

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration			PE NUMBER AND TITLE 0604□6□A - Patriot/MEADS Combined						PROJECT M06	
			Aggregate Program (CAP)							
COST (In Thousands)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Cost to	Total Cost
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	
M06 PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	0	0	288785	326352	454511	510672	510389	490441	0	2581150

A. Mission Description and Budget Item Justification: The Combined Aggregate Program (CAP) is the process by which the Patriot system transitions to the Medium Extended Air Defense Systems (MEADS). The MEADS mission is to provide low-to-medium altitude air and missile defense (AMD) with the capability to counter, defeat, or destroy tactical ballistic missiles (TBMs), air breathing threats (ABTs) to include cruise missiles (CMs), unmanned aerial vehicles (UAVs), tactical air-to-surface missiles (TASMs), and anti-radiation missiles (ARMs). Patriot currently provides a significant capability against these threats; however, as the system continues to age, maintaining the system will become more costly as the system components become obsolete and difficult to acquire and maintain.

MEADS will be interoperable with other airborne, ground-based, and sea-based sensors, and will provide 360-degree coverage with improved seeker/sensor components. MEADS will provide air and missile defense of vital unit of employment and unit of action assets associated with Army and Marine Corps maneuver forces. MEADS will provide forces with defense against multiple and simultaneous attacks and will have a netted distributed architecture with modular components to increase survivability and flexibility of employment in a number of operational configurations. MEADS will offer tactical mobility via C-130 and helicopter transport that is not possible with Patriot. In addition, MEADS requirements for strategic lift are significantly reduced due to the use of smaller and lighter weight end items.

MEADS consists of the following Major End Items (MEI's): Patriot Advanced Capability (PAC)-3 Missile and Missile Segment Enhancement (MSE); Battle Management Command, Control, Communications, Computers, and Intelligence (BMC4I) Tactical Operations Center (TOC); Surveillance Radar (SR); Multi-Function Fire Control Radar (MFCR); Launcher; and Launcher Reloader.

The CAP strategy will achieve MEADS objective capability through an evolutionary approach by incrementally inserting MEADS MEIs into the current Patriot force. The MEIs will be developed and fielded in three acquisition increments.

MEADS is a tri-national co-development program among the U.S., Germany, and Italy to replace the U.S. Patriot air defense systems, Patriot and HAWK systems in Germany, and NIKE Hercules systems in Italy. Participating countries will sign a Memorandum of Understanding (MOU) for each successive program phase. The North Atlantic Treaty Organization (NATO) MEADS Management Agency (NAMEADSMA) is the NATO contract authority providing management of the MEADS program on behalf of the participating nations of the U.S., Italy, and Germany and is responsible for managing the system acquisition. The U.S. and Italy signed the Design and Development (D&D) MOU on September 24, 2004, and September 27, 2004, respectively.

Contract efforts are planned with the MEADS and Patriot major systems contractors for the SDD phase of the CAP.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□6□A - Patriot/MEADS Combined
Aggregate Program (CAP)

PROJECT
M06

MEADS International (MI) will continue to develop the core objective MEADS system for all three countries. The D&D contract objective is to design, develop, test and evaluate production representative MEADS hardware. The D&D contract is an international contract awarded and administered by NAMEADSMA. The D&D letter contract was awarded on September 28, 2004, at a not-to-exceed value of \$3.4B.

As a result of a delay in Germany's political process until early 2005, NAMEADSMA entered into the D&D letter contract with MI that covers the entire D&D effort and allows incremental funding. This provision allows the U.S. and Italy to obligate funds and permits Germany to enter into the D&D phase by March 2005. The risk to the U.S. and Italy during this first increment is limited to the amount of U.S. and Italy's CY 2004 and CY 2005 funding. The contract allows the U.S. and Italy to terminate the contract or to restructure the program with U.S. and Italian funds if Germany does not commit to the D&D phase.

