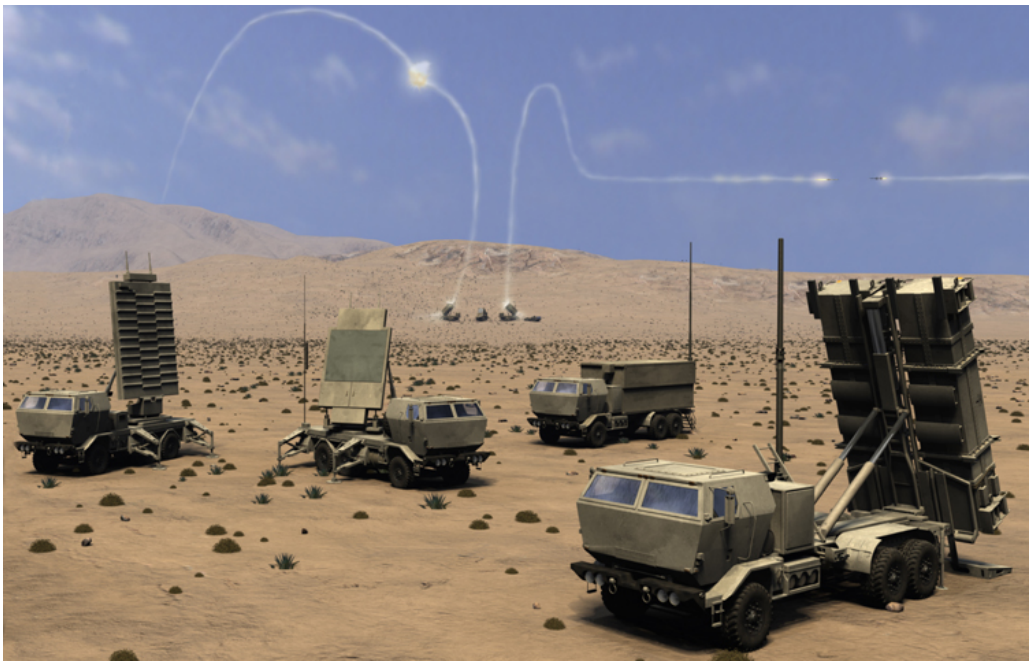
Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-531



Patriot/Medium Extended Air Defense System Combined Aggregate Program (Patriot/MEADS CAP)

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

Patriot/Medium Extended Air Defense System Combined Aggregate Program (Patriot/MEADS CAP)

DoD Component

Army

Responsible Office

Responsible Office

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Date Assigned July 24, 2013

References

Fire Unit

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 6, 2004

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 6, 2004

Missile

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 6, 2004

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated August 6, 2004

Mission and Description

The Patriot/Medium Extended Air Defense System Combined Aggregate Program (Patriot/MEADS CAP) represents the process through which the Patriot system transitions to MEADS. The MEADS program is a Tri-National co-development program among the United States, Germany, and Italy to replace the U.S. Patriot air defense systems, Patriot and Hawk systems in Germany, and the Nike system in Italy. The MEADS mission will provide Joint and Coalition forces with critical asset and defended area protection against multiple and simultaneous attacks by low-to-medium altitude Air and Missile Defense (AMD) with the capability to counter, defeat, or destroy Tactical Ballistic Missiles, Air-Breathing Threats to include cruise missiles, unmanned aerial vehicles, tactical air-to-surface missiles, and anti-radiation missiles. The Patriot system provides a combat demonstrated capability against these threats. MEADS will employ a netted distributed architecture with modular components to increase survivability and flexibility of employment in a number of operational configurations. The Patriot Advanced Capability-3 (PAC-3) Missile Segment Enhancement (MSE) missile, as evolved from the current PAC-3 missile's Cost Reduction Initiative (CRI) design, provides a more agile, lethal interceptor missile resulting in substantial missile performance improvement while enhancing Insensitive Munitions (IM) compliance.

MEADS will provide significant improvements in strategic deployability, transportability, mobility, and maneuverability. Its substantially reduced lift requirements enable MEADS to be deployed rapidly with essential combat loads via inter/intra-theater land, sea, and airlift anywhere in the world. MEADS will provide air and missile defense of vital unit of employment and unit of action assets associated with Army maneuver forces. MEADS will provide combatant commanders with an AMD system that is fully transportable by C-130 and C-17 aircraft for deployment during early entry operations. Furthermore, MEADS represents decreased size/weight over the current Patriot system and, with the ability to conduct rapid march order and system emplacement, will enhance maneuverability thereby providing better AMD protection to maneuvering forces. The Army's initial program plan was to ultimately field 16 MEADS Battalions by FY 2030 leading to complete replacement of the U.S. Patriot forces.

The objective MEADS battery, which will be scalable and tailorable to operational requirements, will consist of: the Integrated AMD Battle Command System Tactical Operations Center, enabling distributed system operations and beyond-line-of-sight engagements for maximum protection of supported forces by engaging at longer ranges; a near-vertical launcher capable of transporting and launching up to eight missiles; a Launcher Reloader; the PAC-3 MSE missile; ultra high frequency Surveillance Radar capability that provides 360-degree coverage and near-range detection of targets having low radar cross-section signatures; and two X-band Multi-Function Fire Control Radars that provide 360-degree coverage and are designed for high-precision handover to the in-flight missile, discrimination capabilities, and short-range target detection and horizon search.

The PAC-3 MSE missile was accepted as the baseline missile for MEADS and is being developed by the U.S. to meet that operational requirement. The PAC-3 MSE improves upon the current PAC-3 CRI missile capability with a higher performance solid rocket motor, modified lethality enhancer, more responsive control surfaces, upgraded guidance software, and IM improvements.

Executive Summary

A. Fire Unit Subprogram:

In February 2011, the DoD decided to continue the MEADS Design and Development (D&D) phase by providing funding up to the agreed Memorandum of Understanding (MoU) cost ceiling of $4B in equivalent U.S. dollars (2004). The U.S. proposed focusing the remaining activities on implementing a "Demonstration of Capabilities" (DoC) effort through 2013 with the remaining MoU funds to provide a meaningful capability for Germany and Italy and a possible future option for the U.S.

The U.S. will continue security oversight for Government Furnished Equipment items until the end of MEADS D&D, such as the U.S.-developed and technology-restricted Exciter and Exportable Missile Model, sensitive U.S. communications and cryptographic equipment, and the Patriot Advanced Capability-3 (PAC-3) Missile Segment Enhancement (MSE) missile. The U.S. developed MEADS technologies will transition to valid FMS cases once those become effective.

With the ramp-down and closeout of direct U.S. support as part of MEADS D&D, Germany has submitted three preliminary FMS requests for support of its future European Follow-on Program, to include the Exciter support case, a PAC-3 MSE flight test support case, and a request for support for MEADS simulation tools, Exportable Missile Model, and cryptographic equipment. These requests are being reviewed by the U.S. Government. The U.S. has also received informally a draft letter of FMS request from Italy which is review awaiting formal submission.

The FY 2014 PB included funds for the final year of the MEADS DoC. Completion of the DoC will bring the MEADS development program to a close under Contract Amendment #28 and will also start activities that support the European Follow-on-Program. Under the DoC, the program will continue verification and testing of the MEADS 360-degree Multi-Function Fire Control Radar and will leverage the ability of the PAC-3 MSE missile to intercept targets from the lightweight, near-vertical MEADS launcher. Data archival efforts will also be completed for all major MEADS elements, to include design documentation, drawings, and specifications with delivery of final archived data scheduled for the 2nd Quarter FY 2015. Planning for the transition of MEADS to an FMS-supported approach will continue in parallel with the DoC execution.

