0.088	0.883	16.171

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	N/A	DEC 1999	N/A
Milestone C	N/A	MAY 2014	N/A	MAY 2014
IOC	N/A	JAN 2015	SEP 2007	JUL 2015
Total Cost (TY $M)	N/A	1449.4	1399.4	1495.3
Total Quantity	N/A	54	108	54
Prog. Acq. Unit Cost (PAUC)	N/A	26.841	12.957	27.691

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	654.4	795.0	--	1449.4
Previous Changes				
Economic	+6.5	+22.5	--	+29.0
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-6.5	-14.3	--	-20.8
Other	--	-3.5	--	-3.5
Support	--	-4.7	--	-4.7
Subtotal	--	--	--	--
Current Changes				
Economic	-1.1	-3.5	--	-4.6
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+1.1	+49.3	--	+50.4
Other	--	--	--	--
Support	--	+0.1	--	+0.1
Subtotal	--	+45.9	--	+45.9
Total Changes	--	+45.9	--	+45.9
CE - Cost Variance	654.4	840.9	--	1495.3
CE - Cost & Funding	654.4	840.9	--	1495.3

Summary Base Year 2006 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	649.6	630.0	--	1279.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-4.5	-13.9	--	-18.4
Other	--	--	--	--
Support	--	-2.6	--	-2.6
Subtotal	-4.5	-16.5	--	-21.0
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+0.3	+39.1	--	+39.4
Other	--	--	--	--
Support	--	+0.3	--	+0.3
Subtotal	+0.3	+39.4	--	+39.7
Total Changes	-4.2	+22.9	--	+18.7
CE - Cost Variance	645.4	652.9	--	1298.3
CE - Cost & Funding	645.4	652.9	--	1298.3

Previous Estimate: December 2012

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-1.1
Adjustment for current and prior escalation. (Estimating)	+0.7	+0.7
FY 2013 sequestration which resulted in delaying Developmental Testing (DT-IIG) to FY 2014. (Estimating)	-1.7	-2.0
Contract Support Services funding. (Estimating)	-6.9	-8.4
Pre-Planned Product Improvement (P3I) in FY 2020. (Estimating)	+8.2	+10.8
RDT&E Subtotal	+0.3	0.0

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-3.5
Realignment of procurement funding for Remote Multi-Mission Vehicle (RMMV) Cradle from Littoral Combat Ship (LCS) Mission Modules (MM) Program Office. (Estimating)	+17.2	+21.7
Realignment of procurement funding for Production Engineering from LCS MM Program Office. (Estimating)	+15.4	+19.3
Realignment of procurement funding for Competitive RMMV Production Contract Start-up Cost from LCS MM Program Office. (Estimating)	+2.7	+3.2
Revised estimate to reflect FY 2015 PB. (Estimating)	+3.0	+3.9
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+0.8	+1.2
Revised Other Support estimate to reflect application of new outyear escalation indices. (Support)	0.0	+0.1
Revised Initial Spares estimate to reflect application of new outyear escalation indices. (Support)	+0.3	0.0
Procurement Subtotal	+39.4	+45.9

Contracts

Appropriation: RDT&E	
Contract Name	**Reliability Growth Program (RGP) Completion Contract**
Contractor	Lockheed Martin Corporation
Contractor Location	100 East 17th Street Riviera Beach, FL 33404
Contract Number, Type	N00024-12-C-6316, CPIF/CPFF
Award Date	December 16, 2011
Definitization Date	November 29, 2012

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price at Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
55.0	N/A	0	72.5	N/A	0	55.2	55.5

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to addition of funds for Logistics and Test & Evaluation Support.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/13/2013)	-8.8	-0.3
Previous Cumulative Variances	-2.9	-2.5
Net Change	-5.9	+2.2

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to increased resources necessary to address V4.2 design changes and software testing, added mitigation steps to resolve emergent issues, a significantly higher amount of corrective maintenance than originally expected, and extended delays in testing.

The favorable net change in the schedule variance is due to the accomplishment of planned work, albeit behind schedule. At the completion of the contract Budged Cost for Work Scheduled and Budged Cost for Work Performed will be equal and therefore the schedule variance is approaching zero.

Contract Comments

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

Estimate at Completiononly addresses the cost portion of the contract.

Deliveries and Expenditures

Delivered to Date	Plan 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	1495.3	Years Appropriated	19
Expended to Date	674.2	Percent Years Appropriated	61.29%
Percent Expended	45.09%	Appropriated to Date	682.9
Total Funding Years	31	Percent Appropriated	45.67%

The above data is current as of 3/19/2014.

Operating and Support Cost

RMS

Assumptions and Ground Rules

Cost Estimate Reference:
RMS Service Cost Position (SCP) dated November 3, 2010. An updated SCP is under development for Milestone C and will address updated O&S Costs of RMS on the Littoral Combat Ship (LCS).

Sustainment Strategy:
RMS currently plans to execute an “organic” three level maintenance strategy. Afloat, Ashore and Depot maintenance approaches are defined as follows: Afloat – critical corrective only with flyaway support; Ashore – deferred Organic, Intermediate and limited Depot; Depot – to be determined based on Depot Source of Repair analysis. The Production & Deployment effort assumes APB quantity of 54 Remote Multi-Mission Vehicles (RMMVs) (two Engineering Development Models, 18 LRIP and 34 Production Units). The system life is 20 years.

Antecedent Information:
There is no antecedent system to the RMS. The LCS, along with the systems onboard, replaces the Avenger Class Mine Countermeasures (MCM) Ship. The RMS alone does not replace the MCM Ship.

Unitized O&S Costs BY2006 $K		
Cost Element	**RMS Remote Multi-Mission Vehicle**	**No Antecedent System (Antecedent) No Antecedent System**
Unit-Level Manpower	0.000	--
Unit Operations	12.250	--
Maintenance	444.600	--
Sustaining Support	63.550	--
Continuing System Improvements	80.550	--
Indirect Support	0.000	--
Other	0.000	--
Total	600.950	--

Unitized Cost Comments:
All BY costs are shown in Constant Year FY 2006 dollars. All technical, financial, schedule and programmatic inputs are reviewed, at a minimum by members of either the RMS Program Office or stakeholders from the Naval Surface Warfare Center, Panama City Division. The actual funded amount was used from FY 1996 to FY 2009. The overhaul period is every three years.

Total O&S Cost = RMMV O&S unit cost x 54 (total number of units) x 20 (system life)

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

Total O&S Costs Comments:
O&S costs are estimated through FY 2048.

Disposal Costs:

Per the RMS SCP, dated November 3, 2010, the estimate for disposal is $4.8M (FY 2010).