The Patriot Advanced Capability (PAC)-3 Missile Segment Enhancement (MSE) contract was awarded as a letter contract to Lockheed Martin Missiles and Fire Control (LMMFC) on June 27, 2003, at a not-to-exceed amount of \$260M. The MSE improves upon the current PAC-3 missile capability with a higher performance solid rocket motor, modified lethality enhancer, more responsive control surfaces, upgraded guidance software, and insensitive munitions improvements. At the completion of the development effort, the change to the missile will be incorporated into production currently planned for FY2010.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue the U.S. contribution to the North Atlantic Treaty Organization (NATO) MEADS Management Agency (NAMEADSMA) International Program Office operational and management budgets to manage the Design and Development (D&D) Phase contract to design, develop, build, test and evaluate the production representative MEADS hardware. FY05 and FY06 efforts will develop the BMC4I to support Increment 1 testing in FY07 with initial production in FY08 and subsequent fielding to be completed in FY10.	0	0	143755	170800
Implement program integration efforts that will examine Department of Defense (DOD) Joint Vision and Army Transformation Future Force mix and integration issues; support Patriot / MEADS CAP in the test and evaluation of Air and Missile Defense (AMD) task force interoperability and Army System-of-Systems (in a netted and distributed architecture); support development and maintenance of Joint Data Network interface requirements; and appropriate planning of MEADS manpower, training, human factors, safety issues, cost reduction initiatives, and protection of U.S. background technology.	0	0	49930	58852
Continue management, support and salaries for the national and international program offices.	0	0	5100	6700
Continued single canister and engage on remote development. Includes efforts to support Missile Segment Enhancement.	0	0	90000	90000

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY 5 - System Development and Demonstration	PE NUMBER AND TITLE 0604□6□A - Patriot/MEADS Combined Aggregate Program (CAP)	PROJECT M06
--	---	-----------------------

Accomplishments/Planned Program B(continued)	FY 2004	FY 2005	FY 2006	FY 2007
Totals	0	0	288785	326352

<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget	0	0	0
Current Budget (FY 2006/2007 PB)	0	288785	326352
Total Adjustments	0	288785	326352
Net of Program/Database Changes			
Congressional program reductions			
Congressional rescissions			
Congressional increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		288785	326352

The Army adjusted funding as directed by a Defense Acquisition Board (DAB) Acquisition Decision Memorandum (ADM) in order to fully fund the Patriot/MEADS Combined Aggregate Program to the Office of the Secretary of Defense (OSD) Cost Analysis Improvement Group (CAIG) estimate. Army adjusted budget to meet this requirement.

FY04 funding displayed in PE 0604865 PAC-3 and 0603869A MEADS. FY05 funding displayed in PE 0603869A MEADS.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□6□A - Patriot/MEADS Combined
Aggregate Program (CAP)

PROJECT
M06

C. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
PE 0604865A, PAC-3	151318	61482	0	0	0	0	0	0	0	212800
PE 0203801, Patriot Product Improvement	45587	32082	16188	10607	10884	11119	12029	12520	Continue	Continue
SSN C49100, PAC-3 Missile	616942	487364	489700	494754	466004	471770	0	0	0	3026534
SSN C50001, Patriot/MEADS CAP	0	0	0	0	88425	64338	423209	663557	22957360	24196889
PE 0102419, JLENS	57803	79316	106420	256893	471997	332428	0	0	0	1304857
SSN BZ0525, OPA, JLENS	0	0	0	0	0	29153	549707	397776	0	976636
PE 0604082, Project S23 SLAMRAAM	36103	63111	36102	29200	0	0	0	0	0	164516
SSN C81001, SLAMRAAM	7397	2440	19315	21970	59273	13124	0	0	0	123519
PE 0604820, SENTINEL	0	5851	5080	2547	2647	0	0	0	0	16125
SSN WK5057, OPA, SENTINEL	20646	7337	8393	15373	25074	31572	34473	32552	0	175420
PE 0603327, Project E88, Integrated Fire	40275	0	24961	42736	48894	50930	0	0	0	207796