The MEADS system participated in a successful Joint Planning Optic Windmill (JPOW) exercise from May 21 to June 5, 2013. The MEADS system successfully conducted three interoperability experiments, achieving a majority of test objectives and demonstrating capabilities to the North Atlantic Treaty Organization AMD community. The JPOW exercise was the first MEADS event where trained German soldiers operated the system. MEADS was determined to be reliable and the MEADS Link 16 status was rated 'Green'.

The MEADS system successfully executed a dual target intercept mission on November 6, 2013, at White Sands Missile Range (WSMR), New Mexico. The MEADS system concurrently engaged and intercepted the QF-4 and Lance Tactical Ballistic Missile (TBM) targets using three PAC-3 MSE interceptors. All elements of the MEADS system worked as planned and the program achieved all primary objectives.

This is the final SAR submission for the Fire Unit subprogram, because this subprogram is 90% or more expended.

B. Missile Subprogram:

On June 6, 2013, the U.S. Army Lower Tier Project Office successfully conducted the PAC-3 MSE 7-5 Missile Flight Test at WSMR, intercepting a TBM target and an Air Breathing Target with PAC-3 MSE missiles. Patriot ground support equipment (with Post Deployment Build-7 software and Modern Man Stations), operated by soldiers from

the 2/43 Air Defense Battalion, ripple-fired two production representative PAC-3 MSE missiles to intercept a threat representative TBM target in the MSE extended battlespace. This was the second flight test with the Zombie target, designed to substantially reduce the cost of TBM threat representative targets. This test also demonstrated the capability of the Patriot system to detect, track, and kill a low altitude cruise missile surrogate target with a PAC-3 MSE missile. Test data indicates that the flight test mission objectives were successfully achieved. This was the final missile flight test required to support the PAC-3 MSE production decision. The FY 2015 PB includes a program increase of $150M in FY 2014 for procurement of additional MSE missiles to support combatant commanders.

With the termination of the Fire Unit Subprogram in this SAR, the Missile Subprogram will be established as a separate PAC-3 MSE program. On March 27, 2014, the Defense Acquisition Executive signed an Acquisition Decision Memorandum authorizing the PAC-3 MSE program to enter the Production and Deployment phase and to proceed with LRIP. The production APB for PAC-3 MSE will be completed later this year, at which time the program will begin reporting separately from the Patriot/MEADS CAP. The cost estimates for the Missile Subprogram in this report are based on the original program of record.

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

Threshold Breaches

Fire Unit

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

Missile

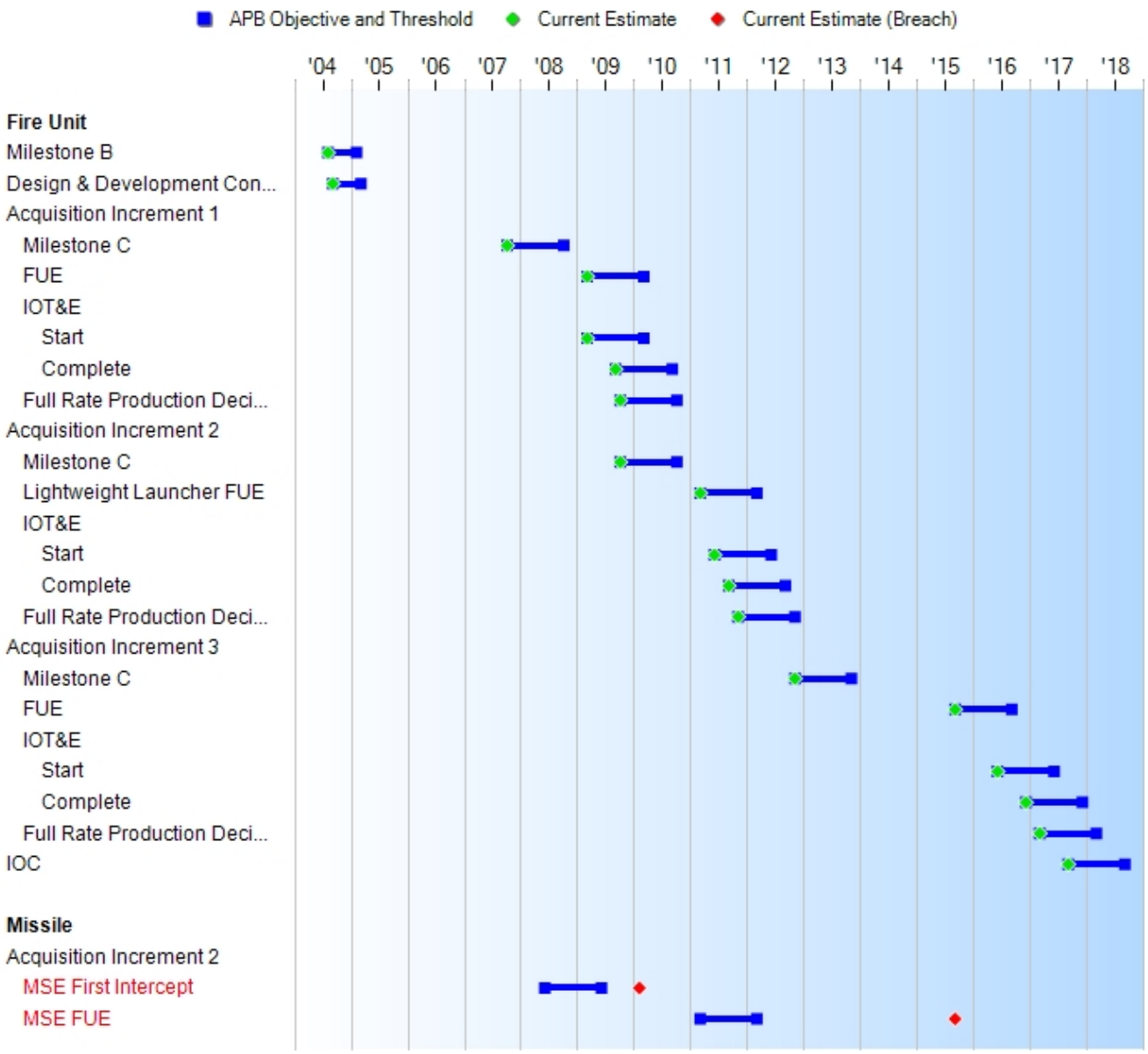
APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☑
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

Explanation of Breach

The cost and schedule breaches for the Missile Subprogram were previously reported in the December 2009 SAR.

