

BMDO RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							DATE February 2000			
BUDGET ACTIVITY 4 - Demonstration and Validation				PE NUMBER AND TITLE 0603861C THAAD System - DEM/VAL				PROJECT 2260		
COST (In Thousands)		FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
2260	Theater High Altitude Area Defense (THAAD)	431948	523525	0	0	0	0	0	0	4229753

A. Mission Description and Budget Item Justification

The Theater High Altitude Area Defense (THAAD) System is being designed to negate theater ballistic missiles (TBMs) at long ranges and high altitudes. Its long-range intercept capability will make possible the protection of broad areas, dispersed assets, and population centers against TBM attacks. The THAAD System includes missiles, Palletized Load System (PLS) launchers, Battle Management/Command and Control (BM/C2) units, THAAD Radars, and support equipment. The THAAD Radar provides threat early warning, threat type classification, interceptor fire control, external sensor cueing, and launch and impact point estimates for the THAAD System. The THAAD Radar is based on state-of-the-art, solid-state, X-band radar technology. THAAD will be interoperable with both existing and future air defense systems. This netted and distributed BM/C2 architecture provides robust protection against the TBM threat spectrum.

The Program Definition and Risk Reduction (PDRR) program is completing the development of the requirements for the THAAD system and has demonstrated the capabilities of the system in a series of 11 flight tests. The PDRR Hardware, consisting of flight test missiles, 2 THAAD radars, 4 launchers and 2 BM/C2 units have been acquired and delivered and were employed to support the PDRR flight test program and soldier training. The THAAD system design will be developed and tested in the Engineering and Manufacturing Development (EMD) phase leading to low rate initial production and subsequent FUE in FY07.

From FY95 to FY99 the PDRR flight test program was conducted at White Sands Missile Range (WSMR), New Mexico. The flight test schedule consisted of flight and system tests, which began on April 21, 1995 with a successful first flight of the THAAD missile. Eleven flight tests were conducted. The targets for the flight test program were developed under the Tactical Missile Defense Targets contract (Project 3354). Based on successful intercepts on flights 10 and 11 and on previous program achievements, the Undersecretary of Defense for Acquisition, Technology, and Logistics cancelled the remaining PDRR flight tests and directed that the program prepare to enter EMD.

The Department of Defense just completed (December 1999) an extensive review of the THAAD and Navy Theater Wide (NTW) programs. The Department focused on an alternative acquisition approach that provides a phased introduction of capability. Prior to this review, the THAAD program was pursuing a standard acquisition approach to field an objective capability, i.e., define requirements, design and fabricate hardware, conduct ground and flight testing and eventually field a capability that meets threshold operational requirements. In order to better balance requirements, pace the threat, and obtain early capability with reduced risk, an evolutionary approach was proposed. This results in a FUE for an initial configuration (termed C1) in fiscal year 2007. C1 will include the capability to defeat all expected upper tier threats in that timeframe, and will meet the key performance parameters outlined in the Operational Requirements Document (ORD). Sophisticated counter measures and battalion operational software is deferred to the next configuration (termed C2) planned for fielding in the 2011 timeframe.

FY 1999 Accomplishments:

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<ul style="list-style-type: none"> • 300617 Major Contracts: Successfully completed system flight test program and support. Continued the Integrated Risk Mitigation Restructure (IRMR) effort, focusing on Pre-EMD Risk Mitigation activities. Conducted Missile Requirement Review and System Software Review. Conducted Radar Preliminary Design Review, and prepared for the MSII DAB. • 47949 Support Contracts: Continued software independent verification and validation. Continued nuclear environment survivability analysis. Continued hit assessment, discrimination, and guidance, navigation and control algorithm development. Continued hit to kill lethality analysis. Continued integration and support to THAAD flight testing. • 47762 Government Furnished Equipment (GFE)/Other: Continued integration and testing of Joint Tactical Information Distribution System (JTIDS) radios, launch support, BM/C2, weapon system deck model, and simulation efforts. Continued system threat vulnerability assessment. Maintained integrated logistics and product assurance efforts. Provided system engineering support to THAAD flight tests to validate test results with predicted performance simulations. Continued pursuing integration of THAAD BM/C2 with PM, AMDCCS to take advantage of previous Army developments of force operations software. • 19127 In-house support: Funded government salaries and benefits, travel, training, etc. • 9937 Targets: Continued development and delivery of targets to support THAAD flight tests and THAAD Radar system tests. Maintained infrastructure to support TMD targets. • 5198 Lethality Analysis: Continued lethality simulation code validation. • 1358 Operational Test and Evaluation (OT&E): Conducted independent assessment of the THAAD System. 		
Total	431948	
FY 2000 Planned Program:		
<ul style="list-style-type: none"> • 412889 Major Contracts: Complete pre-EMD risk mitigation activities; conduct Launcher PDR; and finalize preparations for the MSII DAB. Initiate Breadboard Fabrication. • 51869 Support Contracts: Continue software independent verification and validation. Continue nuclear environment survivability analysis. Continue hit assessment, discrimination, and guidance, navigation and control algorithm development. Continue hit to kill lethality analysis • 21217 Government Furnished Equipment (GFE)/Other: Continue integration and testing of Joint Tactical Information Distribution System (JTIDS) radios, launch support, BM/C2, weapon system deck model, and simulation efforts. Continue system threat vulnerability assessment. Maintain integrated logistics and product assurance efforts. Provide system engineering support to THAAD test analysis and planning to validate test results with predicted performance simulations. Continue pursuing integration of THAAD BM/C2 with PM, AMDCCS to take advantage of previous Army developments of force operations software. • 19300 In-house support: Funded government salaries and benefits, travel, training, etc. • 6805 Targets: Continue development of targets to support future THAAD flight tests and THAAD Radar system tests. Fund infrastructure to support TMD targets. • 6638 Lethality Analysis: Continue lethality simulation code validation. • 1238 Operational Test and Evaluation (OT&E): Continue independent assessment of the THAAD System. • 3569 White Sands Missile Range (WSMR)/OGA test support planning. 		
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Total 523525

