MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

COST (*In Thousands*)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	200119	169974	200171	234318	228443	367744	Continuing	Continuing
2015 Mediuim Extended Air Defense System (MEADS)	0	70507	0	0	0	0	0	Continuing	Continuing
2016 Israeli Arrow Program	0	129612	65749	66000	66000	66000	66000	Continuing	Continuing
2022 Sea-Based Terminal	0	0	90000	120000	154000	148000	284000	Continuing	Continuing
2090 Program Operations	0	0	14225	14171	14318	14443	17744	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Terminal Defense Segment (TDS) program element combined with the THAAD System program element (PE 0604861C) and the PAC-3 program elements (PE 0604865C/PE 0208865C) constitutes the operational Terminal Defense Segment of the Ballistic Missile Defense System (BMDS). This restucture is in direct compliance with Congressional direction.

The primary projects under this Program Element (PE) are the Medium Extended Air Defense System (MEADS) Project and the Israeli Arrow Deployability Program (ADP), and Sea-Based Terminal. Related activities include the Israeli Test Bed (ITB), Arrow System Improvement Program (ASIP), and studies via the Israeli Systems Architecture and Integration (ISA&I) effort that assess the Arrow performance relative to both existing and emerging threats. The MDA Director approves of the TDS capability-based development and selective upgrades of defensive capabilities that engae and negate ballistic missiles in the terminal phase of their trajecvtory.The flow down of Ballistic Missile Defense System (BMDS) capability specifications resulting from Missile Defense National Team Efforts in Battle Management/Command and Control (BM/C^2) and Systems Engineering and Integration will guide the integration of the Terminal Defense Segment into the BMD System, the BMDS BM/C^2 architecture, and the BMDS Test Bed.

The Medium Extended Air Defense System (MEADS) is an objective force system. It is an international cooperative program essential to fulfill the requirements of the U.S. Army and the U.S. Marine Corps for a low-medium air defense system in the 21st century. MEADS will offer a significant improvement in tactical mobility and strategic deployability over comparable missile systems. It will defend the maneuver force and other critical forward-deployed assets against short and medium range Theater Ballistic Missiles (TBMs), cruise missiles and other air-breathing threats throughout all phases of tactical operations. MEADS will operate both in an enclave with upper-tier systems in areas of debarkation and assembly and provide continuous coverage alone or with Short-Range Air Defense Systems (SHORAD) in the division area of the battlefield during movement to contact and decisive operations. MEADS will be interoperable with other airborne and ground-based sensors and utilize a netted and distributed architecture and modularly-configurable battle elements to provide a robust, 360-degree defense against short and medium range TBMs, cruise missiles, unmanned-aerial-vehicles, tactical air to surface missiles, rotary-wing and fixed-wing threats.

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The Arrow system (developed jointly by the U.S. and Israel) provides Israel an indigenous capability to defend against short and medium range ballistic missiles and helps ensure U.S. freedom of action in future contingencies. Arrow also provides protection against ballistic missile attacks to U.S. forces deployed to the region. The Arrow Deployability Program (ADP) supports Israel's acquisition of a third Arrow battery, development of Arrow co-manufacturing capability, and Arrow's interoperability with U.S theater missile defense systems (TMD) via a Joint Tactical Information Data System (JTIDS)/Link-16 common communication architecture. The Arrow System Improvement Program (ASIP) will develop upgrades to the existing Arrow Weapon System to allow Arrow to address more stressing ballistic missile threats. Related activities include the Israeli Test Bed (ITB), and studies via the Israeli Systems Architecture and Integration (ISA&I) effort that assess the Arrow performance relative to both existing and emerging threats. Technologies cooperatively developed under the Arrow programs are transitioned to U.S. TMD developmental programs for their use or to provide risk reduction and lessons learned.