Schedule


APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
'14
'15
'16
'17
'18
Fire Unit
Milestone B
Design & Development Con...
Acquisition Increment 1
Milestone C
FUE
IOT&E
Start
Complete
Full Rate Production Deci...
Acquisition Increment 2
Milestone C
Lightweight Launcher FUE
IOT&E
Start
Complete
Full Rate Production Deci...
Acquisition Increment 3
Milestone C
FUE
IOT&E
Start
Complete
Full Rate Production Deci...
IOC
Missile
Acquisition Increment 2
MSE First Intercept
MSE FUE

Fire Unit				
Milestones	**SAR Baseline Dev Est**	**Current APB Development Objective/Threshold**		**Current Estimate**
Milestone B	AUG 2004	AUG 2004	FEB 2005	AUG 2004
Design & Development Contract Award	SEP 2004	SEP 2004	MAR 2005	SEP 2004
Acquisition Increment 1				
Milestone C	OCT 2007	OCT 2007	OCT 2008	OCT 2007
FUE	MAR 2009	MAR 2009	MAR 2010	MAR 2009
IOT&E				
Start	MAR 2009	MAR 2009	MAR 2010	MAR 2009
Complete	SEP 2009	SEP 2009	SEP 2010	SEP 2009
Full Rate Production Decision	OCT 2009	OCT 2009	OCT 2010	OCT 2009
Acquisition Increment 2				
Milestone C	OCT 2009	OCT 2009	OCT 2010	OCT 2009
Lightweight Launcher FUE	MAR 2011	MAR 2011	MAR 2012	MAR 2011
IOT&E				
Start	JUN 2011	JUN 2011	JUN 2012	JUN 2011
Complete	SEP 2011	SEP 2011	SEP 2012	SEP 2011
Full Rate Production Decision	NOV 2011	NOV 2011	NOV 2012	NOV 2011
Acquisition Increment 3				
Milestone C	NOV 2012	NOV 2012	NOV 2013	NOV 2012
FUE	SEP 2015	SEP 2015	SEP 2016	SEP 2015
IOT&E				
Start	JUN 2016	JUN 2016	JUN 2017	JUN 2016
Complete	DEC 2016	DEC 2016	DEC 2017	DEC 2016
Full Rate Production Decision	MAR 2017	MAR 2017	MAR 2018	MAR 2017
IOC	SEP 2017	SEP 2017	SEP 2018	SEP 2017

Change Explanations

None

Memo

Based on the February 11, 2011, U.S. DoD decision to place a ceiling on MEADS spending at $4B and continue with a modified Design and Development phase in a "Demonstration of Capabilities" effort funded through 2013, the Fire Unit schedule milestones are maintained at the objective dates. FY 2013 was the final year of funding for the Fire Unit Subprogram.

The Defense Acquistion Board approved the Acquisition Strategy for the Patriot/MEADS CAP on August 6, 2004, as follows: Acqusition Increment 1 as the initial MEADS Battle Management Command, Control, Communications, Computers and Intelligence capability fielded to Patriot Battalions; Acquisition Increment 2 fields the MEADS Lightweight Launcher capabililty and the Missile Segment Enhancement capability to current Patriot Battalions; and Acquisition Increment 3 fields the MEADS Surveillance Radars and Multi-Function Fire Control Radars, which provide the MEADS objective capability.

Acronyms and Abbreviations

FUE - First Unit Equipped
IOT&E - Initial Operational Test and Evaluation

Missile				
Milestones	**SAR Baseline Dev Est**	**Current APB Development Objective/Threshold**		**Current Estimate**
Acquisition Increment 2				
MSE First Intercept	JUN 2008	JUN 2008	JUN 2009	**FEB 2010**[1]
MSE FUE	MAR 2011	MAR 2011	MAR 2012	**SEP 2015**[1]

[1] *APB Breach*

Change Explanations

None

Memo

The December 2009 SAR reported breaches to the schedule milestones for the MSE First Intercept and the MSE FUE. The MSE First Intercept and the MSE FUE current estimate breaches were due to the unsuccessful MSE Guided Test Flight - 1 that occured on March 25, 2009. A successful re-test of the first intercept mission was conducted on February 17, 2010, validating intercept objectives. Additional intercept missions were successfully conducted in March 2011, December 2012, and June 2013.

Acronyms and Abbreviations

FUE - First Unit Equipped
MSE - Missile Segment Enhancement

Performance

Fire Unit					
Characteristics	**SAR Baseline Dev Est**	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Identification - ABT Targets	Fire unit will automatically declare ABT targets as friend, foe, or unknown using all available sources of information	Fire unit will automatically declare ABT targets as friend, foe, or unknown using all available sources of information	Fire unit will automatically declare ABT targets as friend, foe, or unknown using all available sources of information	TBD	Fire unit will automatically declare ABT targets as friend, foe, or unknown using all available sources of information
Transportability/Mobility					
Drive-on, Drive-off	Drive-on Drive-off loading and unloading : C-5, C-17	Drive-on Drive-off loading and unloading: C-5, C-17	Drive-on Drive-off loading and unloading: C-5, C-17	TBD	Drive-on Drive-off loading and unloading: C-5, C-17
Roll-on, Roll-off	Roll-on Roll-offloading and unloading in a transport configuration on A400M, C-130	Roll-on Roll-offloading and unloading in a transport configuration on A400M, C-130	Roll-on Roll-offloading and unloading in a transport configuration on A400M, C-130	TBD	Roll-on Roll-offloading and unloading in a transport configuration on A400M, C-130
Corps Maneuver and Support Elements	Provide continuous air defense coverage of corps maneuver and support elements as they advance up to 400 km per day at a rate of 50 kmph off-road/90 kmph on-road	Provide continuous air defense coverage of corps maneuver and support elements as they advance up to 400 km per day at a rate of 50 kmph off-road/90 kmph on-road	Provide continuous air defense coverage of corps maneuver and support elements as they advance up to 250km per day at a rate of 25 kmph	TBD	Provide continuous air defense coverage of corps maneuver and support elements as they advance up to 400 km per day at a rate of 50 kmph off-road/90 kmph on-road
External	By CH-47	By CH-47	By CH-47	TBD	By CH-47

Transportability	and CH-53 class cargo helicopters up to an ambient temp of 70 deg F, 2000 ft alt MSL, over a 30 nm dist ance; assembly and disassembly from a march order to a transport configurat-ion with organic equipment in 15 min	and CH-53 class cargo helicopters up to an ambient temp of 70 deg F, 2000 ft alt MSL, over a 30 nm distance; assembly and disassembly from a march order to a transport configuration with organic equipment in 15 min	and CH-53 class cargo helicopters up to an ambient temp of 70 deg F, 2000 ft alt MSL, over a 30 nm distance; assembly and disassembly from a march order to a transport configuration with organic equipment in 30 min		and CH-53 class cargo helicopters up to an ambient temp of 70 deg F, 2000 ft alt MSL, over a 30 nm distance; assembly and disassembly from a march order to a transport configuration with organic equipment in 15 min
Interoperability	Will interoperate with existing and planned National (top-level)/Joint/ Combined Air Defense BMC4I systems of the respective national forces in accordance with each nation's IERs	Will inter-operate with existing and planned National (top-level)/Joint/ Combined Air Defense BMC4I systems of the respective national forces in accordance with each nation's IERs	Will inter-operate with existing and planned National (critical top-level)/Joint/ Combined Air Defense BMC4I systems of the respective national forces in accordance with each nation's IERs	TBD	Will inter-operate with existing and planned National (top-level)/Joint/ Combined Air Defense BMC4I systems of the respective national forces in accordance with each nation's IERs
Flexibility					
MEADS in all configurations	Capable of netted distributed and site-centered operations	Capable of netted distributed and site-centered operations	Capable of netted distributed and site-centered operations	TBD	Capable of netted distributed and site-centered operations
MEADS Battalion	Will provide air and missile defense of	Will provide air and missile defense of	Will provide air and missile defense of	TBD	Will provide air and missile defense of

	selected critical assets and organizations located in an operationally equivalent area of 100km by 100km	selected critical assets and organizations located in an operationally equivalent area of 100km by 100km	selected critical assets and organizations located in an operationally equivalent area of 100km by 100km		selected critical assets and organizations located in an operationally equivalent area of 100km by 100km
Plug and Fight	Intra/intersystem plug-and-fight capable by implementing a MEADS network standard to be able to dynamically integrate MEADS and non-MEADS major end items (that comply with MEADS network standard)	Intra/inter-system plug-and-fight capable by implementing a MEADS network standard to be able to dynamically integrate MEADS and non-MEADS major end items (that comply with MEADS network standard)	Intra/inter-system plug-and-fight capable by implementing a MEADS network standard to be able to dynamically integrate MEADS and non-MEADS major end items (that comply with MEADS network standard)	TBD	Intra/inter-system plug-and-fight capable by implementing a MEADS network standard to be able to dynamically integrate MEADS and non-MEADS major end items (that comply with MEADS network standard)

