

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction				PE NUMBER AND TITLE 0603874C BMD Technical Operations					
<i>COST (In Thousands)</i>	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	307859	0	0	0	0	0	0	Continuing	Continuing
3153 Systems Architecture and Engineering	6935	0	0	0	0	0	0	Continuing	Continuing
3155 Systems Engineering and Integration	22507	0	0	0	0	0	0	Continuing	Continuing
3161 Information Management and Technology	9238	0	0	0	0	0	0	Continuing	Continuing
3352 Modeling and Simulation	44082	0	0	0	0	0	0	Continuing	Continuing
3353 JNTF	45843	0	0	0	0	0	0	Continuing	Continuing
3354 Targets	44660	0	0	0	0	0	0	Continuing	Continuing
3357 Facilities, Siting, and Environment	2795	0	0	0	0	0	0	Continuing	Continuing
3359 Test, Evaluation & Assessment	10007	0	0	0	0	0	0	Continuing	Continuing
3360 Test Resources	107157	0	0	0	0	0	0	Continuing	Continuing
4000 Program Operations	14635	0	0	0	0	0	0	Continuing	Continuing
<p>The BMD Program and resulting FY 2002 President's Budget request has been developed based on revised Secretary of Defense direction to develop capabilities to defend against the missile threat and sustain appropriate deterrence levels. Beginning in FY 2002, funding from this Program Element is moved to the Ballistic Missile Defense Organization Program Element 0603880C to facilitate BMD system capability evolution, allow timely responses and reactions to changes in the BMD program, and provide the programmatic agility to mitigate unforeseen consequences.</p> <p>A. <u>Mission Description and Budget Item Justification</u></p> <p>The Ballistic Missile Defense (BMD) Technical Operations Programs are comprised of the centrally managed functional capabilities required to assure the execution of Theater Missile Defense (TMD), Family of Systems Engineering and Integration (FOS E&I), National Missile Defense (NMD), and Technology programs. Functional areas include BMD systems architecting and engineering analysis, test resources and facilities, modeling and simulation, and phenomenology data collection and analysis. These highly specialized BMD-specific investments provide the threat representative data and derived requirements, modeling capabilities, test facilities, and facilities, siting and</p>									

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)		DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction		PE NUMBER AND TITLE 0603874C BMD Technical Operations
<p>environmental programs necessary to meet the aggressive development, test, and deployment schedules of the TMD and NMD systems. These centrally managed programs are executed in a manner integrated with BMDO's mission areas.</p> <p>This project is assigned to the Budget Activity and Program Element codes as identified in this descriptive summary in accordance with existing Department of Defense policy. Further justification of the Budget Activity code assigned to each Program Element is contained within the Brief Description of Element section of each Program Element Summary.</p>		
B. Program Change Summary		
	<u>FY 2001</u>	<u>FY 2002</u>
Previous President's Budget (<u>FY 2002 PB</u>)	270718	
Congressional Adjustments	42500	
Appropriated Value	313218	
Adjustments to Appropriated Value		
a. Congressional General Reductions	-2857	
b. SBIR / STTR		
c. Omnibus or Other Above Threshold Reductions		
d. Intl Realign	-556	
e. Rescissions	-1946	
Adjustments to Budget Years Since <u>FY 2002 PB</u>	37225	
Current Budget Submit (<u>FY 2003 Budget Estimates</u>)	307859	
<p>Change Summary Explanation: The BMD Program and resulting FY 2002 President's Budget request has been developed based on revised Secretary of Defense direction to develop capabilities to defend against the missile threat and sustain appropriate deterrence levels. Beginning in FY 2002, funding from this Program Element is moved to the Missile Defense Agency's Program Element 0603880C.</p>		

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3153
--	--	-------------------------------

COST (<i>In Thousands</i>)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
3153 Systems Architecture and Engineering	6935	0	0	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification

Beginning in FY 2001, Project 3153 funds activities associated with the BMDO Chief Architect (BMDO/CA). Tasks within this project had funded the Chief Architect / Engineering Office (then BMDO/DE) activities prior to FY 2001. These tasks will no longer be active in this project. This project resources architectural development to design an integrated Global Air and Missile Defense capability that meets current evolving threats. The Chief Architect establishes and maintains the Ballistic Missile Defense (BMD) Baseline Architecture. The BMD Baseline Architecture is the overarching and unifying BMD structure expressed in terms of components, connections, constraints, and their interrelationships. The architecture functions include assessing the evolving technical, military, and geopolitical environments, developing and evaluating architecture alternatives to provide suitable BMD capabilities, integrating the selected architecture alternative, and tracking architecture implementation. The BMD Baseline Architecture expressed as a series of time-phased spiral development epochs pacing the threat, serves as the technical basis for systems engineering and acquisition planning. The Chief Architect provides analytical support to the Director, BMDO, and staff through a common analysis framework. The Chief Architect conducts special studies related to alternative and extended missile defense architectures and quick reaction studies in response to immediate senior decision-maker requests.

FY 2001 Planned Program:

- 860 Architecture Analysis
 - 6075 Support Contractors
- Total 6935

B. <u>Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost

C. Acquisition Strategy: Systems analysis work in this project is contracted. Expertise of Government, Federally Funded Research & Development Center (FFRDC), and Scientific, Engineering and Technical Assistance (SETA) personnel are leveraged in the execution of project activities, using existing contracts to the maximum extent possible. Additional contractor services will be procured if needed to meet emerging program requirements.