As part of the integrated Ballistic Missile Defense System designed to provide layered defense against ballistic missiles of all ranges, Missile Defense Agency (MDA) has been directed to address the need for a timely development and deployment of sea-based terminal defenses. The mission of the terminal defense layer is to protect the U.S., U.S. forces, U.S. Allies, friends and facilities of vital interest from ballistic missile attack by intercepting ballistic missiles in the final stage of flight. The objective of the Sea Based Terminal defense project is to perform research, development and test and perform experimentation to identify options and alternative approaches to developing a sea based terminal capability as part of the Ballistic Missile Defense System (BMDS).

Program operations funding includes the required personnel and management support. This infrastructure includes items such as: travel; personnel and related facility support costs; statutory and fiscal requirements, and support service contracts.

B. Program Change Summary	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY 2002 PB)		988180	
Appropriated Value			
Adjustments to Appropriated Value		63913	
a. Congressional General Reductions			
b. SBIR / STTR			
c. Omnibus or Other Above Threshold Reductions			
d. Below Threshold Reprogramming			
e. Rescissions			
Adjustments to Budget Years Since FY 2002 PB		-851974	169974
Fiscal Year (FY) 2003 Budget Estimates		200119	169974

Change Summary Explanation: In FY 2002, THAAD and Program Operations projects moved to Program Element 0604861C, and MEADS added to Terminal Defense Segment Program Element. FY 2003 Funding was not included during FY 2002 Amended President's Budget Submission.

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603881C Terminal Defense Segment PROJECT 2015

COST (*In Thousands*)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2015 Mediuim Extended Air Defense System (MEADS)	0	70507	0	0	0	0	0	Continuing	Continuing

Medium Extended Air Defense System (MEADS), to include programmatics and funding, is being transferred to the Army beginning in FY 2003.

A. Mission Description and Budget Item Justification

The Medium Extended Air Defense System (MEADS) is an objective force system. It is an international cooperative program essential to fulfill the requirements of the U.S. Army and the U.S. Marine Corps for a low-medium air defense system in the 21st century. MEADS will offer a significant improvement in tactical mobility and strategic deployability over comparable missile systems. It will defend the maneuver force and other critical forward-deployed assets against short and medium range Theater Ballistic Missiles (TBMs), cruise missiles and other air-breathing threats throughout all phases of tactical operations. MEADS will operate both in an enclave with upper-tier systems in areas of debarkation and assembly and provide continuous coverage alone or with Short-Range Air Defense Systems (SHORAD) systems in the division area of the battlefield during movement to contact and decisive operations. MEADS will be interoperable with other airborne and ground-based sensors and utilize a netted and distributed architecture and modularly-configurable battle elements to provide a robust, 360-degree defense against short and medium range TBMs, cruise missiles, unmanned-aerial-vehicles, tactical air to surface missiles, rotary-wing and fixed-wing threats.

The MEADS program has been restructured to leverage the interceptor from the PATRIOT Advanced Capability-3 (PAC-3) program with a three-year Risk Reduction Effort (RRE) that focuses on developing the critical technologies required for maneuver force protection and overall risk reduction. A U.S. funded bridging effort commenced on 14 August 2000 to begin work on the highest risk and long-lead items in the RRE Scope of Work. The International Memorandum of Understanding (MOU) was signed 27 June 2001, and the RRE contract was awarded 10 July 2001.

There remains a critical void in maneuver force defense against short and medium range TBMs, cruise missiles, and low-to-medium altitude advanced air-breathing threats. This program will meet this challenge by integrating the PAC-3 missile and developing the critical technologies required for maneuver force protection, including development of a prototype lightweight launcher, 360-degree radar and tactical operation center. The PAC-3 missile is the baseline interceptor for MEADS. Sensor and battle management software technology from both U.S. and international programs will be examined to enhance and augment organic-equipment functions, reducing development cost and risk. Improvements will be balanced against costs and the projected threat to develop a U.S. and allied capability to counter the maneuver force threat. The approach emphasizes prototyping of system-specific and surrogate hardware in key areas of Battle Management/Command, Control, Communications, Computers, and Intelligence (BM/C4I), fire control radar, and light weight launcher to satisfy mobility, strategic deployability and interoperability requirements.
The Army requirement for MEADS supports the objective transition path of the Army Transformation Campaign Plan.

