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<b>BMDO RDT&amp;E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)</b>	DATE <b>February 1999</b>
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<b>BUDGET ACTIVITY</b> <b>4 - Demonstration and Validation</b>	<b>PE NUMBER AND TITLE</b> <b>0603869C MEADS - DEM/VAL (PD-V)</b>	<b>PROJECT</b> <b>1262</b>
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COST <i>(In Thousands)</i>	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
1262 Medium Extended Air Defense System (MEADS)	49728	9915	48597	63568	34164	0	0	0	0	205972

**A. Mission Description and Budget Item Justification**

The Medium Extended Air Defense System (MEADS) has been extensively restructured. The revised program will develop, test and potentially certify advances in air and missile defense for the Corps level maneuver forces and deliver a prototype system. The revised program is still envisioned as an international cooperative effort to share overall program costs, enable coalition warfare and promote interoperability among US, German, and Italian forces. There remains a critical void in the development of defense against the threat to our maneuver forces from low-to-medium altitude advanced aircraft and theater ballistic missiles. This effort will continue to explore opportunities to develop new technologies, components, or updated components and systems to meet this challenge. Early efforts should include the initial development of items such as launchers and radar systems to be incorporated into, or serve as adjuncts to, existing air defense systems. Concepts will be validated through a proof of principle method capitalizing on the already programmed Air Directed Surface to Air Missile (ADSAM) demo efforts. Use of the PAC-3 missile will be the baseline interceptor considered for the effort. The THAAD Family of Systems ground based radar along with other in-theater sensors (e.g., JLENS) will also be examined to fulfill the surveillance function. The existing THAAD Tactical Operation Center (TOC) and the associated battle management system will also be transferred into the program to reduce development cost and speed the proof of principle activity. Some technology effort will be dedicated to a fire control radar to satisfy the mobility, strategic deployability, and interoperability requirements. Improvements will be balanced against costs along with the projected evolving threat to prevent an erosion in the capability of the US and our allies to continue to meet the near term threats. The early efforts will focus on studies and analyses to determine trades between requirements and costs. Results from previous and ongoing programs (such as MEADS, PAC-3, ADSAM, NADS, AMRAAM, and FAADS/Sentinel, among others) will be used in these efforts. This approach includes prototyping of system specific and surrogate hardware and software in key areas of surveillance and fire control radar, vertical launch launcher, missile subelements (such as a seeker) and TOC. CAIV analysis will be applied to the currently defined requirements. Top level guidance is provided by the Ballistic Missile Defense Organization and the executing agent is the Air and Missile Defense Program Executive Office. The goal of this program is to advance such improvements to mobile missile and air defense to develop affordable solutions to the MEADS requirements.

Several candidate projects have been identified, ranging from developing and demonstrating high mobility launchers for interceptors currently in testing within other programs, to development of more capable sensors and related system elements. Changes to current and evolving systems to improve responsiveness, flexibility and affordability will be considered.

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<b>4 - Demonstration and Validation</b>	<b>0603869C MEADS - DEM/VAL (PD-V)</b>	<b>1262</b>
<b>FY 1998 Accomplishments:</b>		
•	43930 NAMEADSMA continued the MEADS Project Definition-Validation (PD-V) Phase, completed the System Design Review (SDR), and released Invitation to Offerers (ITO) for the Design and Development (D&D) Phase. Includes U.S. share of operational costs (prime and support contractors) and administrative costs (travel, training, supplies, equipment, etc.) for NAMEADSMA.	
•	3181 U. S. support contractors and other government agencies continued to support the MEADS PD-V Phase by conducting assigned tasks for user coordination, modeling/simulation, survivability, data management, cost analysis, security management, threat assessment, environmental, safety, logistics, and independent evaluations of contractor trades and analysis. Also continued Analysis of Alternatives (AoA) effort to determine MEADS effectiveness supporting forced entry/maneuver operations.	
•	2617 U.S. personnel continued to support the MEADS PD-V Phase in accordance with the Memorandum of Understanding (MOU) and to conduct assigned tasks in support of and directly related to both national and international management oversight and review activities, technology transfer and technology assessment efforts, cost estimating, and DAB preparation. Includes U.S. salaries and benefits for NAMEADSMA and the MEADS Product Office.	
Total	49728	
<b>FY 1999 Planned Program:</b>		
•	9915 ADSAM Demonstration	
Total	9915	
<b>FY 2000 Planned Program:</b>		
•	10000 Demonstration studies and trade space analyses to re-examine priority of International Key Performance Parameters (IKPPs).	
•	21500 Tailored major end item prototype development of lightweight launcher and BMC4I.	
•	13597 Leverage existing technology development in the areas of surveillance and fire control radars.	
•	3500 Management Oversight and Support for a reduced combined US and International Program Office. Includes U.S. support contractors and other efforts tied to in house support of executing the replanned program.	
Total	48597	
<b>FY 2001 Planned Program:</b>		
•	7000 Continue studies and trade space analyses to re-examine priority of International Key Performance Parameters (IKPPs). Provide interim report of trade space analysis to focus continued proof of principle activity.	
•	39668 Continue tailored major end item prototype development of lightweight launcher and BMC4I.	
•	10500 Continue leveraging existing technology development in the areas of surveillance and fire control radars.	
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- 2900 Test planning and target procurement to support prototype validation.
  - 3500 Management Oversight and Support to include combined US and International Program Office. Includes support tied to in-house execution of the replanned program.
- Total 63568

