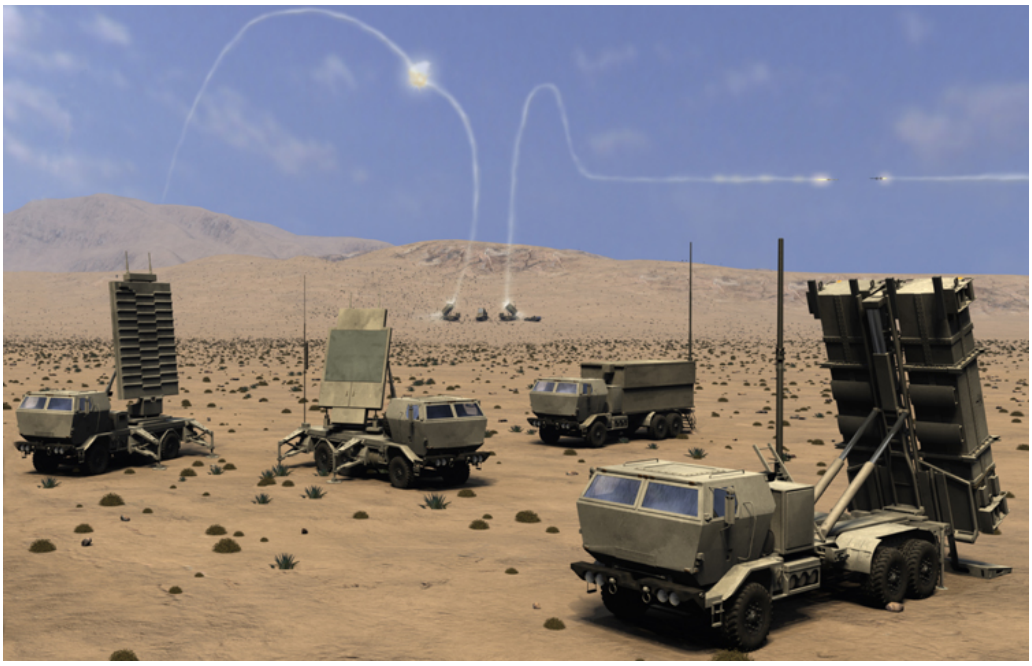
Selected Acquisition Report (SAR)

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



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

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Program Information

Program Name

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

DoD Component

Army

Responsible Office

Responsible Office

Mr. Darryl Colvin
Project Manager
Lower Tier Project Office
Building 5250, Martin Road
Redstone Arsenal, AL 35898-8000
darryl.colvin@us.army.mil

Phone 256-955-3240
Fax 256-955-3108
DSN Phone 645-3240
DSN Fax 645-4656

Date Assigned December 1, 2008

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 Combined Aggregate Program (CAP) represents the process through which the PATRIOT system transitions to the Medium Extended Air Defense System (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 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 Missile Segment Enhancement (MSE) missile, as evolved from the current PATRIOT Advanced Capability-3 (PAC-3) missile's Cost Reduction Initiative (CRI) design, will provide 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 Air and Missile Defense (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 U.S. MEADS battery, which will be scalable and tailorable to operational requirements, will consist of: the Integrated AMD (IAMD) 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 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 (MFCR) 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 MSE missile was accepted as the baseline missile for MEADS and is being developed by the U.S. to meet that operational requirement. The 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.

On February 11, 2011, the U.S. DoD, after having considered several potential courses of action, rendered a decision for the Medium Extended Air Defense System (MEADS) program. The U.S. DoD determined that the best course of action is to continue the 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 to implement a "Demonstration of Capabilities" 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.

Given existing MOU/D&D contract commitments in 2013, and the likelihood that the U.S. will not procure MEADS, the U.S. must re-assess its strategy for handling critical U.S. Government Furnished Equipment (GFE) currently envisioned as part of the MEADS program. This strategy must address continuing support for GFE items 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. No resources are currently budgeted to support these development efforts beyond 2013.

On November 29, 2012, MEADS successfully intercepted an MQM-107 target and demonstrated a 360-degree cued search and track capability during its first flight test at White Sands Missile Range (WSMR), New Mexico. The MEADS test configuration included a networked MEADS Battle Management Command, Control, Communications, and Computers Intelligence (BMC4I) tactical operations center, lightweight launcher firing a PAC-3 MSE certified missile round, and a 360-degree MEADS Multifunction Fire Control Radar (MFCR). The event was the first engagement of an air breathing target by the PAC-3 MSE missile.