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

Requirements Source

Capability Development Document (CDD) (MEADS Increment 1) dated June 14, 2004

Change Explanations

None

Acronyms and Abbreviations

ABT - Air Breathing Threat
alt - Altitude
BMC4I - Battle Management Command, Control, Communications, Computers, and Intelligence
deg - degrees
F - Fahrenheit
ft - feet
IER - Information Exchange Requirement
km - Kilometer
kmph - Kilometers per hour
min - minute
MSL - Mean Sea Level
nm - nautical mile
temp - temperature

Missile

Memo

Classified Performance information for the Missile Subprogram is captured in the classified annex for the Fire Unit Subprogram.

Track to Budget

Fire Unit

RDT&E

Appn		BA	PE		
Army	2040	04	0603869A		
	Project		**Name**		
	01B		Patriot/Medium Extended Air Defense System (MEADS) Combined Aggregate Program (CAP)		(Sunk)
Army	2040	05	0604869A		
	Project		**Name**		
	M06		Patriot/MEADS Combined Aggregate Program (CAP)		(Sunk)

Procurement

Appn		BA	PE		
Army	2032	02			
	Line Item		**Name**		
	C53201		Patriot/MEADS GSE		(Sunk)

Missile

RDT&E

Appn		BA	PE		
Army	2040	04	0603869A		
	Project		**Name**		
	01B		Patriot/Medium Extended Air Defense System (MEADS) Combined Aggregate Program (CAP)		(Sunk)
Army	2040	05	0604869A		
	Project		**Name**		
	M06		Patriot/MEADS Combined Aggregate Program (CAP)		(Sunk)
Army	2040	05	0605456A		
	Project		**Name**		
	PA3		Patriot PAC-3/Missile Segment Enhancement	(Shared)	(Sunk)

Procurement

Appn		BA	PE
Army	2032	02	0605456A

Line Item	Name
C53101	MSE Missile

Cost and Funding

Cost Summary - Total Program

Total Acquisition Cost and Quantity - Total Program

	BY2004 $M			BY2004 $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	4992.3	4992.3	--	3410.7	5737.0	5737.0	3897.7
Procurement	17759.1	17759.1	--	5908.6	24158.4	24158.4	8718.6
Flyaway	--	--	--	5397.5	--	--	7972.8
Recurring	--	--	--	5329.1	--	--	7889.6
Non Recurring	--	--	--	68.4	--	--	83.2
Support	--	--	--	511.1	--	--	745.8
Other Support	--	--	--	511.1	--	--	745.8
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	22751.4	22751.4	N/A	9319.3	29895.4	29895.4	12616.3

Cost and Funding

Cost Summary - Fire Unit

Total Acquisition Cost and Quantity - Fire Unit

Appropriation	BY2004 $M			BY2004 $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	4531.4	4531.4	5211.1	2708.8	5255.0	5255.0	3112.4
Procurement	11999.1	11999.1	13199.0	0.0	16584.4	16584.4	0.0
Flyaway	--	--	--	0.0	--	--	0.0
Recurring	--	--	--	0.0	--	--	0.0
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
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	16530.5	16530.5	N/A	2708.8	21839.4	21839.4	3112.4

Current estimate is based on the February 11, 2011, U.S. DoD decision to place a ceiling on MEADS spending at $4B and continue with a modified Design and Development phase in a "Demonstration of Capabilities" effort funded through FY 2013. FY 2013 was the final year of funding for the Fire Unit (FU) Subprogram.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	0	0	0
Procurement	48	48	0
Total	48	48	0

Unit of Measure: The FU is a representative unit of measure defined to include the ground support elements of the objective MEADS system: a Surveillance Radar; two Multi-Function Fire Control Radars; two Battle Management Command, Control, Communications, Computers and Intelligence Tactical Operations Centers; six Launchers; and three Launcher Reloaders. The program FU development estimate quantity is based on the planned objective force of 48 tactical FUs, which comprise 16 Battalions with three FUs each. Unit cost calculations include equipment at the Battalion level, which is above that at the FU level.

Cost Summary - Missile

Total Acquisition Cost and Quantity - Missile

Appropriation	BY2004 $M			BY2004 $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	460.9	460.9	530.0	701.9 [1]	482.0	482.0	785.3
Procurement	5760.0	5760.0	6336.0	5908.6	7574.0	7574.0	8718.6
Flyaway	--	--	--	5397.5	--	--	7972.8
Recurring	--	--	--	5329.1	--	--	7889.6
Non Recurring	--	--	--	68.4	--	--	83.2
Support	--	--	--	511.1	--	--	745.8
Other Support	--	--	--	511.1	--	--	745.8
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	6220.9	6220.9	N/A	6610.5	8056.0	8056.0	9503.9

[1] ***APB Breach***

The Patriot/MEADS CAP missile procurement funds in FY 2010 - FY 2013 were transferred to the Patriot Advanced Capability-3 (PAC-3) procurement funding line to obtain additional PAC-3 missile quantities.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E	0	0	0
Procurement	1528	1528	1528
Total	1528	1528	1528

Unit of Measure: The Misssile Segment Enhancement is the representative unit of measure for the Missile Subprogram.

Cost and Funding

Funding Summary - Total Program

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

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	3897.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3897.7
Procurement	83.2	690.4	384.6	419.8	422.6	458.7	497.6	5761.7	8718.6
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	3980.9	690.4	384.6	419.8	422.6	458.7	497.6	5761.7	12616.3
PB 2014 Total	4038.3	540.4	540.5	559.6	566.8	655.2	536.8	5394.4	12832.0
Delta	-57.4	150.0	-155.9	-139.8	-144.2	-196.5	-39.2	367.3	-215.7

Cost and Funding

Funding Summary - Fire Unit

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

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	3112.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3112.4
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 2015 Total	3112.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3112.4
PB 2014 Total	3165.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3165.1
Delta	-52.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-52.7

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	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 2015 Total	0	0	0	0	0	0	0	0	0	0
PB 2014 Total	0	0	0	0	0	0	0	0	0	0
Delta	0	0	0	0	0	0	0	0	0	0

Funding Summary - Missile

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

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	785.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	785.3
Procurement	83.2	690.4	384.6	419.8	422.6	458.7	497.6	5761.7	8718.6
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	868.5	690.4	384.6	419.8	422.6	458.7	497.6	5761.7	9503.9
PB 2014 Total	873.2	540.4	540.5	559.6	566.8	655.2	536.8	5394.4	9666.9
Delta	-4.7	150.0	-155.9	-139.8	-144.2	-196.5	-39.2	367.3	-163.0

The Army Acquisition Objective for the Patriot Advanced Capability-3 Missile Segment Enhancement is 3,376 missiles.

The cost estimates for the Missile Subprogram in this report are based on the original program of record.