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) DATE **February 2002**

BUDGET ACTIVITY
4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE
0603874C BMD Technical Operations

PROJECT
3153

D. Schedule Profile	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Initiate BMDSAS Iteration 8	1Q						
Final Architecture Description Document (ADD) version 1.0 to Director	1Q						
Initiate BMDSAS Iteration 9	2Q						
Initiate BMDSAS Iteration 10	3Q						
Final ADD Version 2.0 to Director	3Q						

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3153
---	---	------------------------

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. Architecture Analysis		MDA	860						860	
Subtotal Product Development:			860						860	

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.										
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.										
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. Support Contracts	CPAF	MDA	6075						6075	
Subtotal Management Services:			6075						6075	

Remark:

Project Total Cost:			6935						6935	
---------------------	--	--	------	--	--	--	--	--	-------------	--

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction				PE NUMBER AND TITLE 0603874C BMD Technical Operations				PROJECT 3155		
<i>COST (In Thousands)</i>	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost	
3155 Systems Engineering and Integration	22507	0	0	0	0	0	0	Continuing	Continuing	
A. <u>Mission Description and Budget Item Justification</u>										
<p>This project is part of a Program Element (PE) currently in a transition phase after BMDO's reorganization. BMDO has realigned its Systems Engineering functional tasks, which had previously been accomplished as a part of a number of projects under this PE and consolidated them under this project (3155). Beginning in FY02, the Systems Engineering efforts will reside in the new BMD Architecture and Engineering PE (0603877C).</p> <p>The Systems Engineer is responsible for producing the BMD Functional Baseline (Systems Architecture Allocated Functional Requirements Document (SAAFRD)), which ensures the technical viability, integrity, and interoperability of the BMD program, to include TAMDM, NMD and cruise missile options. Working in conjunction with the Chief Architect, Systems Engineering provides the core engineering capability to assess operational requirements and translates them into system requirements that are allocated to: legacy systems, modifications of legacy systems, and/or new system concepts necessary to meet user needs. This includes the development and allocation of systems requirements necessary to ensure that the Major Defense Acquisition Program (MDAP) systems are fully interoperable and provide maximum flexibility to the warfighter. Battle Management Command, Control, Communication (BM/C3) Systems Engineering provides the warfighter with timely, early warning information through development of a theater missile defense architecture that fosters interoperability and system integration. These activities also develop data standards, conduct studies and analyses, and formulate and implement policy and procedures to ensure that DoD and BMD interoperability requirements support the Services, allied and coalition partners. Working closely with the intelligence community, Systems Engineering establishes and maintains the design-to-threat requirements, funded via PE 0603876C, to ensure consistent threat parameters across the MDAPs.</p> <p>To ensure the technical viability of BMDO programs, Systems Engineering conducts continuous assessments of systems development to assess progress, determine capability, and identify and mitigate risks, including risks incurred due to the evolving threat environment. Mitigation activities include the generation of technology requirements and identification of opportunities for technology insertion. Systems Engineering maintains an ongoing Corporate Lethality Program to characterize the effectiveness of the BMD architecture, understand post-intercept effects, establish methodologies to allow warhead typing based on impact response, and provide a common end-to-end lethality assessment capability across the MDAPs. Working in conjunction with the test and evaluation community, Systems Engineering develops test requirements and conducts post test analyses to ensure the MDAP systems meet requirements and satisfy warfighter needs. Finally, Systems Engineering executes the BMDO Configuration Control Process and maintains configuration control of TMD and NMD architecture baselines.</p> <p>Systems Engineering is executed in a collaborative environment. BMDO maintains a close working relationship with the MDAP Program Managers, PEOs and the PEO Systems Engineers, and the BM/C3 Community. Additionally, BMDO continues to work with the Military Services, U.S. Space Command, U.S. Joint Organization to ensure full integration of other systems, sensors, and command and control centers that contribute to BMD.</p>										
Project 3155			Page 6 of 37 Pages				Exhibit R-2A (PE 0603874C)			

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3155
---	---	------------------------

FY 2001 Planned Program:

- 3375 System Arch Engineering (SEE)
 - 2804 BM/C3 – Initiate development of a TBMD BMC3 System Requirements Document (SRD) to support the overarching Systems Architecture Allocated Functional Requirements Document (SAAFRD) document; develop a Family of Systems (FoS) Integrated System Specification (ISS) to baseline current TBMD performance capabilities; develop an FoS System Performance Specification (SPS) focused on meeting near-term BMC3 interoperability requirements. Develop TBMD Link-16 and Global Command and Control System (GCCS) interoperability enhancements (e.g. Coalition/Ally tactical TBM message exchanges, Joint Range Extension, and integration of joint service force planners such as the Joint Defensive Planner). Develop and maintain a list of BM/C4I risks; monitor and assess BM/C4I CARDS; develop TMD Interface Exchange Requirements (IER); develop a TMD/NMD Interoperability Program Plan and Interoperability Roadmap; and define interoperability test and tool requirements. Conduct interoperability studies and experiments; Missile Defense Interoperability Plan; BMDO annual interoperability and capability report, allied/coalition BM/C3 Analysis (NATO, UK, Israel, etc); Interoperability Analysis of Service’s Joint Planning Network, Joint Data Network and Joint Composite Tracking Network. Provide support to the Ballistic Missile Defense System Architecture Study (BMDSAS) with regard to C4ISR, and DUSD C3I efforts; support Joint Mission Area Analysis (JMAA) and development of Ballistic Missile Information Architecture. Support JTA Compliance and Missile Defense (MD) Annex development, Migration Plans and waivers as required; Data Element Dictionary (DED) for MD; development of BMDO Technical Architecture, and BMDO C4ISR Support Plans.

 - 10019 Support Contracts
 - 6309 SET Lethality
- Total 22507

B. <u>Other Program Funding Summary</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>

C. Acquisition Strategy: The 3155 Project acquisition strategy leverages existing system acquisition programs (which are subject to milestone decisions and testing) and accomplishes supporting tasks to satisfy Systems Engineering performance requirements. A portion of this project entails systems engineering of separately funded and managed service programs so that all systems will interoperate when fielded.