On March 26, 2013, the President signed the FY 2014 President’s Budget, which includes $380.8M in FY 2013 to fund the final year of a MEADS Demonstration of Capabilities effort and bring the MEADS development program to a close. The program will continue verification and testing of the MEADS 360-degree MFCR and would 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. Testing will include the last of two intercept flight tests and an intercept of a Tactical Ballistic Missile (TBM) target, as well as several system capability demonstrations. Completion of the MEADS Demonstration of Capabilities effort will result in the maturation of MEADS technologies that can possibly be transitioned to other U.S. Air and Missile Defense programs. Planning for the closeout of MEADS will continue in parallel with the Demonstration of Capabilities execution with an anticipated date for termination of U.S. security oversight and return of U.S. GFE by the end of 4Q FY 2014. It is assumed that the Office of the Secretary of Defense will provide a revised Acquisition Decision Memorandum to formally terminate the program, so that closeout actions can officially commence by the end of the 2Q FY 2014.

B. MISSILE Subprogram.

The MSE Initial Production Facilities (IPF) contract was awarded in the amount of $68.99M on July 2, 2012, to Lockheed Martin Missiles and Fire Control, Dallas, Texas. The MSE IPF effort includes the design, development, fabrication, and installation of all tooling and test equipment necessary to produce the PAC-3 MSE missile configuration at a rate of up to 20 missiles per month on a one shift, 8 hours, 5 days a week (1-8-5) basis. The MSE IPF effort will modify the current PAC-3 All-Up Round facility in Camden, Arkansas, and also provide for production facilitization for all supplier locations that manufacture MSE unique components (e.g., MSE solid rocket motor, MSE ignition safety device, and MSE single canister configuration).

On December 6, 2012, the U.S. Army Lower Tier Project Office conducted the PAC-3 MSE 7-4 Missile Flight Test (MFT) at WSMR, New Mexico. PATRIOT ground support equipment launched two production representative PAC-3 MSE missiles using a ripple method of fire from a single Launching Station to intercept a threat representative TBM target. The MSE 7-4 MFT scenario consisted of a TBM fired from the Oasis Site on WSMR threatening the Fire Unit-defended asset. The engaging Fire Unit, with two Fire Units observing, used tactical Post Deployment Build-7 Software to engage and kill the TBM target. Final data analysis indicates that the primary MFT mission objectives were successfully achieved.

The next PAC-3 MSE MFT 7-5 is scheduled for 3Q FY 2013. The MSE has successfully completed 3 intercept flight tests and, upon successful completion of the remaining flight test in 3Q FY 2013, will go forward to the Milestone Decision Authority with program data to support a Milestone C decision in 1Q FY 2014.