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	0	86	70	76	80	88	94	1034	1528
PB 2015 Total	0	0	86	70	76	80	88	94	1034	1528
PB 2014 Total	0	0	56	72	80	82	104	108	1026	1528
Delta	0	0	30	-2	-4	-2	-16	-14	8	0

Cost and Funding

Annual Funding By Appropriation - Fire Unit

Annual Funding TY$ - Fire Unit
2040 | RDT&E | Research, Development, Test, and Evaluation, Army

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
2004	--	--	--	--	--	--	126.9
2005	--	--	--	--	--	--	164.0
2006	--	--	--	--	--	--	193.0
2007	--	--	--	--	--	--	211.0
2008	--	--	--	--	--	--	316.3
2009	--	--	--	--	--	--	423.7
2010	--	--	--	--	--	--	501.1
2011	--	--	--	--	--	--	450.6
2012	--	--	--	--	--	--	377.6
2013	--	--	--	--	--	--	348.2
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**3112.4**

Annual Funding BY$ - Fire Unit
2040 | RDT&E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2004	--	--	--	--	--	--	124.0
2005	--	--	--	--	--	--	155.7
2006	--	--	--	--	--	--	178.3
2007	--	--	--	--	--	--	190.4
2008	--	--	--	--	--	--	280.1
2009	--	--	--	--	--	--	370.4
2010	--	--	--	--	--	--	431.5
2011	--	--	--	--	--	--	380.5
2012	--	--	--	--	--	--	313.8
2013	--	--	--	--	--	--	284.1
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**2708.8**

Annual Funding By Appropriation - Missile

Annual Funding TY$ - Missile
2040 | RDT&E | Research, Development, Test, and Evaluation, Army

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
2004	--	--	--	--	--	--	109.9
2005	--	--	--	--	--	--	87.3
2006	--	--	--	--	--	--	81.4
2007	--	--	--	--	--	--	111.9
2008	--	--	--	--	--	--	53.5
2009	--	--	--	--	--	--	31.0
2010	--	--	--	--	--	--	65.1
2011	--	--	--	--	--	--	121.5
2012	--	--	--	--	--	--	86.1
2013	--	--	--	--	--	--	37.6
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**785.3**

Annual Funding BY$ - Missile
2040 | RDT&E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2004	--	--	--	--	--	--	107.4
2005	--	--	--	--	--	--	82.9
2006	--	--	--	--	--	--	75.2
2007	--	--	--	--	--	--	101.0
2008	--	--	--	--	--	--	47.4
2009	--	--	--	--	--	--	27.1
2010	--	--	--	--	--	--	56.1
2011	--	--	--	--	--	--	102.6
2012	--	--	--	--	--	--	71.5
2013	--	--	--	--	--	--	30.7
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**701.9**

Annual Funding TY$ - Missile
2032 | Procurement | Missile Procurement, Army

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
2012	--	--	--	75.0	75.0	--	75.0
2013	--	--	--	8.2	8.2	--	8.2
2014	86	603.4	--	--	603.4	87.0	690.4
2015	70	336.1	--	--	336.1	48.5	384.6
2016	76	377.8	--	--	377.8	42.0	419.8
2017	80	382.0	--	--	382.0	40.6	422.6
2018	88	414.7	--	--	414.7	44.0	458.7
2019	94	449.8	--	--	449.8	47.8	497.6
2020	90	467.8	--	--	467.8	35.2	503.0
2021	90	466.0	--	--	466.0	36.7	502.7
2022	90	465.8	--	--	465.8	36.7	502.5
2023	90	465.3	--	--	465.3	36.7	502.0
2024	90	464.7	--	--	464.7	36.7	501.4
2025	90	464.1	--	--	464.1	36.7	500.8
2026	90	463.5	--	--	463.5	36.7	500.2
2027	90	464.5	--	--	464.5	35.0	499.5
2028	90	464.1	--	--	464.1	34.9	499.0
2029	90	463.7	--	--	463.7	34.9	498.6
2030	90	463.3	--	--	463.3	34.9	498.2
2031	44	213.0	--	--	213.0	16.0	229.0
2032	--	--	--	--	--	12.4	12.4
2033	--	--	--	--	--	12.4	12.4
Subtotal	**1528**	**7889.6**	**--**	**83.2**	**7972.8**	**745.8**	**8718.6**

Annual Funding BY$ - Missile
2032 | Procurement | Missile Procurement, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2004 $M	Non End Item Recurring Flyaway BY 2004 $M	Non Recurring Flyaway BY 2004 $M	Total Flyaway BY 2004 $M	Total Support BY 2004 $M	Total Program BY 2004 $M
2012	--	--	--	61.8	61.8	--	61.8
2013	--	--	--	6.6	6.6	--	6.6
2014	86	477.6	--	--	477.6	68.8	546.4
2015	70	261.4	--	--	261.4	37.7	299.1
2016	76	288.1	--	--	288.1	32.0	320.1
2017	80	285.5	--	--	285.5	30.4	315.9
2018	88	303.9	--	--	303.9	32.3	336.2
2019	94	323.2	--	--	323.2	34.3	357.5
2020	90	329.5	--	--	329.5	24.8	354.3
2021	90	321.8	--	--	321.8	25.3	347.1
2022	90	315.4	--	--	315.4	24.8	340.2
2023	90	308.8	--	--	308.8	24.4	333.2
2024	90	302.4	--	--	302.4	23.9	326.3
2025	90	296.1	--	--	296.1	23.4	319.5
2026	90	289.9	--	--	289.9	23.0	312.9
2027	90	284.8	--	--	284.8	21.5	306.3
2028	90	279.0	--	--	279.0	21.0	300.0
2029	90	273.3	--	--	273.3	20.6	293.9
2030	90	267.7	--	--	267.7	20.2	287.9
2031	44	120.7	--	--	120.7	9.0	129.7
2032	--	--	--	--	--	6.9	6.9
2033	--	--	--	--	--	6.8	6.8
Subtotal	**1528**	**5329.1**	**--**	**68.4**	**5397.5**	**511.1**	**5908.6**

Low Rate Initial Production

Fire Unit

	Initial LRIP Decision	Current Total LRIP
Approval Date	8/6/2004	2/11/2011
Approved Quantity	7	0
Reference	Milestone B ADM	DoD Memorandum
Start Year	2013	
End Year	2016	

The Defense Acquisition Executive approved LRIP quantities for the MEADS objective system Major End Items (MEIs) at Milestone B on August 6, 2004. The LRIP quantities of the MEIs are: 17 Surveillance Radars, 28 Multi-Function Fire Control Radars; eight Battle Management Command, Control, Communications, Computers and Intelligence Tactical Operations Centers; 12 Lightweight Launchers; and six Launcher Reloaders. The LRIP quantities are the minimum required to conduct testing and evaluate performance before Full Rate Production. The Fire Unit (FU) quantities represent the collection of the unique MEIs into operational units. Therefore, FU LRIP quantity based on the approved MEI LRIP quantities is seven FUs.

Based on the February 11, 2011, U.S. DoD decision to place a ceiling on MEADS spending at $4B and continue with a modified Design and Development phase in a "Demonstration of Capabilities" effort funded through 2013, the FU LRIP data, while relevant for historical reference, is no longer valid for the December 2013 SAR.