C. Other Program Funding Summary: PAC-3 / MEADS CAP RDTE funding are combined and under PE0604869A in FY06 and beyond. This PE is an integral part of the Air, Space and Missile Defense System of Systems (SoS) including Integrated Fire Control (IFC), JLENS, Patriot/MEADS Combined Aggregate Program (CAP), SLAMRAAM, JTAGS, SENTINEL and on-going initiatives to achieve Single Integrated Air Picture (SIAP).

D. Acquisition Strategy: The Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) issued guidance to the Army in the Acquisition Decision Memorandum (ADM) dated December 2, 2002, to develop a plan for combining management, development, and fielding of Patriot and MEADS. The Defense Acquisition Board (DAB) convened on April 7, July 29, and December 17, 2003, to review the Army's plans to integrate Patriot and MEADS capability. A Milestone B DAB review was conducted on July 1, 2004, to decide on the Army's request for entry into System Development and Demonstration (SDD). The DAB approved the Army's Patriot/MEADS CAP request and USD (AT&L) signed the ADM on August 6, 2004, approving Milestone B for all three increments of CAP with a First Unit Equipped date of FY2015. The Acquisition Program Baseline (APB) and Acquisition Strategy were also approved for SDD. The U.S. and Italy signed the Design and Development (D&D) Memorandum of Understanding (MOU) on September 24, 2004 and September 28, 2004, respectively. Germany is expected to sign by 2QFY05 after the German Parliament approves the program. NAMEADSMA, the NATO contracting authority, awarded a MEADS D&D letter contract to MEADS International (MI) on September 28, 2004. The D&D letter contract definitization process is on going.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)**February 2005**

BUDGET ACTIVITY

5 - System Development and Demonstration

PE NUMBER AND TITLE

**0604□6□A - Patriot/MEADS Combined
Aggregate Program (CAP)**

PROJECT

M06

Under the CAP acquisition strategy, as MEADS MEIs demonstrate maturity, a Milestone C decision review will be conducted for entry into production. The MEADS MEIs will be developed and fielded in three acquisition increments that integrate with and are in support of PEO Missiles and Space and Joint System of Systems (SoS) capabilities. Acquisition Increment 1 integrates the emerging MEADS BMC4I capability with Patriot battalions. Acquisition Increment 2 fields the lightweight launcher and MSE. Acquisition Increment 3 fields the Surveillance Radars and Multi-Function Fire Control Radars, and delivers the MEADS objective capability. For the SoS, the MEADS objective capability fully synergizes the interoperability and joint functionality between sensors, shooters, and BMC4I components, which addresses current Service-centric system shortfalls and provides enhanced capability through expanded engagement battlespaces and increased force protection. This incremental approach will maintain the current Patriot capability to protect the forces during the incremental transformation to MEADS. Entrance criteria have been established for the MEIs to enter Low Rate Initial Production (LRIP) and Full Rate Production (FRP). MEADS performance objectives established in the International Common Operational Requirements (ICOR) document and Capability Development Document (CDD) will be assessed during MEADS system testing, which includes developmental flight testing and Initial Operational Test and Evaluation (IOT&E).

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□6□A - Patriot/MEADS Combined Aggregate
Program (CAP)