FY 2001 Accomplishments:

•	0 Funding for MEADS exists and is provided under Project 1262, Program Element 0603869C.
Total	0

FY 2002 Planned Program:

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603881C Terminal Defense Segment
	PROJECT 2015

- 39320 Continue U.S. contribution to the NATO Medium Extended Air Defense System Management Agency (NAMEADSMA) international Program Office operational and administrative budgets for the MEADS RRE contract and continued development of digital-end-to-end simulation, continue development of prototype launcher, fire control radar and BMC4I hardware/ software and test planning.
- 17517 Conduct program integration efforts that will examine DOD Joint Vision and Army transformation objective force mix and integration issues; support MEADS in the test and evaluation of Air and Missile Defense (AMD) task force interoperability and Army family-of-system requirements; support development and maintenance of Joint Data Network interface requirements and planning and appropriate planning of MEADS manpower, training, human factors and safety issues, modeling and simulation support.
- 7310 Continue funding for government agencies and support contracts to provide technical analysis and tools in specialty areas of lethality, BMC4I and system simulations, as well as support of conducting independent evaluations of contractor trades and analysis.
- 6360 Continue MEADS program management, support and salaries for both the national and international program offices. Includes U.S. efforts tied to national support of executing the replanned program and preparing for the Milestone B review.

Total 70507

FY 2003 Planned Program:

- 0 Funding for this project transfers to the Army beginning FY 2003.

Total 0

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0603869C MEADS	49700								
PE 0604861C THAAD	530432	866530	934681	714679	830204	920988	1131109	Cont	Cont
PE 0604865C PAC-3	81892	128199							
PE 0603875C Int'l Cooperative Program	125805								
PE 0603880C BMD System		807993	1065982	1208546	1157025	1139885	1176979	Cont	Cont
PE 0603882C Midcourse Defense Segment		3762250	3192594	3071581	3016343	2969142	2595708	Cont	Cont
PE 0603883C Boost Defense Segment		599835	796927	1398817	1399902	1591160	2274654	Cont	Cont
PE 0603884C Sensors Segment		335338	373447	489181	1145680	899806	1007660	Cont	Cont
PE 0603175C BMD Technology		139340	121751	155056	130299	142785	147457	Cont	Cont
PE 0603869A MEADS (Army)			117745	280580	272070	277115	281890	Cont	Cont

C. Acquisition Strategy: The MEADS acquisition strategy included competition between two transatlantic industrial teams in the Program Definition/Validation (PD-V) phase. These two international entities prepared and competed for the PD/V phases. As the Department of Defense and partner nations restructured the program, the PD/V phase was extended with the selection of a single contractor team to conduct a three-year RRE. In August 2000, the Defense Acquisition Executive (DAE) approved entry in

the RRE. In this phase, technology from Germany, Italy and the United States, including the PAC-3 missile, will be leveraged to define the most cost-effective solution to meet the MEADS operational requirements. The MEADS Product Office is also pursuing integration of MEADS BMC4I with the Project Manager, Air & Missile Defense Command and Control Systems (AMDCCS), to take advantage of other Army developments that can be incorporated into the MEADS program. Per the 2 January 2002 SECDEF missile defense direction memo, the U.S. national unique requirements of the MEADS program will be developed in consultation with the MDA. The international requirements of the MEADS program will be directed per the International Memorandum of Understanding (MOU) and as modified in the future for international participation in the BMDS. MEADS will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks.