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)						DATE February 2002	
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction			PE NUMBER AND TITLE 0603874C BMD Technical Operations				PROJECT 3155
D. Schedule Profile	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Identify BMC4I Risks	1Q						
Develop./Maintain Risk Mitigation Plans	1Q						
Develop/Maintain Software Engineering	1Q 4Q						
Revise SDIO Dir. 3405	2Q						
Coordinate BMDO Software Policy	3Q						
Develop/Revise MD Interop. Plan	1Q						
Develop/Revise Security Architecture	1Q						
Publish BMC4I Analysis Results	4Q						
Publish NATO BMC4 Analysis Final Report	4Q						
Publish US/GE Analysis Final Report	4Q						
Develop MD Technology Roadmap	1Q						
Standards Compliance Lessons Learned Data Base	3Q						
Publish JTA Annual Report	4Q						
Develop Processes JTA MD Subdomain	4Q						
Investigate Joint Tactical Radio System (JTRS)	2Q						
Maintain Control Over Sys. Interf.	Quarterly						
BMC4I Standards Compliance	Quarterly						
Enforce BMDO JTA	Quarterly						
Direct Processes BMC4I Sensor System Engineering	Quarterly						
Final development/fielding of JDP V.2x into GCCS V4.0	3Q						
Final development/fielding of JDP V.2x into TBMCS V2.0	3Q						
TAMD-I ACTD	3Q						
TBMD Enhancements	1Q						
Develop TBMD BMC3 Systems Requirements Document (SRD)	3Q						
Integrated System Specification (ISS) Draft/Final	Quarterly						
System Performance Specification Draft/Final	Quarterly						
Develop JRE Intrem Capability	1Q						
Assemble tech viable analysis team to audit technical health of each BMD program	1Q						
Complete initial BMD level TPM's	1Q						
Develop Security Architecture	1Q						
Collect TPM Data to validate selected measures, establish control thresholds	2Q						

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3155
--	--	-------------------------------

Start operational vs system requirements synergies vs disconnect analysis	2Q						
Stand-up CCB and BMD Configuration Management process – Run DTT through the process	2Q						
Develop M&S and Test Tool Strategy	3Q						
Complete initial technical viability assessments for BMD program	3Q						
Establish Configuration Control or BMD Baselines to be Managed, Complete Analysis of 1 st Iteration of System Architecture Baseline	4Q						
Assess TPM Utility, Relate Requirements to M&S and T&E Activities	4Q						
Operational/System requirements integration	4Q						
JRE Application Protocol	4Q						
Complete expansion of SE World Class Engineering Process briefing into a training manual for new BMDO and contractor engineers	4Q						
Obtain Approval for Initial NMD/TBMD SAAFRS	4Q						
Complete initial integration of operational vs systems requirements	4Q						
JRE Protocol Gateway Development	Quarterly						

UNCLASSIFIED

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3155
--	--	-------------------------------

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
Subtotal Product Development:										

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. System Arch Eng (SEE)	CPFF	MDA	3375						3375	
b. SE&I BMC3 Interoper	CPAF	Various EA	2804						2804	
c. SET Lethality	CPFF	Various EA	6309						6309	
Subtotal Product Development:			12488						12488	

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.										
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. Support Contracts		MDA	10019						10019	
Subtotal Management Services:			10019						10019	

Remark:

Project Total Cost:			22507						22507	
---------------------	--	--	-------	--	--	--	--	--	-------	--

Remark:

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2002					
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction				PE NUMBER AND TITLE 0603874C BMD Technical Operations				PROJECT 3161				
COST (In Thousands)				FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
3161 Information Management and Technology				9238	0	0	0	0	0	0	Continuing	Continuing
A. <u>Mission Description and Budget Item Justification</u>												
<p>This project provides the Support Technology funding for the Ballistic Missile Defense Organization (BMDO) Data Centers Program. The primary responsibility for this project is for the BMDO Data Centers Information System Program Manager to provide management, oversight, technical assistance, and expertise for the BMDO Data Centers Program. The purpose of the BMDO Data Centers Program is to archive, manage, develop data products, distribute and provide remote access to all relevant BMD data. Operation and management of the Data Center activities is accomplished at several sites, each site specializing in a particular discipline. Taskings include providing assessments of technical/programmatic issues and data center performance, coordinating NMD, TMD, and Support Technology customer program/data management requirements and cooperative partnership requirements.</p>												
FY 2001 Planned Program:												
•	1211	This task provides the Support Technology funding for the BMDO Data Centers Program and Virtual Data Center (VDC) operation and Maintenance (O&M). The primary responsibility under this task is for the BMDO Data Centers Information System Program Manager to provide management, oversight, technical assistance, and expertise for the BMDO Data Centers Program. The purpose of the BMDO Data Centers Program is to archive, manage, develop data products, distribute and provide remote access to all relevant BMD data.										
•	2951	Provides the U.S. Army with Project Funding to support the Missile Defense Data Center (MDDC), SMDC. The MDDC, as a primary BMDO Data Center will acquire, process, manage, and archive Ballistic Missile Defense (BMD) mission oriented technology. This includes the collection, organization, archiving, protection, processing, analyzing and dissemination of strategic and tactical missile systems (NMD and TMD) data products.										
•	2433	Provides the U.S. Air Force with Project Funding to support the Advanced Missile Signature Center (AMSC) at AEDC, Arnold AFB, TN, as a primary BMDO Data Center that can process, manage, and archive BMD mission oriented data. AMSC also provides technical support, data cataloging, test/experiment planning, and data product distribution for BMDO-sponsored NMD FoS, CMD and BPI programs.										
•	2143	Provides the Joint National Test Facility funds for the BMD Simulation Support Center (BMD SSC), as a primary BMDO Data Center that can process, manage and archive M&S, C2SIM and CINC Assessments, BM/C3I, and JEA data; provide technical and data catalog support; and conduct test/experiment planning and data product distribution for BMDO-sponsored programs.										
•	500	Provides funding for the design, development, engineering, implementation, and operation of the BMDO Wide Area Network (WAN).										
Total	9238											
<p>Project 3161 Page 11 of 37 Pages Exhibit R-2A (PE 0603874C)</p>												

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3161
--	--	-------------------------------

B. <u>Other Program Funding Summary</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To</u>	<u>Total</u>
								<u>Compl</u>	<u>Cost</u>

C. Acquisition Strategy:
 The work in this project is sourced through full and open competition. Primary Data Center Program support is performed at SMDC, AEDC, and JNTF. The SMDC contractor operates under a Cost Plus Award Fee (CPAF) first awarded in February of 1999. The AEDC contractor operates under a CPAF first awarded in October of 1995.