B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (<u>FY 2000 PB</u>)	433922	527871	3519
Congressional Adjustments			
Appropriated Value	445252	527871	
Adjustments to Appropriated Value		-2254	
a. Congressional Reductions (FFRDC, Inflation, etc)	-15986		
b. OSD Reductions			
c. Emergency Supplemental			
d. Internal Reprogramming		-2192	
Adjustments to Budget Years Since <u>FY 2000 PB</u>	2682		-3519
Current Presidents Budget (<u>FY 2001 PB</u>)	431948	523525	0

Change Summary Explanation: FY 00 (-4346) Project funding realigned

C. Other Program Funding Summary	<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 Compl</u>	<u>Total Cost</u>
THAAD EMD- 0604861C	0	79462	549945	685168	789736	755134	591049	TBD	TBD

D. Acquisition Strategy: The THAAD Acquisition Strategy approved for the PDRR phase specified full and open competition for THAAD system integration, missiles, launchers, and BM/C2. The TMD Ground Based Radar (GBR) Acquisition Strategy also specified full and open competition for PDRR. The Concept Definition phase, completed in 1992, involved three contractor teams and defined concepts and preliminary designs for the THAAD System. The THAAD Dem/Val contract was competitively awarded to Lockheed Missiles and Space Company in September 1992. The PDRR program developed a design for the THAAD System. The THAAD Radar PDRR contract was competitively awarded to Raytheon Company in September 1992. The PDRR phase included the development and test of one Dem/Val radar and two UOES radars.

E. Schedule Profile	<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>
Software Specification Review	4Q						
Integrated Risk Mitigation Change Order	2Q						
Integrated System Tests Complete	4Q						
Milestone II		3Q					

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BMDO RDT&E COST ANALYSIS (R-3)

DATE
February 2000

BUDGET ACTIVITY
4 - Demonstration and Validation

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PROJECT
2260

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. LMMS	CPFF/CPAF		2116128	412889		0		0	2529017	2529017
b. Raytheon	CPIF/AF/FF		585612			0		0	585612	585612
Subtotal Product Development:			2701740	412889					3114629	3114629

Remark:

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. SETA	CPAF		164014	24493		0		0	188507	188507
b. Other Spt Cont	Various		292085	27376		0		0	319461	319461
c. OGAs	MIPR		182837	21217		0		0	204054	204054
d. Program Mgmt	Various		120708	19300		0		0	140008	140008
Subtotal Support Costs:			759644	92386					852030	852030

Remark:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. WSMR	MIPR		83226	3569		0		0	86795	86795
b. OT&E			10250	1238		0		0	11488	11488
c. TARGETS			132055	6805		0		0	138860	138860
d. LETHALITY			18545	6638		0		0	25183	25183
Subtotal Test and Evaluation:			244076	18250					262326	262326

Remark:

BMDO RDT&E COST ANALYSIS (R-3)

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BUDGET ACTIVITY **4 - Demonstration and Validation** PE NUMBER AND TITLE **0603861C THAAD System - DEM/VAL** PROJECT **2260**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a.										
b.										
c.										
d.										
e.										
f.										
Subtotal Management Services:										

Remark:

Project Total Cost:			3705460	523525					4228985	4228985
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Remark: