



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-293



MP-RTIP

As of December 31, 2010

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

Table of Contents

Program Information	3
Responsible Office	3
References	3
Mission and Description	4
Executive Summary	5
Threshold Breaches	6
Schedule	7
Performance	8
Track To Budget	9
Cost and Funding	10
Low Rate Initial Production	13
Nuclear Cost	13
Foreign Military Sales	13
Unit Cost	14
Cost Variance	17
Contracts	20
Deliveries and Expenditures	21
Operating and Support Cost	22

Program Information

Designation And Nomenclature (Popular Name)

Multi-Platform Radar Technology Insertion Program (MP-RTIP)

DoD Component

Air Force

Responsible Office

Responsible Office

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 4, 2003

Approved APB

DAE Approved Acquisition Program Baseline (APB) dated March 1, 2005

Mission and Description

The Multi-Platform Radar Technology Insertion Program (MP-RTIP) is the result of a restructuring of the Joint Surveillance Target Attack Radar System (Joint STARS) Radar Technology Insertion Program (RTIP), formerly a Pre-Planned Product Improvement to Joint STARS. MP-RTIP will design modular, scalable 2-dimensional active electronically scanned array radars suitable for integration on various airborne platforms. The MP-RTIP Selected Acquisition Report includes only Research, Development, Test and Evaluation funding since radars will be procured and budgeted by the host platforms. The design effort includes a Wide Area Surveillance (WAS) radar and a smaller radar for integration on the Global Hawk Unmanned Aerial Vehicle (UAV). At this time, the North Atlantic Treaty Organization (NATO) has chosen the Global Hawk RQ-4B (Block 40) as the UAV platform for the NATO Alliance Ground Surveillance program.

When installed on the Global Hawk UAV, MP-RTIP will provide improved Ground Moving Target Indicator (GMTI) and Synthetic Aperture Radar (SAR) imaging over current capability. The weight and power restrictions of the platform drive the smaller Global Hawk Radar design and determine its performance. The Global Hawk's air surveillance modes are suitable for detecting aircraft, but insufficient to readily detect cruise missiles. The Global Hawk MP-RTIP variant will provide persistent GMTI and SAR imaging on a long endurance platform.

MP-RTIP, Joint STARS, Global Hawk, Multi-Platform Common Data Link, Air Force Distributed Common Ground System, Army's Common Ground Station, Distributed Common Ground System-Army, Air Operations Center, Joint Tactical Radio Systems, Control and Reporting Center/Battle Control System-Mobile, and the Family of Advanced Beyond-Line-of-Sight Terminals are coordinated to ensure the MP-RTIP family of systems provides required capabilities enabled by MP-RTIP to the warfighter.

Executive Summary

The FY 2008 President's Budget (PB) eliminated funding for the E-10A version of the Multi-Platform Radar Technology Insertion Program (MP-RTIP) Wide Area Surveillance (WAS) radar in FY 2008 and beyond. Global Hawk (GH) MP-RTIP execution continued and the FY 2009-2010 PBs included funding to continue System Development & Demonstration (SDD) of the radar and to support Developmental and Operational Testing of the GH MP-RTIP variant on the GH Block 40 air vehicle platform. The GH program office (ASC/WIG) is responsible for all MP-RTIP Production, Platform integration, Developmental Test (DT) and fielding.

The MP-RTIP radar has been officially designated as the AN/ZPY-2. This nomenclature was endorsed on November 12, 2010 by the 401 Supply Chain Management Center and is effective immediately.

The final Concurrent Mode Contractor Development Test & Evaluation (CDT&E) and Dedicated Mode regression test flight was flown on Proteus November 18, 2010 culminating in over 270 test flights. The MP-RTIP program office will present regression and characterization flight test results to stakeholders (such as the GH program office and Headquarters Air Combat Command) in February 2011. At this time, the MP-RTIP program office is prepared to recommend that built-in Concurrent Mode capability will be included with Dedicated Modes for a single Initial Operational Test and Evaluation (IOT&E), subject to any IOT&E schedule changes (see next paragraph). Otherwise, all Concurrent Mode activity will move to FY 2014 and beyond.