Missile

	Initial LRIP Decision	Current Total LRIP
Approval Date	8/6/2004	8/6/2004
Approved Quantity	148	148
Reference	Milestone B ADM	Milestone B ADM
Start Year	2010	2010
End Year	2011	2011

Foreign Military Sales

Fire Unit
None

Missile
None

Nuclear Costs

Fire Unit
None

Missile
None

Unit Cost

Fire Unit

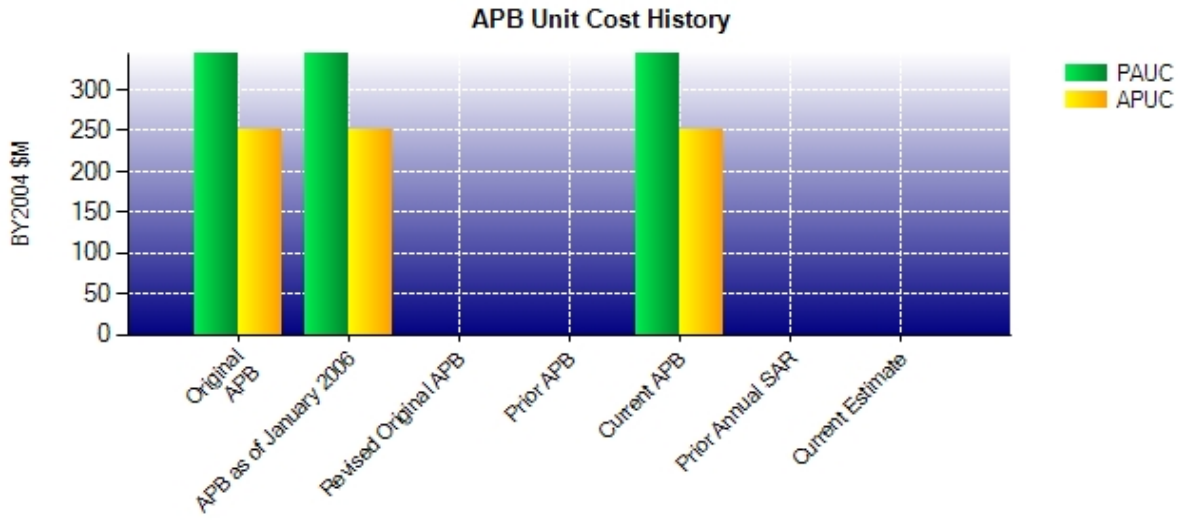
Unit Cost Report

Unit Cost	BY2004 $M Current UCR Baseline (AUG 2004 APB)	BY2004 $M Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	16530.5	2708.8	
Quantity	48	0	
Unit Cost	344.385	--	--
Average Procurement Unit Cost (APUC)			
Cost	11999.1	0.0	
Quantity	48	0	
Unit Cost	249.981	--	--

Unit Cost	BY2004 $M Original UCR Baseline (AUG 2004 APB)	BY2004 $M Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	16530.5	2708.8	
Quantity	48	0	
Unit Cost	344.385	--	--
Average Procurement Unit Cost (APUC)			
Cost	11999.1	0.0	
Quantity	48	0	
Unit Cost	249.981	--	--

Fire Unit

Unit Cost History



		BY2004 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	AUG 2004	344.385	249.981	454.988	345.508
APB as of January 2006	AUG 2004	344.385	249.981	454.988	345.508
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	AUG 2004	344.385	249.981	454.988	345.508
Prior Annual SAR	DEC 2012	N/A	N/A	N/A	N/A
Current Estimate	DEC 2013	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	
454.988	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	
345.508	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	AUG 2004	N/A	AUG 2004
Milestone C	N/A	NOV 2012	N/A	NOV 2012
IOC	N/A	SEP 2017	N/A	SEP 2017
Total Cost (TY $M)	N/A	21839.4	N/A	3112.4
Total Quantity	N/A	48	N/A	0
Prog. Acq. Unit Cost (PAUC)	N/A	454.988	N/A	N/A

FIRE UNIT:

The Defense Acquisition Board approved program was structured with three increments, each having a separate Milestone C. Increments 1 and 2 are no longer required in accordance with the Army Integrated Air and Missile Defense Acquisition Strategy. The Patriot/MEADS CAP program schedule identifies a Milestone C for the intermediate Acquisition Increments (1 and 2); however, full MEADS objective capability was planned to be achieved at Milestone C for Acquisition Increment 3. Per the U.S. DoD decision on February 11, 2011, funding has been limited to completion of the Design and Development phase. FY 2013 was the final year of funding for the Fire Unit Subprogram.

Missile

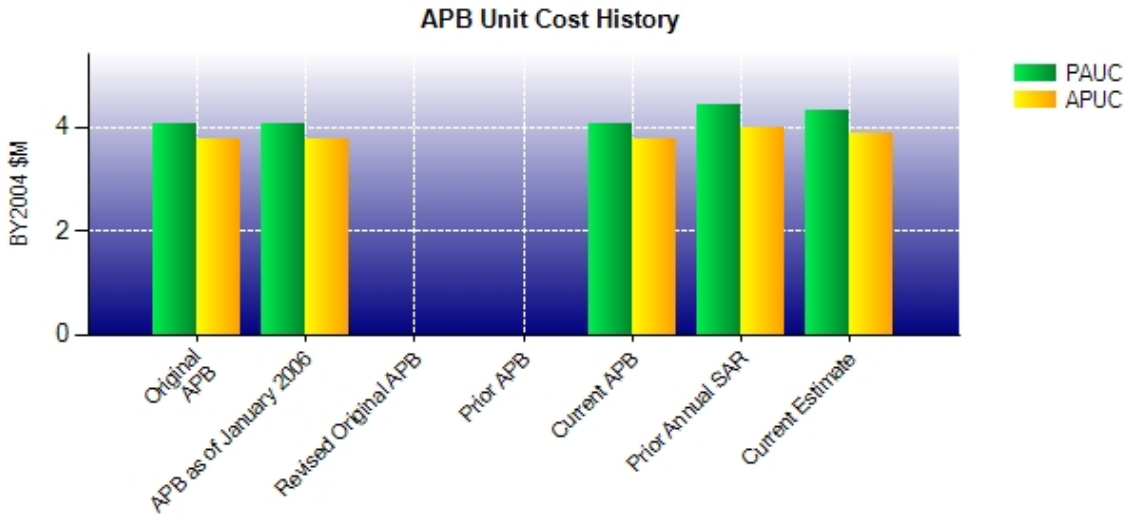
Unit Cost Report

Unit Cost	BY2004 $M Current UCR Baseline (AUG 2004 APB)	BY2004 $M Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	6220.9	6610.5	
Quantity	1528	1528	
Unit Cost	4.071	4.326	+6.26
Average Procurement Unit Cost (APUC)			
Cost	5760.0	5908.6	
Quantity	1528	1528	
Unit Cost	3.770	3.867	+2.57

Unit Cost	BY2004 $M Original UCR Baseline (AUG 2004 APB)	BY2004 $M Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	6220.9	6610.5	
Quantity	1528	1528	
Unit Cost	4.071	4.326	+6.26
Average Procurement Unit Cost (APUC)			
Cost	5760.0	5908.6	
Quantity	1528	1528	
Unit Cost	3.770	3.867	+2.57

Missile

Unit Cost History



		BY2004 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	AUG 2004	4.071	3.770	5.272	4.957
APB as of January 2006	AUG 2004	4.071	3.770	5.272	4.957
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	AUG 2004	4.071	3.770	5.272	4.957
Prior Annual SAR	DEC 2012	4.442	3.984	6.327	5.813
Current Estimate	DEC 2013	4.326	3.867	6.220	5.706