D. <u>Schedule Profile</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Develop Standard Data Centers Program Cost Business Model	1Q						
Update Data Centers Plan	1Q						
Transition/Realign Data Centers Program with Corporate Information Management Program	3Q						

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3161
--	--	-------------------------------

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.										
Subtotal Product Development:										

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. Networks	Allotment	MDA	1211						1211	
b. Data Center and Management	Allotment	Various EA	7527						7527	
Subtotal Support Costs:			8738						8738	

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.										
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. Gov Projects and Per Supt		Army SMDC	500						500	
Subtotal Management Services:			500						500	

Remark:

Project Total Cost:			9238						9238	
---------------------	--	--	------	--	--	--	--	--	------	--

Remark:

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction				PE NUMBER AND TITLE 0603874C BMD Technical Operations				PROJECT 3352		
COST (In Thousands)		FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
3352	Modeling and Simulation	44082	0	0	0	0	0	0	Continuing	Continuing
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project is responsible for the implementation of a comprehensive program that establishes and maintains an affordable and validated set of Core Models and Simulations (M&S). These mission focused Core Models and Simulations are required for pre- and post-test evaluation activities that support the Corporate Test Program and MDAP testing events. This project provides for the program management, planning, coordination, and technical oversight of system level M&S.</p> <p>This mission common task provides computing and networking infrastructure support for the ARC/SC. Specific efforts supported include the concept exploration, development, and test of Theater Air Missile Defense (TAMD) and National Missile Defense (NMD) U.S. Army elements. This task supports the operations and maintenance of computing resources for multiple testbeds within the ARC and supercomputers and local and wide area networking capabilities within both the ARC and SC.</p> <p>Signature Model and Synthetic Scene Generation and Simulation activities provide high confidence signature prediction capability for active and passive EO and RF sensors used in BMD elements and systems. Both empirical and physics-based models and computer codes are developed, verified & validated, maintained, and distributed to provide high-confidence results. These predictions support test planning, test target design, sensor design/development/test, data and systems analysis, operational test and evaluation, and algorithm development.</p> <p>M&S activities also funded by this project include: development, enhancement, and maintenance of the theater test beds and tools for the conduct of wargames that provide the analysis, integration, demonstration, and performance verification for TMD systems. It ensures joint usage of simulation tool resources and supports allied and friendly international participation and cooperation in wargaming exercises. This project focuses M&S support in three major areas: assessments, development/modification, and program management for BMDO and Service M&S programs.</p> <p>The Ballistic Missile Defense Simulation Support Center (BMDSSC) archives and maintains M&S tools which are joint, global and possess multi-level fidelity. The BMD SSC seamlessly links existing and planned simulations of C4I networks, platforms and weapon systems. This activity also includes the operation and maintenance of centralized M&S catalogs of databases that identify current and developing BMDO simulation tools. BMD SSC has been designated as the BMDO Node for models, simulations, and data on the Defense Modeling and Simulation (DMSO) Resource Repository (MSRR).</p> <p>Wargame 2000 is being developed as a BMD simulation to run wargames and exercises at the JNTF for the next 10 years. The requirements are to: design the simulation using an object oriented paradigm, enable "plug and play" of TMD and NMD models, facilitate integrating (BMDO's JNTF) internal and external elements into a flexible real-time simulation suite, incorporate realistic C2 displays, enhance wargaming productivity and responsiveness, and provide for multi-level security.</p>										
Project 3352		Page 14 of 37 Pages				Exhibit R-2A (PE 0603874C)				

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3352
<p>This task includes the "Wide Bandwidth Information Infrastructure Project" (WBII), which is to create a network for geographically distributed ground test facilities for both THAAD and NTW missile defense programs. Specifically, linking the Aegis Weapons System Combat Systems Engineering Development Sites (CSEDS) in Moorestown, NJ, and the Standard Missile-III Systems Integration Laboratory (SIL) in Tucson, AZ using networking and Virtual Private Network (VPN) technology. Both Hardware-in-the-Loop (HWIL) applications will involve information security and interoperability issues. The focus on networking technologies is to meet scaleable national security classification networking architecture requirements to distribute imagery data for seeker and sensor algorithm developers for the Ballistic Missile Defense Organization (BMDO) Project Hercules.</p> <p>In FY00 only, this project also provided acquisition and support services for the design, development, modernization, and control of BMDO Mission Oriented Information Technical Modernization (ITR). The objective for this program is to provide responsive ITR support and services via a flexible, responsive architecture to satisfy validated current and projected user ITR requirements. Specific tasks include processing of Mission Oriented ITR-related service requests, conducting the Mission Oriented ITR Working Group and supporting BMDO Chief Information Officer (CIO) initiatives such as the drafting and implementation of the mission oriented portions of the BMDO Strategic Information Management Plan and BMDO Five Year Information Resources Management Plan (FYIRMP). This project is also responsible for the identification and support of High Performance Computing requirements.</p> <p>Lethality Model activities provide modeling and simulation support for the BMDO Corporate Lethality Program and the lethality community. The Lethality program answers are the primary evaluation tools to determine the success or failure of a threat target intercept. This task supports the maintenance and enhancement of lethality models through the development of standard lethality threat-representative targets, the pre-flight prediction of tests and experiments to obtain lethality data and the incorporation of that data into the interceptor/target lethality models' design.</p> <p>This mission common task includes the government salaries and related support costs (e.g. rent, travel, supplies, etc.) for the Service Executing Agent (EA) government technical personnel, other than the PEO, directly supporting and assigned to the Testbed Product Office and the ARC/SC.</p> <p>This project is conducted in accordance with DoD 5000.59, DoD Modeling and Simulation (M&S) Management.</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 16211 ARC/SC Development and Operations • 900 EADTB • 4519 Signature Models • 773 SSC Support • 6981 Wargame 2000 • 8664 Bandwith Info Infrastructure • 1233 Lethality Models • 1757 Gov Project Per and Support • 3044 Support Contracts <p>Total 44082</p>		
Project 3352	<i>Page 15 of 37 Pages</i>	Exhibit R-2A (PE 0603874C)