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Component Demonstration Completed		3Q					
Program Review		1-4Q					

MDA RDT&E COST ANALYSIS (R-3)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

PROJECT: 2015

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Risk Reduction	FFP	NAMEADSMA, AL		37930	2Q			Cont	37930	
b. Multiband Spectra Radar Frequency Data Link	CPFF	LMMS, TX		6200	1Q			Cont	6200	
Subtotal Product Development:				44130				Cont	44130	

Remark:

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Int'l Program Office	MIPR	NAMEADSMA, AL		1390	2Q			Cont	1390	
b. Program Integration	MIPR	PEO AMD/ARMY, AL		5617	2Q			Cont	5617	
c. U.S. Contracts	MIPR	MEADS Prod Ofc, AL		2250	2Q			Cont	2250	
d. U.S. OGAs	MIPR	MEADS Prod Ofc, AL		5060	2Q			Cont	5060	
e. Modeling & Simulation	MIPR	MRDEC, AL		5700	2Q			Cont	5700	
Subtotal Support Costs:				20017				Cont	20017	

Remark:

MDA RDT&E COST ANALYSIS (R-3)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

PROJECT: 2015

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. N/A										
Subtotal Test and Evaluation:										

Remark:

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Internal Operating	In-House	MEADS Prod Ofc / NAMEEADSMA, AL		6360	2Q			Cont	6360	
Subtotal Management Services:				6360				Cont	6360	

Remark:

Project Total Cost:				70507					70507	

Remark:

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603881C Terminal Defense Segment PROJECT 2016

COST (*In Thousands*)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2016 Israeli Arrow Program	0	129612	65749	66000	66000	66000	66000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides funding for the Arrow Deployability Program (ADP) to include the third Arrow battery and development activities to produce Arrow components in the United States, Arrow interoperability with U.S. missile defense systems, the Arrow System Improvement Program (ASIP), Israeli Test Bed (ITB), and the Israeli System Architecture and Integration (ISA&I). The United States derives considerable benefits from its participation in these projects. The presence of a ballistic missile defense system in Israel developed under this project helps ensure U.S. freedom of action in future contingencies and provides protection against ballistic missile attacks to U.S. forces deployed to the region. The cooperative effort also provides risk reduction and alternative technologies for U.S. ballistic missile defense programs as well as phenomenology and kill assessment data. The Arrow Deployability Program (ADP) integrates and tests the cooperatively developed Arrow II missile with the Israeli developed ground components. The ADP effort also provides for deployment of a contingency capable User Operational Evaluation System (UOES) and development of Arrow manufacturing capability. The Arrow is interoperable with U.S. missile defense systems through the Link 16 system. The International Agreement (IA) between the U.S. and Israel for the ADP will be amended to provide a final installment of $34 million in FY 2002 to complete U.S. funding of an Arrow third battery. The ASIP effort will evolve the Arrow Weapon System (AWS) to defeat longer range and more robust threats expected to be deployed in the Middle East in the near future. An annex for phase II of ASIP will also be concluded to allow work on ASIP to continue. The Israeli Test Bed and ISA&I efforts will continue to support AWS development as well as develop future missile defense architectures.

FY 2001 Accomplishments:

- 0 Funding for this project exists and is provided under Project 2259, Program Element 0603875C.

Total 0

FY 2002 Planned Program:

- 47000 Arrow System Improvement Program. Initiate ASIP Phase II to develop and test technologies to improve the Arrow Weapon System performance to defeat emerging threats. Acquire targets for U.S. flight testing of Arrow. Continue development of Israeli interoperability capability to include providing Joint Interoperability Test Command assessment of AWS interoperability with U.S. Theater Missile Defense (TMD) systems.
- 77612 Arrow Deployability Program. Develop Arrow Block 3 capability to provide more robust defense against existing Middle East missile threats. Develop capability to produce Arrow missile components in the U.S. Funding includes final U.S. installment of $34 million for Israel's third Arrow battery. The United States will again adjust its ADP cost share to allow Israel to reduce its ADP funding by an equal amount so that it may provide final funding of third battery components.