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	
5.272	0.189	0.000	0.309	0.000	0.408	0.000	0.042	0.948	6.220

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
4.957	0.178	0.000	0.309	0.000	0.220	0.000	0.042	0.749	5.706

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	N/A	N/A	N/A
Milestone C	N/A	N/A	N/A	N/A
FUE	N/A	MAR 2011	N/A	SEP 2015
Total Cost (TY $M)	N/A	8056.0	N/A	9503.9
Total Quantity	N/A	1528	N/A	1528
Prog. Acq. Unit Cost (PAUC)	N/A	5.272	N/A	6.220

Cost Variance

Fire Unit

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	5255.0	16584.4	--	21839.4
Previous Changes				
Economic	+127.2	-193.6	--	-66.4
Quantity	--	-12555.5	--	-12555.5
Schedule	--	-86.5	--	-86.5
Engineering	--	--	--	--
Estimating	-2217.1	-706.7	--	-2923.8
Other	--	--	--	--
Support	--	-3042.1	--	-3042.1
Subtotal	-2089.9	-16584.4	--	-18674.3
Current Changes				
Economic	-7.0	--	--	-7.0
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-45.7	--	--	-45.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-52.7	--	--	-52.7
Total Changes	-2142.6	-16584.4	--	-18727.0
CE - Cost Variance	3112.4	--	--	3112.4
CE - Cost & Funding	3112.4	--	--	3112.4

Summary Base Year 2004 $M				
	RDT&E	**Proc**	**MILCON**	**Total**
SAR Baseline (Dev Est)	4531.4	11999.1	--	16530.5
Previous Changes				
Economic	--	--	--	--
Quantity	--	-8875.5	--	-8875.5
Schedule	--	-148.0	--	-148.0
Engineering	--	--	--	--
Estimating	-1785.5	-795.4	--	-2580.9
Other	--	--	--	--
Support	--	-2180.2	--	-2180.2
Subtotal	-1785.5	-11999.1	--	-13784.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-37.1	--	--	-37.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-37.1	--	--	-37.1
Total Changes	-1822.6	-11999.1	--	-13821.7
CE - Cost Variance	2708.8	--	--	2708.8
CE - Cost & Funding	2708.8	--	--	2708.8

Previous Estimate: December 2012

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-7.0
Adjustment for current and prior escalation. (Estimating)	+5.9	+7.0
Decrease in FY 2013 funding due to Congressional reduction. (Estimating)	-43.0	-52.7
RDT&E Subtotal	-37.1	-52.7

Cost Variance

Missile

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	482.0	7574.0	--	8056.0
Previous Changes				
Economic	+18.5	+325.9	--	+344.4
Quantity	--	--	--	--
Schedule	--	+634.8	--	+634.8
Engineering	--	--	--	--
Estimating	+284.8	+335.2	--	+620.0
Other	--	--	--	--
Support	--	+11.7	--	+11.7
Subtotal	+303.3	+1307.6	--	+1610.9
Current Changes				
Economic	-1.1	-54.2	--	-55.3
Quantity	--	--	--	--
Schedule	--	-162.6	--	-162.6
Engineering	--	--	--	--
Estimating	+1.1	+1.1	--	+2.2
Other	--	--	--	--
Support	--	+52.7	--	+52.7
Subtotal	--	-163.0	--	-163.0
Total Changes	+303.3	+1144.6	--	+1447.9
CE - Cost Variance	785.3	8718.6	--	9503.9
CE - Cost & Funding	785.3	8718.6	--	9503.9

Summary Base Year 2004 $M				
	RDT&E	**Proc**	**MILCON**	**Total**
SAR Baseline (Dev Est)	460.9	5760.0	--	6220.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+48.6	--	+48.6
Engineering	--	--	--	--
Estimating	+240.1	+302.9	--	+543.0
Other	--	--	--	--
Support	--	-24.6	--	-24.6
Subtotal	+240.1	+326.9	--	+567.0
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	-208.2	--	-208.2
Engineering	--	--	--	--
Estimating	+0.9	+1.3	--	+2.2
Other	--	--	--	--
Support	--	+28.6	--	+28.6
Subtotal	+0.9	-178.3	--	-177.4
Total Changes	+241.0	+148.6	--	+389.6
CE - Cost Variance	701.9	5908.6	--	6610.5
CE - Cost & Funding	701.9	5908.6	--	6610.5

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)	+0.9	+1.1
RDT&E Subtotal	+0.9	0.0

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-54.2
Stretch-out of procurement buy profile in FY 2020 through FY 2033. (Schedule) (Schedule)	0.0	+93.3
Adjustment for current and prior escalation. (Estimating)	+4.8	+5.8
Additional Schedule Variance due to the acceleration of 30 missiles in FY 2014 (procurement changed from 56 to 86 missiles). (Schedule)	-208.2	-255.9
Decrease in FY 2013 funding due to Congressional reduction. (Estimating)	-3.5	-4.7
Adjustment for current and prior escalation. (Support)	+0.5	+0.8
Increase in Other Support due to stretch-out of procurement buy profile. (Support) (Support)	+28.1	+51.9
Procurement Subtotal	-178.3	-163.0

Contracts

Appropriation: RDT&E	
Contract Name	**Design & Development**
Contractor	MEADS International Inc.
Contractor Location	5600 W Sand Lake Road Orlando, FL 32819
Contract Number, Type	NAMEAD-04-C-6000, CPFF
Award Date	September 28, 2004
Definitization Date	February 16, 2005

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price at Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
3400.0	N/A	0	3653.0	N/A	0	3653.0	3653.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications implemented for emerging program requirements, which included Missile Segment Enhancement integration, extended risk reduction actvities, and flight test activities.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	-2.5	-3.1
Previous Cumulative Variances	+29.9	-15.3
Net Change	-32.4	+12.2

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to additional Integrated Product Team (IPT) support requirements leading up to the November 2013 flight test and continued activities to support additional testing at the White Sands Missile Range, New Mexico, as well as continued software build work for FY 2014 demonstrations.

The favorable net change in the schedule variance is due to the fact that IPTs implemented revised contract performance measurement baselines to reflect current flight test dates and revised test requirements.

Contract Comments

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

The North Atlantic Treaty Organization Medium Extended Air Defense System Management Agency (NAMEADSMA) awarded a contract on May 5, 2005, to MEADS International (MI) for the Design and Development (D&D) of MEADS. The assigned contract number is NAMEADSMO/CF/6000/04. NAMEADSMA manages the program on behalf of the participating nations of the U.S., Italy, and Germany. MI is a multi-national joint venture with MBDA-Italia, the European Aeronatuic Defence and Space Company, MBDA-Lenkflugkorpersysteme (LFK) in Germany, and Lockheed Martin Corporation in the U.S.

The initial contract price represents the value of the D&D contract with international participation by the U.S., Italy, and Germany. The D&D contract price, including European partners' shares, is $3.4B, broken out as $1,982.0M (U.S.), 848M Euros (Germany), and 558M Euros (Italy).

On March 26, 2013, the President signed the FY 2014 PB, which included the $380.8M in FY 2013 to fund the final year of a MEADS "Demonstration of Capabilities" effort and bring the MEADS development program to closure.

Appropriation: RDT&E

Contract Name	**MSE Follow on Test Prg**
Contractor	Lockheed Martin Corporation
Contractor Location	1701 W Marshall Drive Dallas, TX 75265
Contract Number, Type	W31P4Q-07-G-0001/12, CPFF
Award Date	August 23, 2010
Definitization Date	July 18, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price at Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
49.1	N/A	N/A	51.0	N/A	N/A	77.4	78.9

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to a contract modification to extend the period of performance.