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
<b><u>B. Program Change Summary</u></b>				
Previous President's Budget (FY 1999 PB)	46144	43027	0	0
Congressional Adjustments		-33000		
Appropriated Value		10027		
Adjustments to Appropriated Value				
a. Congressional Reductions (FFRDC, Inflation, etc)		-52		
b. OSD Reductions		-60		
c. Emergency Supplemental				
Adjustments to Budget Years Since FY 1999 PB				
Current Budget Submit (FY 2000 / 2001 PB)	49728	9915	48597	63568

**Change Summary Explanation:**

Funding FY 1998 (-1727) Congressional General Reductions; (+3499) Project increased for closeout of PD-V.  
 FY 1999 (-112) Congressional General Reductions.  
 FY 2000 (+ 48597) MEADS Proof of Principle.  
 FY 2001 (+63568) MEADS Proof of Principle.

Schedule: None  
 Technical: None

<b><u>C. Other Program Funding Summary</u></b>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>To</u>	<u>Total</u>
									<u>Compl</u>	<u>Cost</u>
ADSAM - 0603869C		107								
PAC-3 EMD - 0604865C	242690	320842	29141	39119						
NADS EMD - 0604867C	292063	242597	268389	226772	64208	51548	33596	26656		
THAAD DEM/VAL - 0603861C	387260	433922	527871	3519						
THAAD EMD - 0604861C			83755	556178	417530	289197	188652			

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**D. Acquisition Strategy:**

The previous MEADS acquisition strategy was developed based on having two competitive transatlantic industrial teams conduct the PD-V phase in which technology among Germany, Italy and the United States would be leveraged to define the most cost-effective solution to meet the MEADS operational requirements. Contracts to conduct the international industrial teaming and development were awarded in Oct 96 and completed in Dec 98. Deliverables included a total system concept based upon the International Technical Requirements Document, engineering design trades and simulations/modeling. During the PD-V phase, the two international entities submitted proposals to compete for selection as the sole contractor to conduct the D&D and Production phases. This effort is in the process of being novated to support a more streamlined acquisition. Future contracting efforts in FY2000-2001 to acquire prototypes for test and evaluation will be awarded on a competitive basis and will not be restricted to the two previous teams. The MEADS Product Office is also pursuing integration of BMC4I with the Project Manager, Air Defense Command and Control Systems (ADCCS), to take advantage of previous Army developments that can be incorporated into the program.

<b>E. <u>Schedule Profile</u></b>	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
Study & trade space analysis initiated					2 <sup>nd</sup> Qtr					
Study & trade space analysis completed							4th Qtr			
Major end item prototype development initiated					2 <sup>nd</sup> Qtr					
Major end item prototype development completed								4th Qtr		
Test planning & activity begin						2 <sup>nd</sup> Qtr				
Test planning & activity completed								4th Qtr		

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<b>BMDO RDT&amp;E COST ANALYSIS (R-3)</b>											DATE <b>February 1999</b>	
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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. International Teaming	FFP	LM/H&R Teams	9605								9605	
b. Proj Def-Val (PD-V)	FFP	NAMEADSMA	104268								104268	
c. MEADS Alternatives	TBD	TBD				39378		51354		21164	111896	
Subtotal Product Development:			113873			39378		51354		21164	225769	
Remark:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Analysis of Alternatives	LOE/MIPR	BMDO&PEO AMD	2298								2298	
b. Contracts	LOE	BMDO&PEO AMD	3439			3590		4635		4882	16546	
c. Other Govt Agcy	MIPR	BMDO&PEO-AMD	1260			1592		2736		2118	7706	
Subtotal Support Costs:			6997			5182		7371		7000	26550	
Remark:												
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Redstone Tech Test Ctr	MIPR	Huntsville, AL	253			1000		1700		2500	5453	
b. ADSAM	TBD	TBD		7915							7915	
Subtotal Test and Evaluation:			253	7915		1000		1700		2500	13368	
Remark:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Internal Operating and US Govt Salaries	In-House	MEADS Prod Ofc	7233	2000		3037		3143		3500	18913	
Subtotal Management Services:			7233	2000		3037		3143		3500	18913	
Remark:												
Project Total Cost:			128356	9915		48597		63568		34164	284600	
Remark:												
Project 1262												