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

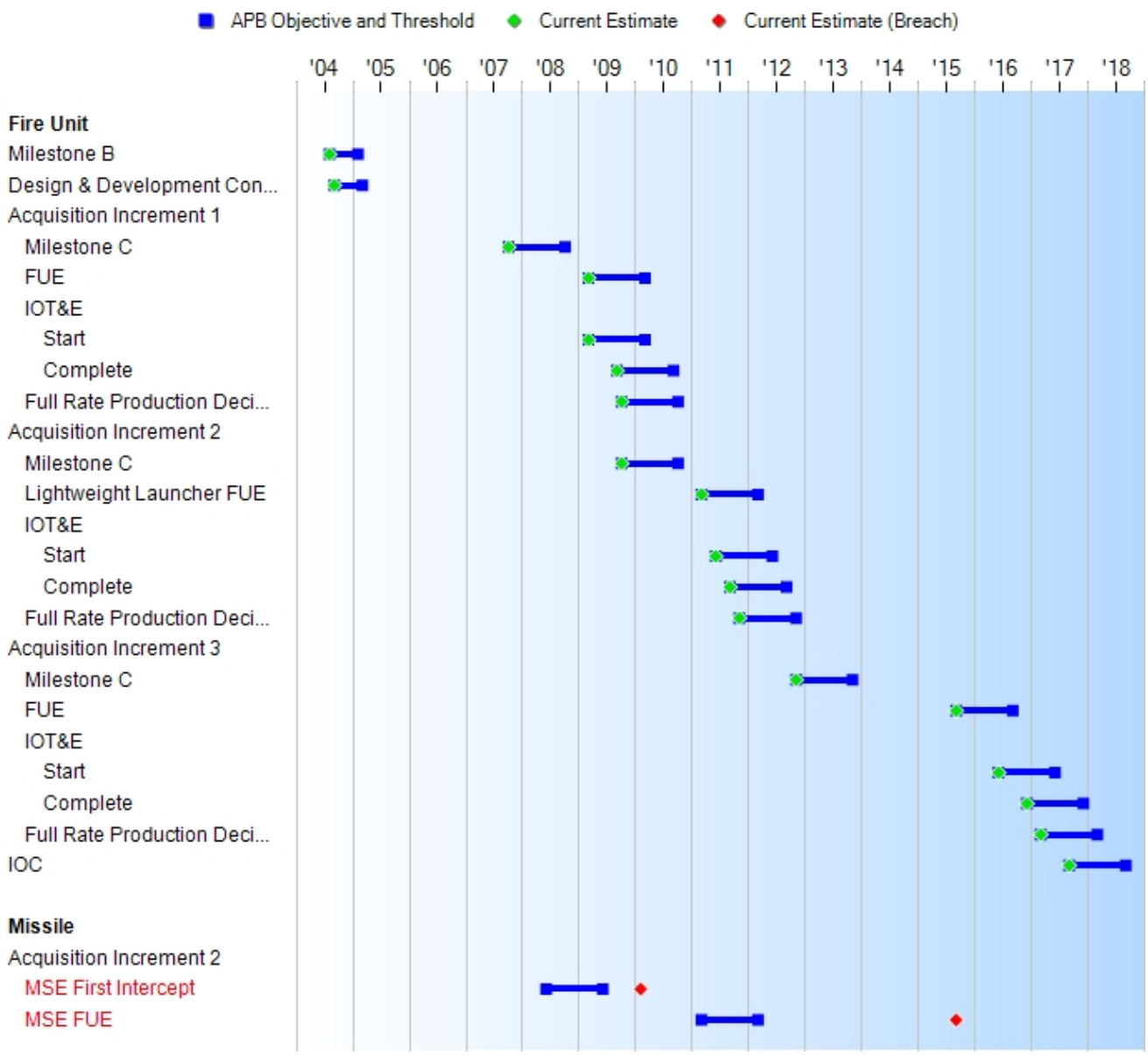
APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☑
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

Acronyms And Abbreviations

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

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 until further program definition.

The Defense Acquisition Board (DAB) 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 (BMC4I) capability fielded to PATRIOT Battalions; Acquisition Increment 2 fields the MEADS Lightweight Launcher capabililty and the Missile Segment Enhancement (MSE) 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.

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*

Acronyms And Abbreviations

FUE - First Unit Equipped
MSE - Missile Segment Enhancement

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 and December 2012.

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)

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

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
TBD - To be determined
temp - temperature

Change Explanations

None

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

Missile

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

Track To Budget

Fire Unit

RDT&E				
APPN 2040	BA 04	PE 0603869A	(Army)	
	Project 01B	PATRIOT/Medium Extended Air Defense System (MEADS) Combined Aggregate Program (CAP)		(Sunk)
APPN 2040	BA 05	PE 0604869A	(Army)	
	Project M06	PATRIOT/MEADS Combined Aggregate Program (CAP)		(Sunk)
Procurement				
APPN 2032	BA 02		(Army)	
	ICN C53201	PATRIOT/MEADS GSE		(Sunk)

Missile

RDT&E				
APPN 2040	BA 04	PE 0603869A	(Army)	
	Project 01B	PATRIOT/Medium Extended Air Defense System (MEADS) Combined Aggregate Program (CAP)		(Sunk)
APPN 2040	BA 05	PE 0604869A	(Army)	
	Project M06	PATRIOT/MEADS Combined Aggregate Program (CAP)		(Sunk)
APPN 2040	BA 05	PE 0605456A	(Army)	
	Project PA3	PATRIOT PAC-3/Missile Segment Enhancement	(Shared)	(Sunk)
Procurement				

APPN 2032 BA 02 (Army)

ICN 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	--	3446.9	5737.0	5737.0	3950.4
Procurement	17759.1	17759.1	--	6086.9	24158.4	24158.4	8881.6
Flyaway	15071.8	--	--	5604.4	20409.3	--	8183.7
Recurring	14809.2	--	--	5532.9	20095.8	--	8095.8
Non Recurring	262.6	--	--	71.5	313.5	--	87.9
Support	2687.3	--	--	482.5	3749.1	--	697.9
Other Support	1550.4	--	--	482.5	2125.1	--	697.9
Initial Spares	1136.9	--	--	0.0	1624.0	--	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	9533.8	29895.4	29895.4	12832.0