However, the Contractor and Program Manager Estimated Prices at Completion have increased due to an undefinitized contract modification for components for four test missiles. The effort was placed on contract as authorized unpriced work; therefore, until definitized, the Current Contract Price Target is unchanged.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/26/2014)	-0.1	-0.5
Previous Cumulative Variances	+1.2	-1.4
Net Change	-1.3	+0.9

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to additional manpower added to support the preparation for the Flight Test 7-5. Manpower increased due to added effort to procure and assemble four Patriot Advanced Capability-3 (PAC-3) Missile Segment Enhancement (MSE) missiles.

The favorable net change in the schedule variance is due to successful Flight Tests 7-4 and 7-5 with minimal remaining tasks to be completed.

Contract Comments

The purpose of this effort is to conduct two flight test campaigns to intercept two Tactical Ballistic Missiles and one Air Breathing Threat representative target for Patriot. The contractor shall provide and utilize five PAC-3 MSE missiles representing the MSE production configuration that incorporates the final configuration of PAC-3 obsolescence upgrades.

Appropriation: Procurement

Contract Name	**MSE IPF**
Contractor	Lockheed Martin Corporation
Contractor Location	1701 W Marshall Drive Dallas, TX 75265
Contract Number, Type	W31P4Q-12-C-0001, CPIF
Award Date	July 02, 2012
Definitization Date	July 02, 2012

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price at Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
69.0	N/A	0	69.0	N/A	0	77.4	78.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/26/2014)	+2.2	-9.3
Previous Cumulative Variances	+0.1	+0.2
Net Change	+2.1	-9.5

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to contract requirements not being met, which delayed major purchase orders during the 12-month period.

The unfavorable net change in the schedule variance is due to delays in tool fabrication and development of control surfaces during the first six months. During the last six-month period, delays were driven by tool fabrication, material delivery and tool orders, and Dallas production operations tool capacity issues. Aerojet also experienced delays with its subtier suppliers ordering materials and tools.

Contract Comments

The purpose of the effort is to set forth the requirements for the manufacture, modification, and/or procurement of production special tooling, special test equipment, and special inspection equipment to support the Patriot Advanced Capability (PAC-3) Missile Segment Enhancement (MSE) missile program. The Initial Production Facilities (IPF) production equipment is to be proved-out and in place 24 months following contract award. The PAC-3 MSE IPF contract stresses production of MSE missiles at the lowest feasible life-cycle cost. The objective of the PAC-3 MSE IPF is to establish and sustain the capability to produce PAC-3 MSE missiles at a rate of up to 20 per month. The contract was awarded and definitized on July 2, 2012, with a total contract value of $69.0M.

Deliveries and Expenditures

Fire Unit

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	0	0	0	--
Total Program Quantity Delivered	0	0	0	--

Expended and Appropriated (TY $M)			
Total Acquisition Cost	3112.4	Years Appropriated	10
Expended to Date	3149.9	Percent Years Appropriated	100.00%
Percent Expended	101.20%	Appropriated to Date	3112.4
Total Funding Years	10	Percent Appropriated	100.00%

The above data is current as of 3/24/2014.

Missile

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	0	0	1528	0.00%
Total Program Quantity Delivered	0	0	1528	0.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	9503.9	Years Appropriated	11
Expended to Date	726.2	Percent Years Appropriated	36.67%
Percent Expended	7.64%	Appropriated to Date	1558.9
Total Funding Years	30	Percent Appropriated	16.40%

The above data is current as of 3/24/2014.

Operating and Support Cost

Fire Unit

Assumptions and Ground Rules

Cost Estimate Reference:
The U.S. DoD made a decision on February 11, 2011, to place a ceiling on MEADS spending at $4B and continue with a modified Design and Development phase resulting in a "Demonstration of Capabilities" effort funded through FY 2013. FY 2013 was the final year of funding for the Fire Unit (FU) Subprogram.

Therefore, since this program will not go into production and fielding, there are no FU O&S costs.

Sustainment Strategy:
None

Antecedent Information:
None

Unitized O&S Costs BY2004 $M		
Cost Element	**Fire Unit Average Annual Cost Of All Fire Units**	**No Antecedent System (Antecedent)**
Unit-Level Manpower	0.000	0.000
Unit Operations	0.000	0.000
Maintenance	0.000	0.000
Sustaining Support	0.000	0.000
Continuing System Improvements	0.000	0.000
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	--	--

Unitized Cost Comments:
None

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	Fire Unit		Fire Unit	No Antecedent System (Antecedent)
Base Year	33094.4	36403.8	0.0	N/A
Then Year	61902.2	N/A	0.0	N/A

Total O&S Costs Comments:
None

Disposal Costs:

Disposal costs are TBD.

Missile

Assumptions and Ground Rules

Cost Estimate Reference:
The Production Missile Segment Enhancement (MSE) O&S cost estimate was established in the 2004 APB in support of the Patriot/MEADS CAP Milestone B decision.

The current O&S cost estimate for the Missile Subprogram (MSE) has been updated since the prior annual SAR to reflect the program procurement quantity current estimate. The estimate was completed in Automated Cost Estimating-Integrated Tools. The O&S estimate covers a life cycle of 44 years, FY 2016 through FY 2060, and includes the cost to support the Patriot Advanced Capability (PAC-3) MSE missile. The estimate is based on analogous costs for repair and recertification of the PAC-3 missile. The estimate also uses an analogous historical factor to estimate the quantity of missiles that will require annual repair and the program losses for operational use, flight testing, and planned field surveillance.

Sustainment Strategy:
The PAC-3 MSE missile procurement quantity is 1,528. The missile will be recertified twice, at ten-year intervals, within its 30-year planned service life. Contractor Logistics Support (CLS) is used to support maintenance and repair of the PAC-3 MSE certified missile rounds. The missile is a self-contained major end item and does not require sustainment in the field. There are no intermediate-level maintenance tasks for the missile and the organic depot/agency does not possess the required repair capacity, tools, and test equipment for depot level sustainment, supply support, and software support. Missile subsystems are required to be shipped to subcontractor facilities for repair and replacement of subsystem components. The Government has limited technical data rights and relies on CLS for missile sustainment.

Antecedent Information:
There is no antecedent system.

Unitized O&S Costs BY2004 $M		
Cost Element	**Missile Average Annual Cost Of All Missiles**	**No Antecedent System (Antecedent)**
Unit-Level Manpower	0.000	0.000
Unit Operations	0.000	0.000
Maintenance	50.700	0.000
Sustaining Support	5.500	0.000
Continuing System Improvements	7.200	0.000
Indirect Support	13.300	0.000
Other	0.000	0.000
Total	76.700	--

Unitized Cost Comments:
Unitized costs are calculated based on total O&S current cost estimate of $3,373.9M (BY$ 2004) distributed over a planned service life of 44 years. The Unitized Annual O&S Costs reflect O&S for total inventory per year of 1,528 missiles (76.7 annual missile cost x 44-year service life).

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	Missile		Missile	No Antecedent System (Antecedent)
Base Year	4582.6	5040.9	3373.9	N/A
Then Year	8571.8	N/A	7169.9	N/A

Total O&S Costs Comments:

The differences between the current estimate and the APB are attributed to a change in quantity and refinement of the estimate using actual cost.

Disposal Costs:

Disposal costs are TBD.