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603881C Terminal Defense Segment
	PROJECT 2016

- 2500 ITB. Conduct ITB experiments to evaluate Arrow System Improvement Program performance specifications against future threats and assess Arrow interoperability between improved Arrow and U.S. TMD systems. Support United States European Command/Israeli Air Force (USEUCOM/IAF) involvement at the ITB to incorporate experiment results in subsequent revisions to the combined Operations Plan (OPLAN) and Combined Standard Operating Procedures (CSOP).
- 1500 ISA&I. Assess potential contributions by deployed U.S. Theater Missile Defense (TMD) assets to Israel's missile defense. Determine ITB experiment objectives and analyze experiment results. Assess improved Arrow performance against emerging regional threats and identify growth path refinements necessary for the AWS to remain an effective ballistic missile defense for the State of Israel.
- 1000 Program Support. Document foreground and background data rights for ASIP, ITB, ADP, and legacy programs. Develop and maintain security plans and classification guides. Develop test tools for interoperability.

Total 129612

FY 2003 Planned Program:

- 50000 Arrow System Improvement Program. Continue ASIP Phase II to develop and test technologies to improve the Arrow Weapon System performance to defeat emerging threats. Continue Arrow interoperability validation to include assessing combined engagement coordination and providing Joint Interoperability Test Command assessment of AWS interoperability with U.S. TMD systems. Prepare for Arrow testing in U.S.
- 9749 Arrow Deployability Program. Continue development of U.S. production capability for Arrow missile components. Continue development of Arrow interoperability capability to include combined engagement coordination. Complete development of Arrow Block 3 capability to provide more robust defense against existing Middle East missile threats.
- 3000 ITB. Conduct ITB experiments to evaluate Arrow System Improvement Program performance specifications against future threats and assess Arrow interoperability between improved Arrow and U.S. TMD systems. Support USEUCOM/IAF involvement at the ITB to incorporate experiment results in subsequent revisions to the combined OPLAN and CSOP.
- 2000 ISA&I. Initiate assessment and prioritization of options for 2015 Israeli Missile Defense architecture. Determine ITB experiment objectives and analyze experiment results. Define Arrow performance against emerging regional threats and identify growth path refinements necessary for the AWS to remain an effective ballistic missile defense for the State of Israel.
- 1000 Program Support. Continue documentation of foreground and background data rights for ASIP, ITB, and ADP. Develop and maintain security plans and classification guides. Develop test tools for interoperability.

Total 65749

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0604861C THAAD	530432	866530	934681	714679	830204	920988	1131109		
PE 0603875C Int'l Cooperative Program	125805								
PE 0603880C BMD System		807993	1065982	1208546	1157025	1139885	1176979	Cont	Cont
PE 0603882C Midcourse Defense Segment		3762250	3192594	3071581	3016343	2969142	2595708	Cont	Cont

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

PE 0603883C Boost Defense Segment		599835	796927	1398817	1399902	1591160	2274654	Cont	Cont
PE 0603884C Sensors Segment		335338	373447	489181	1145680	899806	1007660	Cont	Cont
PE 0603175C BMD Technology		139340	121751	155056	130299	142785	147457	Cont	Cont

C. Acquisition Strategy:

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
ADP Flight Test	4Q						
ADP final Third Battery Cost Share Adjustment		2Q					
Initiate Co-Manufacturing Development		2Q					
Complete ADP			4Q				
Initiate Co-Manufacturing of Arrow missiles				3Q			
Complete ASIP Feasibility Study		1Q					
Initiate ASIP Phase II		2Q					
Conduct ASIP Flight Tests		4Q	1Q&3Q		1Q&3Q	1Q&3Q	1Q&3Q
Complete ASIP Development						3Q	
U.S. Flight Tests of Arrow				1Q&2Q			
Interoperability Tests w/ U.S. TMDSE		1Q&4Q	1Q&4Q	1Q	3Q	1Q	3Q
Interoperability Field Tests			2Q		2Q		2Q
Interoperability Tests w/ U.S. TMDSE		4Q	3Q	1Q	3Q	1Q	3Q
ITB Experiments		2Q&4Q	2Q&4Q	2Q&4Q	2Q&4Q	2Q&4Q	2Q&4Q
Missile Defense Architecture Assessment		2Q		2Q			
2015 Missile Defense Architecture						2Q	

MDA RDT&E COST ANALYSIS (R-3)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