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	2745.9	5255.0	5255.0	3165.1
Procurement	11999.1	11999.1	13199.0	0.0	16584.4	16584.4	0.0
Flyaway	9818.9	--	--	0.0	13494.5	--	0.0
Recurring	9556.3	--	--	0.0	13181.0	--	0.0
Non Recurring	262.6	--	--	0.0	313.5	--	0.0
Support	2180.2	--	--	0.0	3089.9	--	0.0
Other Support	1043.3	--	--	0.0	1465.9	--	0.0
Initial Spares	1136.9	--	--	0.0	1624.0	--	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	2745.9	21839.4	21839.4	3165.1

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 2013.

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 Fire Unit (FU) is a representative unit of measure defined to include the ground support elements of the objective MEADS system: a Surveillance Radar; 2 Multi-Function Fire Control Radars (MFCR); 2 Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) Tactical Operations Centers (TOC); 6 Launchers; and 3 Launcher Reloaders. The program FU development estimate quantity is based on the planned objective force of 48 tactical FUs, which comprise 16 Battalions with 3 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	701.0 [1]	482.0	482.0	785.3
Procurement	5760.0	5760.0	6336.0	6086.9	7574.0	7574.0	8881.6
Flyaway	5252.9	--	--	5604.4	6914.8	--	8183.7
Recurring	5252.9	--	--	5532.9	6914.8	--	8095.8
Non Recurring	0.0	--	--	71.5	0.0	--	87.9
Support	507.1	--	--	482.5	659.2	--	697.9
Other Support	507.1	--	--	482.5	659.2	--	697.9
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	6220.9	6220.9	N/A	6787.9	8056.0	8056.0	9666.9

[1] ***APB Breach***

PATRIOT/MEADS CAP missile procurement funds in FY 2010 - FY 2013 were transferred to the PATRIOT 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 Missile Segment Enhancement (MSE) is the representative unit of measure for the Missile Subprogram of the PATRIOT/MEADS CAP.

Cost and Funding

Funding Summary - Total Program

Appropriation and Quantity Summary - Total Program
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	3511.9	438.5	0.0	0.0	0.0	0.0	0.0	0.0	3950.4
Procurement	75.0	12.9	540.4	540.5	559.6	566.8	655.2	5931.2	8881.6
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 2014 Total	3586.9	451.4	540.4	540.5	559.6	566.8	655.2	5931.2	12832.0
PB 2013 Total	3601.8	451.4	538.6	505.1	596.4	566.7	500.1	6192.1	12952.2
Delta	-14.9	0.0	1.8	35.4	-36.8	0.1	155.1	-260.9	-120.2

Cost and Funding

Funding Summary - Fire Unit

Appropriation and Quantity Summary - Fire Unit
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	2764.2	400.9	0.0	0.0	0.0	0.0	0.0	0.0	3165.1
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 2014 Total	2764.2	400.9	0.0	0.0	0.0	0.0	0.0	0.0	3165.1
PB 2013 Total	2776.2	400.9	0.0	0.0	0.0	0.0	0.0	0.0	3177.1
Delta	-12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-12.0

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	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 2014 Total	0	0	0	0	0	0	0	0	0	0
PB 2013 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
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	747.7	37.6	0.0	0.0	0.0	0.0	0.0	0.0	785.3
Procurement	75.0	12.9	540.4	540.5	559.6	566.8	655.2	5931.2	8881.6
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 2014 Total	822.7	50.5	540.4	540.5	559.6	566.8	655.2	5931.2	9666.9
PB 2013 Total	825.6	50.5	538.6	505.1	596.4	566.7	500.1	6192.1	9775.1
Delta	-2.9	0.0	1.8	35.4	-36.8	0.1	155.1	-260.9	-108.2

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	0	0	56	72	80	82	104	1134	1528
PB 2014 Total	0	0	0	56	72	80	82	104	1134	1528
PB 2013 Total	0	0	0	56	72	80	82	90	1148	1528
Delta	0	0	0	0	0	0	0	14	-14	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	--	--	--	--	--	--	400.9
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**3165.1**

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	--	--	--	--	--	--	280.0
2009	--	--	--	--	--	--	370.3
2010	--	--	--	--	--	--	431.3
2011	--	--	--	--	--	--	379.9
2012	--	--	--	--	--	--	312.1
2013	--	--	--	--	--	--	323.9
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**2745.9**

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	--	--	--	--	--	--	56.0
2011	--	--	--	--	--	--	102.4
2012	--	--	--	--	--	--	71.2
2013	--	--	--	--	--	--	30.4
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**701.0**

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	--	--	--	12.9	12.9	--	12.9
2014	56	472.3	--	--	472.3	68.1	540.4
2015	72	486.5	--	--	486.5	54.0	540.5
2016	80	505.9	--	--	505.9	53.7	559.6
2017	82	512.3	--	--	512.3	54.5	566.8
2018	104	592.3	--	--	592.3	62.9	655.2
2019	108	502.4	--	--	502.4	34.4	536.8
2020	108	507.4	--	--	507.4	34.3	541.7
2021	108	512.5	--	--	512.5	35.7	548.2
2022	108	517.5	--	--	517.5	35.7	553.2
2023	108	522.5	--	--	522.5	35.6	558.1
2024	108	527.5	--	--	527.5	35.5	563.0
2025	108	532.6	--	--	532.6	35.4	568.0
2026	108	537.6	--	--	537.6	35.3	572.9
2027	108	542.6	--	--	542.6	33.6	576.2
2028	108	547.6	--	--	547.6	33.5	581.1
2029	54	276.3	--	--	276.3	33.4	309.7
2030	--	--	--	--	--	11.2	11.2
2031	--	--	--	--	--	11.1	11.1
Subtotal	**1528**	**8095.8**	**--**	**87.9**	**8183.7**	**697.9**	**8881.6**

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	--	--	--	61.3	61.3	--	61.3
2013	--	--	--	10.2	10.2	--	10.2
2014	56	369.7	--	--	369.7	53.3	423.0
2015	72	373.7	--	--	373.7	41.4	415.1
2016	80	381.3	--	--	381.3	40.5	421.8
2017	82	378.9	--	--	378.9	40.4	419.3
2018	104	430.0	--	--	430.0	45.6	475.6
2019	108	357.9	--	--	357.9	24.5	382.4
2020	108	354.7	--	--	354.7	24.0	378.7
2021	108	351.6	--	--	351.6	24.5	376.1
2022	108	348.4	--	--	348.4	24.0	372.4
2023	108	345.2	--	--	345.2	23.5	368.7
2024	108	342.0	--	--	342.0	23.0	365.0
2025	108	338.9	--	--	338.9	22.5	361.4
2026	108	335.7	--	--	335.7	22.0	357.7
2027	108	332.5	--	--	332.5	20.6	353.1
2028	108	329.3	--	--	329.3	20.2	349.5
2029	54	163.1	--	--	163.1	19.7	182.8
2030	--	--	--	--	--	6.5	6.5
2031	--	--	--	--	--	6.3	6.3
Subtotal	**1528**	**5532.9**	**--**	**71.5**	**5604.4**	**482.5**	**6086.9**

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 memo
Start Year	2013	
End Year	2016	

The Defense Acquisition Executive (DAE) approved Low Rate Initial Production (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 (MFCR); 8 Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) Tactical Operations Centers (TOC); 12 Lightweight Launchers; and 6 Launcher Reloaders. The LRIP quantities are the minimum required to conduct testing and evaluate performance before Full Rate Production. The Fire Unit quantities represent the collection of the unique MEIs into operational units. Therefore, Fire Unit LRIP quantity based on the approved MEI LRIP quantities is 7 Fire Units.

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 LRIP data, while relevant for historical reference, is no longer valid for the December 2012 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 Cost