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3352
---	---	------------------------

B. <u>Other Program Funding Summary</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
PE 0603873C	227965								

C. Acquisition Strategy:

The work in this project is sourced through full and open competition. Majority of M&S support is performed at the JNTF, ARC/SC, BMD SSC and other test bed facilities. The ARC/SC contractor operates under a Cost Plus Fixed Fee (CPFF) contract first awarded in June of 1989.

D. <u>Schedule Profile</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
BMDSSC Version Release (Unclassified)	1Q-4Q						
M-O FYIRMP	4Q						
BMD SSC Version Release (Classified)	1Q,3Q						
C2SIM '00 w/ Wargame 2000	1Q						
Wargame 2000 TAMD FOC (Block 33)	3Q						
M & S Investment Plan	2Q						
PEGEM Version 3.6	1Q						

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3352
--	--	-------------------------------

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. ARC Development	C/CPAF	Army SMDC	16211						16211	
b. EADTB	Allotment	Army SMDC	900						900	
e. Wargame 2000	Allotment	Multiple	6981						6981	
f. SSC Support	Allotment	Multiple	773						773	
g. Bandwidth Infrastructure	Allotment	Multiple	8664						8664	
h. Signature Models	Allotment	Multiple	4519						4519	
i. Lethality Models	Allotment	Multiple	1233						1233	
Subtotal Product Development:			39281						39281	

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.										
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.										
Subtotal Test and Evaluation:										

Remark:

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3352
---	---	------------------------

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
f. GOV Project Per & Supt	Allotment	Army SMDC	1757						1757	
a. Support Contracts	Allotment	MDA	3044						3044	
Subtotal Management Services			4801						4801	

Remark:

Project Total Cost:			44082						44082	
---------------------	--	--	-------	--	--	--	--	--	-------	--

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 0603874C BMD Technical Operations	PROJECT 3353
--	--	-------------------------------

COST (In Thousands)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
3353 JNTF	45843	0	0	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint National Test Facility (JNTF) is BMDO's premiere modeling, simulation and test capability for evaluating the interoperability of Theater Missile Defense (TMD) and National Missile Defense (NMD) functions. It is staffed by the military services with a focus on Family of System Interoperability for TMD and NMD in both Joint and Combined environments. In evaluating systems interoperability, the JNTF measures the integrated effects of systems and architectures, using both actual and simulated systems, and the capability to demonstrate effective information exchange within a prescribed scenario. In addition to conducting tests on systems of systems, JNTF also provides one-on-one support to TMD service developers for technical insertion and upgrade programs. JNTF also actively participates in CINC-sponsored TMD Exercises and Experiments supporting simulation and connectivity requirements, as well as collecting field interoperability data / information to assist in validating models and simulations. Both TMD and NMD Battle Management capabilities are exercised and evaluated at the JNTF. The JNTF provides inter-service computational capabilities and wide area network communication networks with Service facilities.

FY 2001 Planned Program:

- 41558 JNTF Development and OPNS
 - 4285 Gov Project per and Supt
- Total 45843

B. <u>Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY2007	To Compl	Total Cost
PE 0603873C	227965								
PE 0603874C	307859								
PE 0603876C	25853								

C. Acquisition Strategy:

The tasks in this project are met through full and open competition. The CRDC contract, currently performed by TRW and its sub-contractors, will be re-competed in FY01 through full and open competition. Formal source selection procedures are envisioned with an estimated award date of 15 October 2001. Contracted Advisory & Assistance Services are provided by Vanguard Research as Cost Plus Award Fee. This contract is being re-competed as a technical and administrative assistance contract for the JNTF Government staff in FY00. Formal source selection procedures are envisioned with an estimated award date of 15 October 2001.

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) DATE **February 2002**

BUDGET ACTIVITY
4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE
0603874C BMD Technical Operations

PROJECT
3353

D. Schedule Profile	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
TAMD/CINC Exercises	1-4Q						
TAMD Wargame	2&4Q						
C2 Simulation (NMD)	1Q						
Interoperability Tests	2&4Q						
Wargame 2000 Block 32	1Q						
Wargame 2000 Block 33	2Q						

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3353
---	---	------------------------

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. N/A										
Subtotal Product Development:										

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 FY99-01	Target Value of Contract
a. GOV Project Per & Supt	Allotment	Various	4285						4285	
			4285						4285	

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. JNTF Development and OPNS	Allotment	JNTF, Colorado Springs, CO	41558						41558	
Subtotal Test and Evaluation:			41558						41558	

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. N/A										
Subtotal Management Services:										

Remark:

Project Total Cost:			45843						45843	
---------------------	--	--	-------	--	--	--	--	--	-------	--

Remark:

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction				PE NUMBER AND TITLE 0603874C BMD Technical Operations				PROJECT 3354	
COST (In Thousands)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
3354 Targets	44660	0	0	0	0	0	0	Continuing	Continuing
A. <u>Mission Description and Budget Item Justification</u>									
<p>The PAC-3, Navy Area, THAAD, Navy Theater Wide, and Airborne Laser (ABL) programs require target system support to accomplish their planned test and evaluation programs. The PAC-3 program uses HERA and Storm targets launched from Ft. Wingate into White Sands Missile Range (WSMR) and from Wake Island to Kwajalein Missile Range (KMR). The Navy Area program will use HERA targets from Ft. Wingate into WSMR, Short-Ranged Air Launched Targets (SRALT) at PMRF for the Linebacker test series, and Navy Theater Wide is using the Minute Man I, M-56 second stage booster for Aegis Leap Intercept testing launched from Pacific Missile Range Facility (PMRF - Barking Sands, Kauai) into open ocean impact areas. Lance missiles have been used for testing with the PAC-3 and the Navy Area programs. U.S. Army Space and Missile Defense Command (USASMDC) and U.S. Air Force Space and Missile Command (USAFSMC) are developing short and long range air launched target (LRALT) capabilities. LRALT will augment the existing target inventory; provide the capability to launch targets at various azimuths and ranges into TMD test ranges; and allow multiple simultaneous engagements.</p> <p>In FY00, this project maintained the Strategic Target System (STARS) motors, components and launch equipment and mission planning support for possible future use as a Theater Missile Defense (TMD) long range target or National Missile Defense (NMD) target. FY01 funding for STARS is in the NMD Technology Program Element (0603871C).</p> <p>In FY01, this project will support the Consolidated Targets Program (CTP), the mission of which is to provide threat-credible ballistic missile targets and target system support to weapon system development and acquisition programs in accomplishment of BMDO's reliance obligations to the Department of Defense (DOD). The major functions of the CTP include: design, development and presentation of Theatre Missile Defense (TMD) targets; management of the Target Certification Process; Verification, Validation and Certification (VV&C) of target assets; modification and reuse of strategic missile hardware; air launched and liquid fueled target development; matching ballistic re-entry vehicle development; proof of concept/risk reduction demonstration flights; the acquisition and management of actual threat targets (Foreign Material Acquisition), and program management. Each target developed for BMD testing will be certified as providing the correct threat representative characteristics to test a system.</p>									
FY 2001 Planned Program:									
•	38988	Target Validation							
•	748	Foreign Material Acquisition							
•	2336	Liquid Fueled Targets							
•	2588	Government Project Per & Support							
Total	44660								
Project 3354			Page 22 of 37 Pages				Exhibit R-2A (PE 0603874C)		

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3354
--	--	-------------------------------

B. <u>Other Program Funding Summary</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To <u>Compl</u>	Total <u>Cost</u>

C. Acquisition Strategy:

- The Hera and Storm target systems are being developed by the executing agent: U.S. Army Space and Missile Defense Command (USASMDC), Theater Targets Program Office (SMDC-TJ-TT) in Huntsville, AL. The Hera and Storm target systems are being procured under the Consolidated Theater Target Services (CTTS) contract. Coleman aerospace corporation, Orbital Sciences Corporation, and Lockheed Martin Missile Systems compete for TMD target services. This contract provides increased flexibility to meet MDAP schedules and requirements.
- The development and demonstration of the long range air launched ballistic target system (LRALT) is being managed by the USASMDC/TT&E office with the Air Force Space and Missile Command as the contracting agency.
- With the advent of LRALT STARS is no longer a required TMD target. STARS will continue to be supported in the NMD Technology Program Element (0603871C).
- A liquid fueled target development program was initiated in FY00 to design a liquid-fueled booster for TMD target use. FY01 initiates a design phase with development starting in FY02.

D. <u>Schedule Profile</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Navy Area	1-4Q						
Navy Theater	1-4Q						
PAC-3	1-4Q						
Others (Technology Programs)	2Q						

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3354
--	--	-------------------------------

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. Target Validation	Allot	USASMDC Huntsville, AL	38988						38988	
b. Liquid Fueled Targets	CPFF	USASMDC Huntsville, AL	2336						2336	
c. Foreign Mat Acquisition	CPFF	USAFSMC Los Angeles, CA	748						748	
Subtotal Product Development:			42072						42072	

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.										
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.										
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. GOV Project Per & Support		Army SMDC	2588						2588	
Subtotal Management Services:			2588						2588	

Remark:

Project Total Cost:			44660						44660	
---------------------	--	--	-------	--	--	--	--	--	-------	--

Remark:

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3357
---	---	------------------------

COST (<i>In Thousands</i>)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
3357 Facilities, Siting, and Environment	2795	0	0	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification

In FY01, this project provides environmental program guidance, environmental impact analyses and documentation, real property facility siting, acquisition, and facility operational support for the Ballistic Missile Defense Organization (BMDO) Theater Missile Defense (TMD) and National Missile Defense (NMD) systems. This project plans, programs, budgets, and oversees facility acquisition through the Military Construction (MILCON) and RDT&E construction programs. This project provides guidance and supports BMDO TMD, NMD, and Advanced Technology Environmental Safety and Health (ESH) Programs, including the Environmental Assessment and Environmental Impact Statement process, environmental compliance, pollution prevention, and other environmental efforts.

FY 2001 Planned Program:

- 314 Fac & Siting Programs
 - 194 Env Safety and Health Programs
 - 2287 Support Contracts
- Total 2795

B. <u>Other Program Funding Summary</u>	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost

C. Acquisition Strategy:

BMDO tasks the Services through Program Management Agreements to perform the required tasks in support of the BMD program and performs quarterly reviews to verify and validate completed tasks.

To provide technical assistance concerning facilities construction, siting, and environmental activities, BMDO implements a process which:

- Maintains perspective of national technical test capabilities relative to all BMD developmental programs,
- Responds to MDAP program requirements,
- Makes maximum use of existing test resources where possible,
- Requires full coordination prior to development of new resources,

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3357
--	--	-------------------------------

- Consolidates management of existing resources where possible and practical.