PROJECT: 2016

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. ADP (Development, Co-Manufacturing, Third Arrow Battery)	International Agreement with Israel	Israel Ministry of Defense, Israel		77612	2Q	9749	1Q	Cont	87361	
b. ISA&I	FFP with Cost Share	Wales, Ltd., Israel		1500	1Q	2000	1Q	Cont	3500	
c. ITB	FFB	USA/SMDC Huntsville, AL		2500	1Q	3000	1Q	Cont	5500	
d. ASIP Development (Israel)	International Agreement with Israel	Israel Ministry of Defense, Israel		21000	2Q	18000	1Q	Cont	39000	
e. ASIP Development (U.S.)	CPAF/FF	MDA Huntsville, AL		6500	1Q	7000	1Q	Cont	13500	
Subtotal Product Development:				109112		39749		Cont	148861	

Remark: Prior Year Funding provided under Project 2259, Program Element 0603875C

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Program Support ADP/ASIP	aLLOT	MDA Huntsville, AL		1000	1Q	1000	1Q	Cont	2000	
Subtotal Support Costs:				1000		1000		Cont	2000	

Remark:

MDA RDT&E COST ANALYSIS (R-3)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

PROJECT: 2016

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Targets and Ranges	MIPR	MDA Huntsville, AL		16500	2Q	6000	1Q	Cont	22500	
b. Test Support	International Agreement with Israel	Israel Ministry of Defense, Israel		3000	2Q	19000	1Q	Cont	22000	
Subtotal Test and Evaluation:				19500		25000		Cont	44500	

Remark: Prior Year Funding provided under Project 2259, Program Element 0603875C

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. N/A										
b.										
Subtotal Management Services:										

Remark:

Project Total Cost:				129612		65749			195361	

Remark:

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603881C Terminal Defense Segment PROJECT 2022

COST (*In Thousands*)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2022 Sea-Based Terminal	0	0	90000	120000	154000	148000	284000	Continuing	Continuing

A. Mission Description and Budget Item Justification

As part of the integrated Ballistic Missile Defense System (BMDS) designed to provide layered defense against ballistic missiles of all ranges, Missile Defense Agency (MDA) has been directed to address the need for a timely development and deployment of sea-based terminal defenses. Sea-Based Terminal will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The mission of the terminal defense layer is to protect the U.S., U.S. forces, U.S. Allies, friends, and facilities of vital interest from ballistic missile attack by intercepting ballistic missiles in the final stage of flight. The objective of the Sea Based Terminal defense project is to perform research, development and test and perform experimentation to identify options and alternative approaches to developing a sea based terminal capability as part of the Ballistic Missile Defense System (BMDS).

Risk Reduction
Decisions on pursuit of a sea based terminal defense as an incremental block upgrade to the BMDS Test Bed will be supported by focused risk reduction activities. These include hardware in the loop testing of any modified legacy hardware, system integration testing, and a functional analysis to facilitate performance assessments, design, engineering trade-space evaluation, and integration and risk analysis.

Experimentation.
As part of the risk reduction effort, various tests and experiments will be conducted to gather empirical data, identify integration and software issues, and assess project progress. An initial critical experiment and flight test could be conducted to address priority high-risk items and, given success, delivery to the BMDS Test Bed. This project may leverage prior investments across the BMDS program.

FY 2001 Accomplishments:
- 0

Total 0

FY 2002 Planned Program:
- 0

Total 0

FY 2003 Planned Program:

- 5000 Define and evaluate alternative sea based terminal defense concepts.
- 55000 Initiate risk reduction activities/ test planning and identify areas for leverage from the investments legacy equipment.
- 5000 Conduct ground and flight test planning.
- 20000 Conduct critical experiment in FY 2003.
- 5000 Management Support.