Several GH program dates, including IOT&E, have independently slipped, causing MP-RTIP budget and schedule to extend to FY 2013. The contractor-proposed cost to support this extended ground and flight testing is \$75M. The MP-RTIP program office and the GH program office are aggressively pursuing options to accelerate IOT&E and significantly reduce the overall program cost and bring capability to the warfighter sooner. Given the current test schedule, the MP-RTIP program office is prepared to recommend that Concurrent Mode capability be included with Dedicated Modes for a single IOT&E.

Production Unit (PU)-1 was removed from Proteus on November 19, 2010 and returned to the GH program for Block 40 integration and testing efforts. The MP-RTIP hardware baseline is stable and ready for platform integration and subsequent GH Block 40 system test and evaluation starting December 2010. Certain advanced modes, such as Air Moving Target Indicator (AMTI) and High Range Resolution (HRR) continue to be deferred as referenced in the December 2009 Selected Acquisition Report.

In June 2010, the MP-RTIP Program Executive Officer (PEO), commissioned an Independent Review Team (IRT) to assess MP-RTIP sensor testing to date, the readiness of the sensor for GH integration testing, the state of program management cost accounting and external communications. Under the IRT, the Defense Contract Management Agency (DCMA) Earned Value Management (EVM) Center of Excellence identified several areas of concern with Northrop Grumman's (NG) EVM data for the MP-RTIP program. DCMA-EI Segundo issued a Level-3 Corrective Action Request (CAR) to NG on November 24, 2010. DCMA provided recommended changes to NG Corrective Action Plan (CAP) submitted on January 17, 2011. Final approval is expected April 2011.

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

Threshold Breaches

APB Breaches		
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Schedule		<input checked="" type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

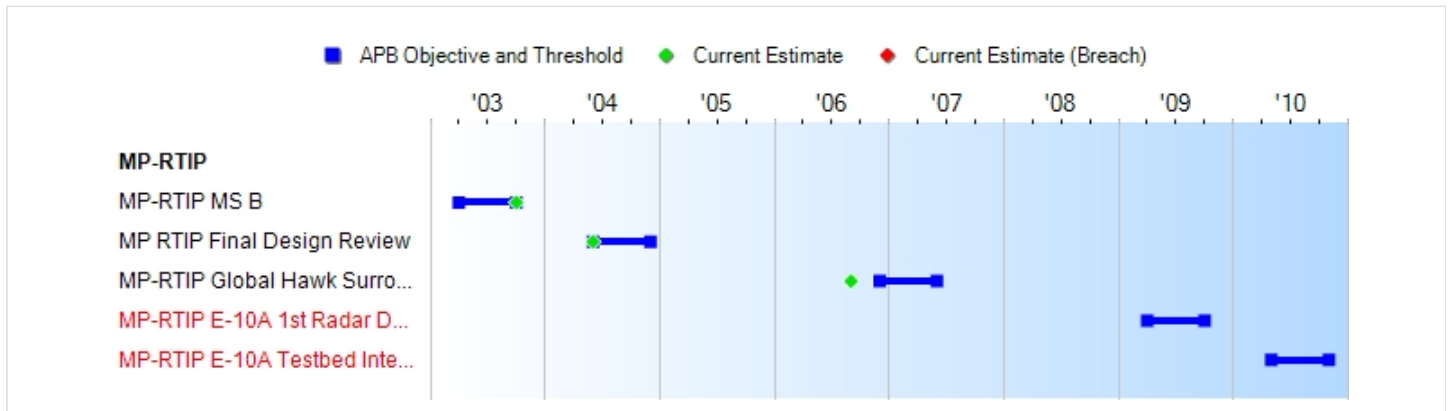
Explanation of Breach

The FY 2008 President's Budget eliminated funding for the MP-RTIP Wide Area Surveillance radar development in FY 2008 and beyond. As a result of this budget decision, the following Acquisition Program Baseline (APB) Milestones will not be completed: MP-RTIP E-10A 1st Radar Development Unit Build/System Integration Lab (SIL) test and MP-RTIP E-10A Testbed Integration and First Flight.