This process is executed through a variety of acquisition methods. Executing Agent Project Managers for the elements and tasks under this project include the three military services and the BMDO. Service Project Manager organizations specifically include the:

- U.S. Army Space and Missile Defense Command (USASMDC)
- U.S. Air Force Materiel Command
- Navy Program Executive Officer (Theater Surface Combatants)
- U.S. Army Corps of Engineers (USACE)
- U.S. Navy, Naval Facilities Engineering Command (NAVFAC)
- U.S. Army Program Executive Officer-Missile Defense

D. Schedule Profile	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Environmental Support for BMDO Programs	1-4Q						
Facility Acquisition Support for BMDO Programs	1-4Q						

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)

DATE **February 2002**

BUDGET ACTIVITY
4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE
0603874C BMD Technical Operations

PROJECT
3357

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 2002</u> Cost	<u>FY 2002</u> Award Date	<u>FY 2003</u> Cost	<u>FY 2003</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Fac & Siting Programs	Allot	Various	314						314	
b. Env Safety and Health Programs	Allot	Various	194						194	
Subtotal Product Development:			508						508	

Remark:

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 2002</u> Cost	<u>FY 2002</u> Award Date	<u>FY 2003</u> Cost	<u>FY 2003</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Support Contracts	Various	BMDO	2287						2287	
Subtotal Support Costs:			2287						2287	

Remark:

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

Remark:

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

Remark:

Project Total Cost:			2795						2795	
---------------------	--	--	------	--	--	--	--	--	------	--

Remark:

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction				PE NUMBER AND TITLE 0603874C BMD Technical Operations				PROJECT 3359		
COST (In Thousands)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost	
3359 Test, Evaluation & Assessment	10007	0	0	0	0	0	0	Continuing	Continuing	
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>FY 2001 Test, Evaluation and Assessment activities in this PE consists of selected activities previously performed under Project 1155, Discrimination.</p> <p>To prepare for critical future defense needs, technical operations will support BMDO programs by conducting several cross cutting programs that will yield improved capabilities across a selected range of boost, midcourse and terminal phase missile defense interceptors, advanced target sensors and innovative science. The ultimate objective is improved performance, reduced costs for acquisition programs and technical solutions options to mitigate evolving threats associated with National and Theatre Ballistic Missile Defense.</p> <p>This program provides the critical BMD signature data collection, analysis and reporting provided to the BMD community necessary for weapon system and interceptor development. Analysis efforts consist of Radar Cross Section analysis and Infrared signature analysis using data collection by assets owned or operated by BMDO or operated by other agencies for use by BMDO.</p> <p>This program also supports BMDO efforts to engage Allied countries in conducting collaborative efforts associated with ballistic missile signature and phenomenology research. Exchanges are conducted to assist Allies in facilitating surveillance, acquisition, track, discrimination and kill assessment through data collection, analysis and reporting.</p> <p>FY 2001 Accomplishments:</p> <ul style="list-style-type: none"> • 247 Provide Funding for Critical Measurements Program • 15 Provide Funding for Test Planning • 456 Provide Funding for Corp Data Collect and Analysis • 2597 Provide Funding for Optical Data Analysis • 2065 Provide Funding for Radar Exploitation • 1624 Provide Funding for RCS Data Analysis • 977 Gov Project Per and Support • 1021 Support Contracts • 1005 Provide Funding for International Programs <p>Total 10007</p>										
Project 3359			Page 28 of 37 Pages				Exhibit R-2A (PE 0603874C)			

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3359
---	---	------------------------

B. <u>Other Program Funding Summary</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To <u>Compl</u>	Total <u>Cost</u>

C. Acquisition Strategy:

This program provides critical optical/IR and RCS signature data and algorithm development for the BMDO MDAPs and is inserted in the systems engineering process for weapon system improvement. International collaborative efforts promote shared ballistic missile defense research and technologies, which will contribute to a stronger ballistic missile defense capability by Allied countries

D. <u>Schedule Profile</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)										DATE
BUDGET ACTIVITY										February 2002
4 - Program Definition and Risk Reduction					PE NUMBER AND TITLE					PROJECT
					0603874C BMD Technical Operations					3359
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.										
Subtotal Product Development:										
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.										
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 Measures (CMP)	Allotment	SMDC Army	247						247	
b. Test Planning	Allotment	MDA	15						15	
c. Corp Data Analysis	Allotment	Various EA	456						456	
d. Optical Data Analysis	Allotment	Various EA	2597						2597	
e. RCS Data Analysis	Allotment	Various EA	2065						2065	
f. Radar Exploitation	Allotment	SMDC Army	1624						1624	
g. International Programs	Allotment	Various EA	1005						1005	
Subtotal Test and Evaluation:			8009						8009	
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. Support Contracts	Allotment	MDA	1021						1021	
b. GOV Project Per & Supt	Allotment	SMDC Army	977						977	
Subtotal Management Services:			1998						1998	
Remark:										
Project Total Cost:			10007						10007	
Remark:										

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3360
---	---	------------------------

COST (<i>In Thousands</i>)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
3360 Test Resources	107157	0	0	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides for BMDO planning, oversight and coordination of integrated test and evaluation facilities. The project includes inter-element as well as inter-service test and evaluation efforts, and provides for common ground test facilities, ranges and instrumentation. Project 3360 funds those test resources mutually supporting BMDO's National Missile Defense (NMD), Theater Missile Defense (TMD) and Technology programs. Individual BMDO programs pay only the direct costs associated with their specific testing efforts at these mission critical facilities.