Total 90000

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
PE 0603880C BMD System		807993	1065982	1208546	1157025	1139885	1176979	Cont	Cont
PE 0603882C Midcourse Defense Segment		3762250	3192594	3071581	3016343	2969142	2595708	Cont	Cont
PE 0603883C Boost Defense Segment		599835	796927	1398817	1399902	1591160	2274654	Cont	Cont
PE 0603884C Sensors Segment		335338	373447	489181	1145680	899806	1007660	Cont	Cont
PE 0603175C BMD Technology		139340	121751	155056	130299	142785	147457	Cont	Cont

C. Acquisition Strategy: The Sea-Based Terminal project will follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, spiral development, and evolutionary acquisition through the use of two-year capability blocks. The project will pursue risk reduction and concept development activity in several key areas to include ship integration and technology development for seekers, kill vehicles, and BMC2I. MDA will pursue multiple risk reduction efforts in these areas to support an early decision on Sea-Based Terminal.

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Courses of Action of OUSD AT&L		3Q						
Critical Experiment			1Q					

MDA RDT&E COST ANALYSIS (R-3)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

PROJECT: 2022

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Risk Reduction Activities	Various	Various				55000	TBD	Cont	55000	
b. Concept Definition	Various	Various				5000	TBD	Cont	5000	
Subtotal Product Development:						60000			60000	

Remark:

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. N/A										
Subtotal Support Costs:										

Remark:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Critical Experiment	Various	Various				20000	TBD	Cont	20000	
b. Flight Test	Various	Various				5000	TBD	Cont	5000	
Subtotal Test and Evaluation:						25000		Cont	25000	

Remark:

MDA RDT&E COST ANALYSIS (R-3)

DATE: February 2002

BUDGET ACTIVITY: 4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE: 0603881C Terminal Defense Segment

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Analysis /Assessment and Mgmt Support	Various	Various				5000	TBD	Cont	5000	
Subtotal Management Services:						5000		Cont	5000	

Remark:

Project Total Cost:						90000			90000	

Remark:

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603881C Terminal Defense Segment PROJECT 2090

COST (*In Thousands*)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2090 Program Operations	0	0	14225	14171	14318	14443	17744	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project covers personnel and related facility support costs, statutory and fiscal requirements, and support service contracts.

Personnel covers government civilians performing program-wide oversight functions such as financial management, contracting, security, information systems support, and legal services at Missile Defense Agency's (MDA's) Executing Agents within the US Army Space & Missile Defense Command, US Army PEO Air and Missile Defense, US Navy PEO for Theater Surface Combatants, US Air Force and the Joint National Integration Center. Related facility costs include rents, utilities, supplies, Automated Data Processing (ADP) equipment, and all the associated operation and maintenance activities.

Fiscal Requirements include reimbursable services acquired through the Defense Working Capital Fund (DWCF) such as accounting services provided by the Defense Finance and Accounting Services (DFAS); reserves for special termination costs on designated contracts; and provisions for terminating other programs as required. MDA has additional requirements to provide for foreign currency fluctuations on its limited number of foreign contracts. Also includes funding for charges to canceled appropriations in accordance with Public Law 101-510.

Assistance required to support Ballistic Missile Defense (BMD) program-wide management functions is also contained in this project. This assistance ranges from operational contracts to support functions such as ADP operations, Access control offices and graphics support, to efforts required to supplement MDA and Executing Agent government personnel. Typical efforts include cost estimating; security management; information management; technology integration across MDA projects; and assessment of schedule, cost and performance, with attendant documentation of the many related programmatic issues. The requirements for this area are based on most economical and efficient utilization of contractors versus government personnel.

FY 2001 Accomplishments:

•	0 Funding for this project existed and is provided under Family of Systems project, Program Element 0603873C.
Total	0

FY 2002 Planned Program:

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Total	0 Fiscal Year 2002 funding is provided under project 2011 in Theater High Altitude Area Defense, Program Element 0604861C.

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603881C Terminal Defense Segment	PROJECT 2090

FY 2003 Planned Program:

- 14225 Provides management and support for overhead/indirect fixed costs such as civilian payroll, travel, rents & utilities, and supplies.

Total 14225

B. Other Program Funding Summary	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
N/A									

C. Acquisition Strategy:
N/A

D. Schedule Profile	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
N/A							