Fire Unit
None

Missile
None

Unit Cost

Fire Unit

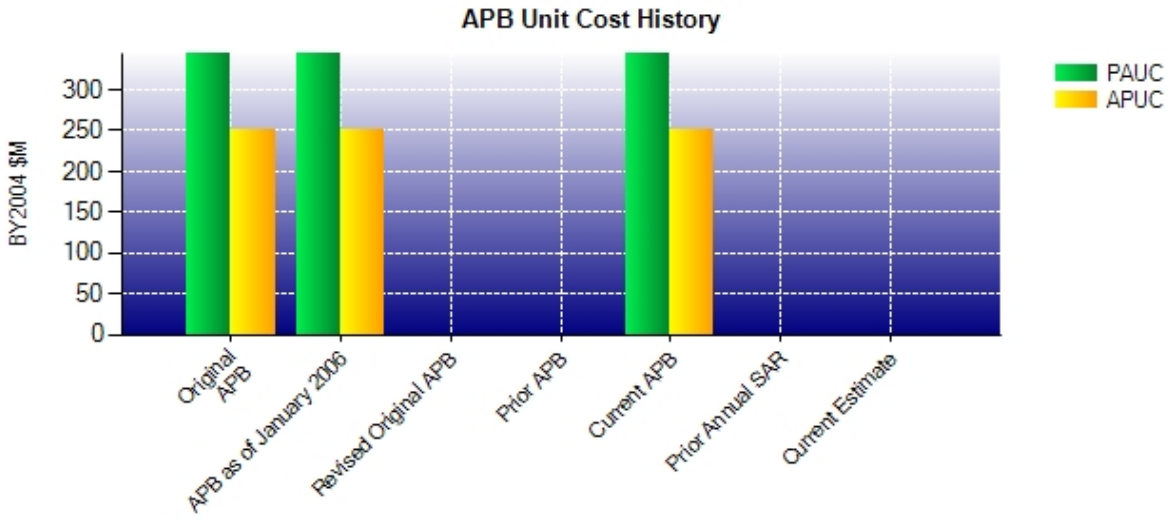
Unit Cost Report

	BY2004 $M	BY2004 $M	
Unit Cost	**Current UCR Baseline (AUG 2004 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	16530.5	2745.9	
Quantity	48	0	
Unit Cost	344.385	--	--
Average Procurement Unit Cost (APUC)			
Cost	11999.1	0.0	
Quantity	48	0	
Unit Cost	249.981	--	--

	BY2004 $M	BY2004 $M	
Unit Cost	**Original UCR Baseline (AUG 2004 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	16530.5	2745.9	
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 2011	N/A	N/A	N/A	N/A
Current Estimate	DEC 2012	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	3165.1
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 (IAMD) Acquisition Strategy. The PATRIOT/MEADS CAP 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.

Missile

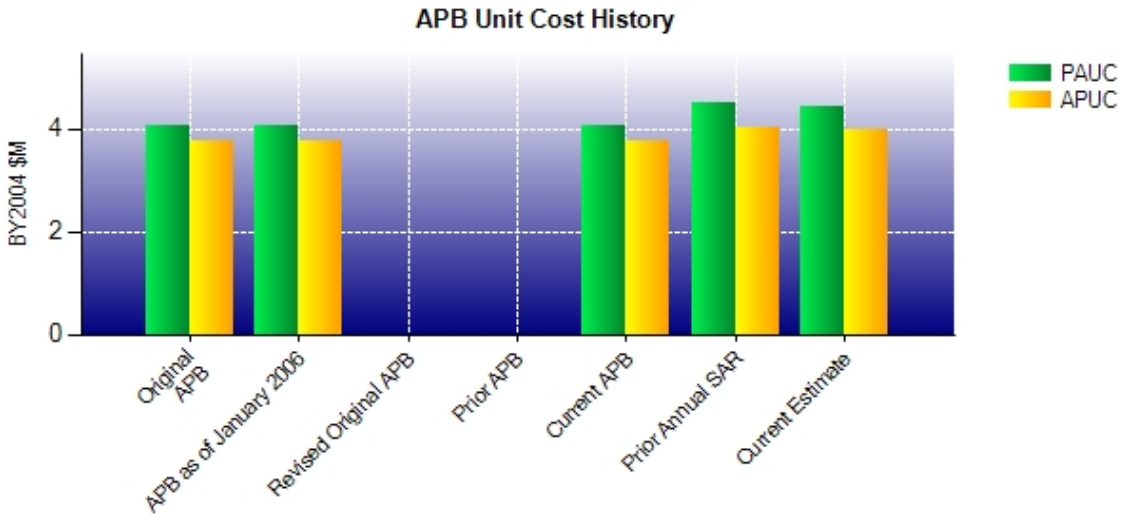
Unit Cost Report

Unit Cost	BY2004 $M Current UCR Baseline (AUG 2004 APB)	BY2004 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	6220.9	6787.9	
Quantity	1528	1528	
Unit Cost	4.071	4.442	+9.11
Average Procurement Unit Cost (APUC)			
Cost	5760.0	6086.9	
Quantity	1528	1528	
Unit Cost	3.770	3.984	+5.68

Unit Cost	BY2004 $M Original UCR Baseline (AUG 2004 APB)	BY2004 $M Current Estimate (DEC 2012 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	6220.9	6787.9	
Quantity	1528	1528	
Unit Cost	4.071	4.442	+9.11
Average Procurement Unit Cost (APUC)			
Cost	5760.0	6086.9	
Quantity	1528	1528	
Unit Cost	3.770	3.984	+5.68