Nunn-McCurdy Breaches		
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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
MP-RTIP MS B	APR 2003	APR 2003	OCT 2003	OCT 2003
MP RTIP Final Design Review	JUN 2004	JUN 2004	DEC 2004	JUN 2004
MP-RTIP Global Hawk Surrogate Testbed Integration and First Flight	DEC 2006	DEC 2006	JUN 2007	SEP 2006
MP-RTIP E-10A 1st Radar DU Build/SIL Test	MAY 2008	APR 2009	OCT 2009	N/A ¹
MP-RTIP E-10A Testbed Integration and First Flight	OCT 2009	MAY 2010	NOV 2010	N/A ¹

¹APB Breach

Acronyms And Abbreviations

DU - Development Unit
 MP-RTIP - Multi-Platform Radar Technology Insertion Program
 MS - Milestone
 SIL - System Integration Lab

Change Explanations

None

Memo

There are no MP-RTIP sensor Acquisition Program Baseline (APB) milestones associated with the Global Hawk Block 40.

* Under Secretary of Defense for Acquisition, Technology, & Logistics (USD/AT&L) Acquisition Decision Memorandum (ADM) of May 30, 2007 terminated the E-10A Technology Development Program (TDP). However, it directed the Air Force to continue a limited risk reduction effort in Wide Area Surveillance (WAS) radar development through May 2008. Because of the termination direction, the final two E-10A APB Milestones are no longer valid.

Performance

Memo

The MP-RTIP program is a System Development & Demonstration (SDD) program. System Key Performance Parameters (KPPs) are documented with the Global Hawk Block 40 host weapon system.

Track To Budget**RDT&E**

APPN 3600	BA 07	PE 0207449F	(Air Force)	
	Project 675065	C2 Constellation (Sensors)		(Sunk)
APPN 3600	BA 05	PE 0207450F	(Air Force)	
	Project 655132	E-10 Squadrons (Sensors)		(Sunk)
APPN 3600	BA 07	PE 0207581F	(Air Force)	
	Project 670003	JSTARS (JSTARS)	(Shared)	(Sunk)
	Project 674995	JSTARS (MP-RTIP)		(Sunk)
APPN 3600	BA 07	PE 0305220F	(Air Force)	
	Project 675144	RQ-4 UAV (Global Hawk)	(Shared)	(Sunk)
	Project 67RTIP	RQ-4 UAV (MP-RTIP)		

E-10 Airframe utilized one Program Element (PE) 0207450F with two Budget Program Activity Code (BPACs). 655131 (Airframe) and 655132 (E-10 Squadrons Sensor). Upon termination of E-10A, PE 0305220F/BPAC 675144 (RQ-4 UAV Global Hawk) funds were used in FY 2009 for remaining existing MP-RTIP requirements. Subsequently, a new BPAC, 67RTIP, was created within Program Element (PE) 0305220F for FY 2010 and beyond.

This Budget Program Activity Code (BPAC) 655131 which included in the December 2009 SAR. E-10A Airframe is not Acquisition Category (ACAT) 1 and therefore, is not required to be reported in the Selected Acquisition Report (SAR). All above Budget Line Items have been reviewed, added, and corrected to the proper nomenclature.