PROJECT
M06

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Design and Development	CPIF	NAMEADSMA, Huntsville, AL	0	0		122000	2-3Q	143500	2-3Q	Continue	265500	0
b . Missile Segment Enhancement - LMMFC	SS-CPIF	LMMFC, Dallas, TX	0	0		60000	1-2Q	49500	1-2Q	Continue	109500	0
c . Missile Segment Enhancement - Raytheon	SS-FP	Raytheon, Boston, MA	0	0		8000	1-2Q	11000	1-2Q	Continue	19000	0
d . Program Integration	Various	Various, Huntsville, AL	0	0		28060	1Q	33282	1Q	Continue	61342	0
e . U.S. Only Security	MIPR	Lockheed Martin, Sycracuse, NY, Dallas, TX & Orlando, FL	0	0		2750	1-2Q	2750	1-2Q	Continue	5500	0
f . U. S. OGA's	MIPR	Various, Huntsville, AL	0	0		3390	2-3Q	3740	2-3Q	Continue	7130	0
g . In-House	Program Office	PO, Huntsville, AL	0	0		7200	2-3Q	8600	2-3Q	Continue	15800	0
h . U.S. Only Combined Aggregate Program (CAP)	Various	Various, Huntsville, AL & Dallas, TX	0	0		19655	2-3Q	25000	2-3Q	Continue	44655	0
Subtotal:			0	0		251055		277372		Continue	528427	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□6□A - Patriot/MEADS Combined Aggregate
Program (CAP)

PROJECT
M06

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Int'l Program Office	Program Office	NAMEADSMA, Huntsville, AL	0	0		2100	2Q	2300	2Q	Continue	4400	0
b . U.S. Contracts	Various	CAS, Huntsville, AL	0	0		5530	2Q	5980	2Q	Continue	11510	0
c . Systems Engineering	MIPR	MRDEC, Huntsville, AL	0	0		7500	2Q	10000	2Q	Continue	17500	0
Subtotal:			0	0		15130		18280		Continue	33410	0

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Range Support	MIPR	WSMR, White Sands, NM	0	0		5500	1Q	7000	1Q	Continue	12500	0
b . Targets	MIPR	SMDC, Huntsville, AL	0	0		8000	1Q	10000	1Q	Continue	18000	0
c . Mod & Sim	MIPR	Huntsville, AL	0	0		4000	1Q	7000	1Q	Continue	11000	0
Subtotal:			0	0		17500		24000		Continue	41500	0

ARMY RDT&E COST ANALYSIS(R3)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□6□A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT
M06

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Internal Operating	LOE	NAMEADSMA, Huntsville, AL	0	0		5100	2-3Q	6700	2-3Q	Continue	11800	0
Subtotal:			0	0		5100		6700		Continue	11800	0
Project Total Cost:			0	0		288785		326352		Continue	615137	0

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□6□A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT
M06

Event Name	FY 04				FY 05				FY 06				FY 0□				FY 0□				FY 0□				FY 10				FY 11			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RISK REDUCTION EFFORT	RRE																															
Missile Segment Enhancement (MSE) Development (CAP Funded)	MSE DEVELOPMENT																															
RRE MODIFICATION	RREM																															
(1) MS B		▲1																														
(2) ADM			▲2																													
DESIGN AND DEVELOPMENT	DESIGN AND DEVELOPMENT																															
(3) Program Decision (GE Signature)							▲3																									
(4) SRR								▲4																								
(5) MEADS System PDR: Preliminary Design Review																▲5																
MSE LRIP - Long Lead																																
(6) MEADS System CDR: Critical Design Review																																▲6
(7) MSE LRIP Contract Award																																▲
MSE LRIP																																MSE LRIP

Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY
5 - System Development and Demonstration

PE NUMBER AND TITLE
0604□6□A - Patriot/MEADS Combined Aggregate Program (CAP)

PROJECT
M06

<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestone B	4Q							
Acquisition Decision Memorandum (ADM)	4Q							
U.S. & Italy Program Decision (MOU Signatures)	4Q							
Design and Development Phase Contract Award	4Q							
Program Decision (Germany Signature)		2Q						
System Requirement Review		3Q						
System Preliminary Design Review (PDR)				3Q				
MSE LRIP - Long Lead Items						1Q		
System Critical Design Review (CDR)							1Q	
MSE LRIP Contract Award							1Q	
MSE LRIP							1Q	