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 2011	4.496	4.035	6.397	5.881
Current Estimate	DEC 2012	4.442	3.984	6.327	5.813

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	0.225	0.000	0.416	0.000	0.406	0.000	0.008	1.055	6.327

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	0.213	0.000	0.415	0.000	0.219	0.000	0.008	0.855	5.813

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	9666.9
Total Quantity	N/A	1528	N/A	1528
Prog. Acq. Unit Cost (PAUC)	N/A	5.272	N/A	6.327

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	+123.5	-193.6	--	-70.1
Quantity	--	-12555.5	--	-12555.5
Schedule	--	-86.5	--	-86.5
Engineering	--	--	--	--
Estimating	-2201.4	-706.7	--	-2908.1
Other	--	--	--	--
Support	--	-3042.1	--	-3042.1
Subtotal	-2077.9	-16584.4	--	-18662.3
Current Changes				
Economic	+3.7	--	--	+3.7
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-15.7	--	--	-15.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-12.0	--	--	-12.0
Total Changes	-2089.9	-16584.4	--	-18674.3
CE - Cost Variance	3165.1	--	--	3165.1
CE - Cost & Funding	3165.1	--	--	3165.1

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	-1772.6	-795.4	--	-2568.0
Other	--	--	--	--
Support	--	-2180.2	--	-2180.2
Subtotal	-1772.6	-11999.1	--	-13771.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-12.9	--	--	-12.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-12.9	--	--	-12.9
Total Changes	-1785.5	-11999.1	--	-13784.6
CE - Cost Variance	2745.9	--	--	2745.9
CE - Cost & Funding	2745.9	--	--	2745.9

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+3.7
Congressional reduction in FY 2012. (Estimating)	-9.9	-12.0
Adjustment for current and prior escalation. (Estimating)	-3.0	-3.7
RDT&E Subtotal	-12.9	-12.0

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	+17.9	+182.6	--	+200.5
Quantity	--	--	--	--
Schedule	--	+764.3	--	+764.3
Engineering	--	--	--	--
Estimating	+288.3	+411.8	--	+700.1
Other	--	--	--	--
Support	--	+54.2	--	+54.2
Subtotal	+306.2	+1412.9	--	+1719.1
Current Changes				
Economic	+0.6	+143.3	--	+143.9
Quantity	--	--	--	--
Schedule	--	-129.5	--	-129.5
Engineering	--	--	--	--
Estimating	-3.5	-76.6	--	-80.1
Other	--	--	--	--
Support	--	-42.5	--	-42.5
Subtotal	-2.9	-105.3	--	-108.2
Total Changes	+303.3	+1307.6	--	+1610.9
CE - Cost Variance	785.3	8881.6	--	9666.9
CE - Cost & Funding	785.3	8881.6	--	9666.9

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	+243.0	+361.0	--	+604.0
Other	--	--	--	--
Support	--	-3.9	--	-3.9
Subtotal	+243.0	+405.7	--	+648.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-2.9	-58.1	--	-61.0
Other	--	--	--	--
Support	--	-20.7	--	-20.7
Subtotal	-2.9	-78.8	--	-81.7
Total Changes	+240.1	+326.9	--	+567.0
CE - Cost Variance	701.0	6086.9	--	6787.9
CE - Cost & Funding	701.0	6086.9	--	6787.9

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+0.6
Congressional reduction in FY 2012. (Estimating)	-2.4	-2.9
Adjustment for current and prior escalation. (Estimating)	-0.5	-0.6
RDT&E Subtotal	-2.9	-2.9

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+143.3
Acceleration of the procurement buy profile between FY 2018 and FY 2029. (Schedule)	0.0	-129.5
Adjustment for current and prior escalation. (Estimating)	-0.5	-0.7
Revision of cost estimate to reflect change in procurement buy profile. (Estimating)	-57.6	-75.9
Decrease in Other Support due to change in procurement buy profile. (Support)	-20.7	-42.5
Procurement Subtotal	-78.8	-105.3

Contracts

Appropriation: RDT&E	
Contract Name	**Design & Development**
Contractor	MEADS Internationl 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	3619.7	N/A	0	3619.7	3619.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2013)	+29.9	-15.3
Previous Cumulative Variances	+5.6	-1.1
Net Change	+24.3	-14.2

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to performance in major functional areas as follows: Certified Missile Round actual rate reductions realized in closed work packages, less than planned engineering support, Flight Test-1 test plan complexity less than originally planned; launcher efficiencies in hardware delivery, and successful testing of launcher hardware; Systems Engineering and Integration Team less than planned cost due to travel reductions and successful completion of Flight Test-1; Program Management savings in reduced travel requirements and efficiencies in manpower costs.