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2000 \$M			BY2000 \$M	TY \$M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	1449.3	1449.3	1594.2	1151.3	1568.4	1568.4	1291.0
Procurement	0.0	0.0	--	0.0	0.0	0.0	0.0
Flyaway	0.0	--	--	0.0	0.0	--	0.0
Recurring	0.0	--	--	0.0	0.0	--	0.0
Non Recurring	0.0	--	--	0.0	0.0	--	0.0
Support	0.0	--	--	0.0	0.0	--	0.0
Other Support	0.0	--	--	0.0	0.0	--	0.0
Initial Spares	0.0	--	--	0.0	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	1449.3	1449.3	N/A	1151.3	1568.4	1568.4	1291.0

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E		0	0
Procurement		0	0
Total		0	0

Cost and Funding**Funding Summary**

Appropriation and Quantity Summary
FY2012 President's Budget / December 2010 SAR (TY\$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	1170.3	27.2	40.3	17.7	11.6	11.9	12.0	0.0	1291.0
Procurement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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 2012 Total	1170.3	27.2	40.3	17.7	11.6	11.9	12.0	0.0	1291.0
PB 2011 Total	1171.5	27.2	11.4	11.8	12.1	12.5	0.0	0.0	1246.5
Delta	-1.2	0.0	28.9	5.9	-0.5	-0.6	12.0	0.0	44.5

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	0	0	0	0	0	0	0	0	0
PB 2012 Total	0	0	0	0	0	0	0	0	0	0
PB 2011 Total	0	0	0	0	0	0	0	0	0	0
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY\$

3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

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
2000	--	--	--	--	--	--	6.9
2001	--	--	--	--	--	--	41.8
2002	--	--	--	--	--	--	73.3
2003	--	--	--	--	--	--	200.6
2004	--	--	--	--	--	--	145.6
2005	--	--	--	--	--	--	192.6
2006	--	--	--	--	--	--	131.7
2007	--	--	--	--	--	--	198.1
2008	--	--	--	--	--	--	67.3
2009	--	--	--	--	--	--	40.2
2010	--	--	--	--	--	--	72.2
2011	--	--	--	--	--	--	27.2
2012	--	--	--	--	--	--	40.3
2013	--	--	--	--	--	--	17.7
2014	--	--	--	--	--	--	11.6
2015	--	--	--	--	--	--	11.9
2016	--	--	--	--	--	--	12.0
Subtotal	--	--	--	--	--	--	1291.0

Annual Funding BY\$**3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force**

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2000 \$M	Non End Item Recurring Flyaway BY 2000 \$M	Non Recurring Flyaway BY 2000 \$M	Total Flyaway BY 2000 \$M	Total Support BY 2000 \$M	Total Program BY 2000 \$M
2000	--	--	--	--	--	--	6.8
2001	--	--	--	--	--	--	40.9
2002	--	--	--	--	--	--	70.9
2003	--	--	--	--	--	--	191.4
2004	--	--	--	--	--	--	135.5
2005	--	--	--	--	--	--	174.8
2006	--	--	--	--	--	--	116.1
2007	--	--	--	--	--	--	170.1
2008	--	--	--	--	--	--	56.7
2009	--	--	--	--	--	--	33.4
2010	--	--	--	--	--	--	59.4
2011	--	--	--	--	--	--	22.1
2012	--	--	--	--	--	--	32.2
2013	--	--	--	--	--	--	13.9
2014	--	--	--	--	--	--	9.0
2015	--	--	--	--	--	--	9.1
2016	--	--	--	--	--	--	9.0
Subtotal	--	--	--	--	--	--	1151.3

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

None

Nuclear Cost

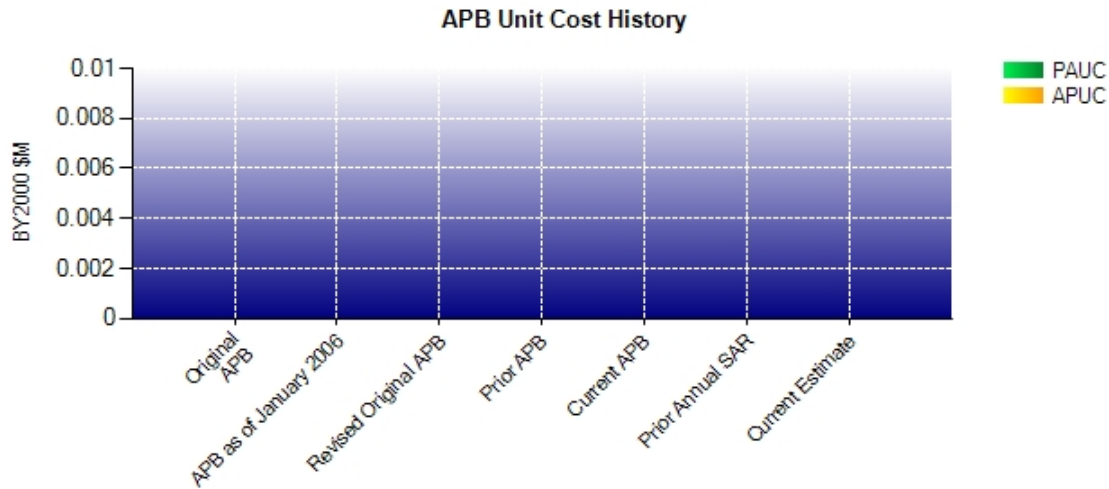
None

Unit Cost**Unit Cost Report**

	BY2000 \$M	BY2000 \$M	
Unit Cost	Current UCR Baseline (MAR 2005 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1449.3	1151.3	
Quantity	0	0	
Unit Cost	--	--	--
Average Procurement Unit Cost (APUC)			
Cost	--	0.0	
Quantity	--	0	
Unit Cost	--	--	--

	BY2000 \$M	BY2000 \$M	
Unit Cost	Original UCR Baseline (DEC 2003 APB)	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1449.3	1151.3	
Quantity	0	0	
Unit Cost	--	--	--
Average Procurement Unit Cost (APUC)			
Cost	--	0.0	
Quantity	--	0	
Unit Cost	--	--	--

Unit Cost History



	Date	BY2000 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	DEC 2003	N/A	N/A	N/A	N/A
APB as of January 2006	MAR 2005	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	DEC 2003	N/A	N/A	N/A	N/A
Current APB	MAR 2005	N/A	N/A	N/A	N/A
Prior Annual SAR	DEC 2009	N/A	N/A	N/A	N/A
Current Estimate	DEC 2010	N/A	N/A	N/A	N/A

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Current SAR Baseline to Current Estimate (TY \$M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	APR 2003	N/A	OCT 2003
Milestone C	N/A	N/A	N/A	N/A
IOC	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	N/A	1568.4	N/A	1291.0
Total Quantity	N/A	0	N/A	0
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	N/A	N/A

Cost Variance**Cost Variance Summary**

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	1568.4	--	--	1568.4
Previous Changes				
Economic	+43.2	--	--	+43.2
Quantity	--	--	--	--
Schedule	+177.6	--	--	+177.6
Engineering	-351.0	--	--	-351.0
Estimating	-191.7	--	--	-191.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-321.9	--	--	-321.9
Current Changes				
Economic	-0.1	--	--	-0.1
Quantity	--	--	--	--
Schedule	+44.5	--	--	+44.5
Engineering	--	--	--	--
Estimating	+0.1	--	--	+0.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+44.5	--	--	+44.5
Total Changes	-277.4	--	--	-277.4
CE - Cost Variance	1291.0	--	--	1291.0
CE - Cost & Funding	1291.0	--	--	1291.0

Summary Base Year 2000 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	1449.3	--	--	1449.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+130.7	--	--	+130.7
Engineering	-289.7	--	--	-289.7
Estimating	-174.1	--	--	-174.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-333.1	--	--	-333.1
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	+35.0	--	--	+35.0
Engineering	--	--	--	--
Estimating	+0.1	--	--	+0.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+35.1	--	--	+35.1
Total Changes	-298.0	--	--	-298.0
CE - Cost Variance	1151.3	--	--	1151.3
CE - Cost & Funding	1151.3	--	--	1151.3