The unfavorable net change in the schedule variance is due to performance in major functional areas as follows: Certified Missile Round delays in hardware deliveries and late receipt of solid rocket motor and canister components; Systems Engineering and Integration Team integration effort delays, manpower availability and support issue delays, and milestones missed due to preparation for Flight Test -1.

Contract Comments

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.

The NATO 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 (EADS), MBDA-Lenkflugkorpersysteme (LFK) in Germany, and Lockheed Martin 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.

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	50.8	51.6

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/24/2013)	+1.2	-1.4
Previous Cumulative Variances	+2.4	-7.9
Net Change	-1.2	+6.5

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to unforeseen New Mexico state tax for conducting tests on White Sands Missile Range and additional cost to extend the period of performance to August 31, 2013. Additional unfavorable variances are due to support needed for flight test 7-4, Zombie flight software, and MSE specification closeout.

The favorable net change in the schedule variance is due to re-scheduling the flight tests and conducting a successful 7-4 flight test on December 6, 2012.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to unforeseen New Mexico state tax for conducting tests on the White Sands Missile Range and additional cost to extend the period of performance from December 31, 2012, to August 31, 2013.

The purpose of this effort is to conduct two flight test campaigns to intercept two Tactical Ballistic Missile (TBM) and one Air Breathing Threat (ABT) PATRIOT representative targets. The contractor shall provide and utilize five PAC-3 Missile Segment Enhancement (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	68.4	68.6

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/24/2013)	+0.1	+0.2
Previous Cumulative Variances	--	--
Net Change	+0.1	+0.2

Cost And Schedule Variance Explanations

The favorable cumulative cost variance is due to workload requirements in other efforts that did not allow the transition of all planned team members to this program.

The favorable cumulative schedule variance is due to adjustments made after the sub-contractor, Aerojet, definitization.

Contract Comments

This is the first time this contract is being reported.

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 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

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	3165.1	Years Appropriated	10
Expenditures To Date	2468.3	Percent Years Appropriated	100.00%
Percent Expended	77.98%	Appropriated to Date	3165.1
Total Funding Years	10	Percent Appropriated	100.00%

The above data is current as of 3/29/2013.

Missile

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	0	0	0	--
Production	0	0	1528	0.00%
Total Program Quantities Delivered	0	0	1528	0.00%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	9666.9	Years Appropriated	10
Expenditures To Date	611.3	Percent Years Appropriated	35.71%
Percent Expended	6.32%	Appropriated to Date	873.2
Total Funding Years	28	Percent Appropriated	9.03%

The above data is current as of 3/29/2013.

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 to be funded through FY 2013. The FY 2014 President's Budget includes FY 2013 funding, which will be the final year of the MEADS Demonstration of Capabilities and brings the MEADS development program to a close by the end of FY 2014.

Therefore, since this program will not go into production and fielding, there are no Fire Unit Operatng and Support (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	0
Unit Operations	0	0
Maintenance	0	0
Sustaining Support	0	0
Continuing System Improvements	0	0
Indirect Support	0	0
Other	0	0
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 to be determined.

Missile

Assumptions and Ground Rules

Cost Estimate Reference:

The Production Missile Segment Enchancement (MSE) Operating and Support (O&S) cost estimate was established in the 2004 Acquisition Program Baseline (APB) in support of the PATRIOT/MEADS CAP Milestone B decision.

The current O&S cost estimate for the MSE missile subprogram has been updated since the December 2011 SAR to reflect the program procurement quantity current estimate. The estimate was completed in Automated Cost Estimating-Integrated Tools (ACEIT), the approved life cycle cost estimating software for the Army. The O&S estimate covers a life cycle of 44 years, FY 2016 through FY 2060, and includes cost to support the 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 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 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	0.0	0.0
Unit Operations	0.0	0.0
Maintenance	50.7	0.0
Sustaining Support	5.5	0.0
Continuing System Improvements	7.2	0.0
Indirect Support	13.3	0.0
Other	0.0	0.0
Total	76.7	--

Unitized Cost Comments:

Unitized costs are calculated based on total O&S current cost estimate of $3,373.9M (BY 2004) distributed over planned service life of 44 years. The Unitized Annual O&S Cost reflects O&S for total inventory/year of 1,528 missiles.

	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

The disposal costs are to be determined.