Previous Estimate: December 2009

RDT&E	\$M	
	Base Year	Then Year
Current Change Explanations		
Revised escalation indices. (Economic)	N/A	-0.1
MP-RTIP cost increase due to Global Hawk Block 40 Initial Operational Test & Evaluation (IOT&E) delayed from FY 2010 to FY 2013. (Schedule)	+35.0	+44.5
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1
RDT&E Subtotal	+35.1	+44.5

Contracts

Appropriation: RDT&E

Contract Name	MP-RTIP - SDD Phase II
Contractor	Northrop Grumman
Contractor Location	El Segundo, CA 90245
Contract Number, Type	F19628-00-C-0100/2, CPAF
Award Date	April 30, 2004
Definitization Date	April 30, 2004

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
887.9	N/A	0	931.8	N/A	0	994.6	992.6

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date	+1.8	-2.0
Previous Cumulative Variances	+1.4	-7.7
Net Change	+0.4	+5.7

Cost And Schedule Variance Explanations

Variances currently being reported are against an Over Target Baseline (OTB) of \$62.8M. The OTB is due to Contractor Developmental Test and Evaluation (CDT&E) delays. The net favorable schedule variance is due to completion of Proteus CDT&E flight testing. The net favorable cost variance is due to contractor efficiencies.

Contract Comments

The overall net increase in current contract price from initial was due to a combination of definitizing Engineering Change Proposal (ECP)-16, Maritime Modes; Contract Change Proposal (CCP)-003, Sensor Control Element; ECP-21 definitization, Joint Surveillance Target Attack Radar System (JSTARS) Radar System Modernization (JSRM) Wide Area Surveillance (WAS) Phase 2; ECP-22A, Radar Capabilities Study; ECP-22B Authorized Un-priced Work, schedule alignment to Global Hawk Initial Operational Test and Evaluation (IOT&E) slip; ECP-22C, Request for Equitable Adjustment; and CCP-006, Additional Data Collection on Proteus (JSTARS T-3 Co-collect), Administrative Contract Officer (ACO) modification A00003, L3 Communication Repair and Award Fee.

The Program Manager's Estimated Price at Completion (EPAC) is \$992.6M based on cumulative Cost Performance Index (CPI) methodology calculation. This is 0.2% less than the Contractor's EPAC of \$994.6M in the December 2010 Cost Performance Report (CPR).

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	0	0	0	--
Total Program Quantities Delivered	0	0	0	--

Expenditures and Appropriations (TY \$M)			
Total Acquisition Cost	1291.0	Years Appropriated	12
Expenditures To Date	1150.7	Percent Years Appropriated	70.59%
Percent Expended	89.13%	Appropriated to Date	1197.5
Total Funding Years	17	Percent Appropriated	92.76%

Expenditure: Defense Finance and Accounting Service (DFAS) data as of March 15, 2011

Operating and Support Cost

Assumptions And Ground Rules

The Multi-Platform Radar Technology Insertion Program (MP-RTIP) effort includes the Research, Development, Test and Evaluation of radars for the Global Hawk (Block 40). This is in accordance with the MP-RTIP Single Acquisition Management Plan, Milestone B, and revised Acquisition Program Baseline. The cost for MP-RTIP Production and Operations and Support is allocated in the respective host weapon system.

Costs BY2000 \$M		
Cost Element	MP-RTIP	Antecedent System
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	--	--
Continuing System Improvements	--	--
Indirect Support	--	--
Other	--	--
Total Unitized Cost (Base Year 2000 \$)	--	--

Total O&S Costs \$M	MP-RTIP	Antecedent System
Base Year	--	--
Then Year	--	--