The ground test facilities include:

- Kinetic Kill Vehicle Hardware in the Loop Simulator (KHLS) at Eglin AFB in Fort Walton Beach, FL
- AEDC Hypervelocity Wind Tunnel Number 9 (Tunnel 9) at White Oak, MD
- Infrared and Blackbody Standards at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD.
- Hypervelocity Ballistic Range G Light Gas Gun Von Karman Facilities (VKF) at the Arnold Engineering and Development Center (AEDC) in Tullahoma, TN
- 7V and 10V Space Chambers at AEDC, Tullahoma, TN
- National Hover Test Facility (NHTF) at Edwards AFB, CA
- Army Missile Optical Range (AMOR) at Redstone Arsenal, AL
- Aero-Optic Evaluation Center (AOEC) at Calspan-University of Buffalo Research Center (CUBRC), NY
- Holloman High Speed Test Track (HHSTT) at Holloman AFB, NM

The test range facilities include national ranges such as:

- White Sands Missile Range (WSMR) in Las Cruces, NM including Ft. Wingate Launch Complex near Gallup, NM
- Kwajalein Missile Range (KMR) in the Marshall Islands
- Pacific Missile Range Facility (PMRF) and Kauai Test Facility (KTF) at Kauai, HI
- Wake Island Launch Complex

The range instrumentation special test equipment, data collection assets, and range instrumentation include:

- IR data collection sensors and platforms
- Mobile Range Safety System and Kwajalein Range Safety Control Center Upgrades
- NP-3 Aircraft upgrade for remote area safety support.
- Sea-Lite Beam Director (SLBD), based at White Sands Missile Range, Las Cruces, NM

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3360
--	--	-------------------------------

Miscellaneous improvements to BMDO infrastructure and support systems

These ground test, range and instrumentation assets provide valuable risk reduction and test implementation capability in support of TMD and NMD test and evaluation. The ground test facilities provide a cost-effective method of testing and evaluating applicable component, sub-system and system level technologies. The common range facilities provide a cost-effective method of flight testing missile and target components applicable to the BMD program and TMD Family of Systems (FoS), BMC³ and interoperability testing. Range instrumentation provides a cost-effective capability to collect missile characteristics, phenomenology data, and target/interceptor diagnostics on flight tests. These facilities and capabilities support systems design, verification and validation of weapon system and target realism, and the evaluation of test results.

This project provides for BMDO planning, oversight and coordination of integrated test and evaluation facilities. The project includes inter-element as well as inter-service test and evaluation efforts, and provides for common ground test facilities, ranges and instrumentation. Project 3360 funds those test resources mutually supporting BMDO's National Missile Defense (NMD), Theater Missile Defense (TMD) and Technology programs. Individual BMDO programs pay only the direct costs associated with their specific testing efforts at these mission critical facilities.

FY 2001 Accomplishments:

- 15220 Provide funding to BMDO common Test Facilities
- 29198 Provide funding to BMDO common Test Ranges
- 16920 Provide funding to BMDO common Sensors
- 5867 Provide funding to Wake Island
- 4673 Provide funding for BMDO common Ranges Improvement and Modernization
- 650 Provide funding for Sea Based Data Collection
- 4782 Provide funding to HALO/Iris
- 17202 Provide funding for IR Data Collection Upgrades
- 1100 Provide funding to BMDO common IR/CC Support
- 3207 Provide funding to support Project Hercules
- 710 OSD Reductions
- 5703 Support Contracts
- 1925 Gov Project Per & Supt

Total 107157

B. Other Program Funding Summary	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3360

C. Acquisition Strategy:

BMDO tasks the Services through Program Management Agreements to perform the required tasks in support of the BMD program, provides monthly reports, and performs quarterly reviews to verify and validate completed tasks.

In providing range and test facilities support to the MDAP Program managers, BMDO implements a process which:

- Maintains perspective of national technical test capabilities relative to all BMD developmental programs,
- Responds to MDAP program requirements,
- Makes maximum use of existing test resources where possible,
- Requires full coordination prior to development of new resources,
- Consolidates management of existing resources where possible and practical.

This process is executed through a variety of acquisition methods. Executing Agent Project Managers for the elements and tasks under this project include the three military services and the BMDO. Service Project Manager organizations specifically include the:

- U.S. Army Space and Missile Defense Command (USASMDC)
- U.S. Air Force Materiel Command
- U.S. Navy Office of Naval Research
- Navy Program Executive Officer (Theater Surface Combatants)
- U.S. Air Force Research Laboratory
- U.S. Army Corps of Engineers (USACE)
- U.S. Navy, Naval Facilities Engineering Command (NAVFAC)
- U.S. Army Program Executive Officer-Missile Defense

D. <u>Schedule Profile</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>

UNCLASSIFIED

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3360
--	--	-------------------------------

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.										
b.										
Subtotal Product Development:										

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.										
b.										
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. Test Facilities	Allotment	Various	15220						15220	
b. Test Ranges	Allotment	Various	29198						29198	
c. Sensors	Allotment	Various	16920						16920	
d. Wake Island	Allotment	Varrious	5867						5867	
e. Ranges Improve and Modernize	Allotment	Various	4673						4673	
f. Sea Based Data Collection	Allotment	Various	650						650	
g. HALO	Allotment	Various	4782						4782	
h. IR Data Collec Upgrades	Allotment	Varrious	17121						17121	
i. COBRA Ball Upgrade	Allotment	Various	81						81	
j. IR/CC Support	Allotment	Various	1100						1100	
k. Hercules	Allotment	Various	3207						3207	
l. OSD Reductions	Allotment	Varrious	710						710	
Subtotal Test and Evaluation:			99529						99529	

Remark:

MDA RDT&E COST ANALYSIS (R-3)	DATE February 2002
--	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 3360
---	---	------------------------

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. Support Contracts	Allotment	MDA	5703						5703	
b. GOV Project Per & Supt	Allotment	SMDC Army	1925						1925	
Subtotal Management Services:			7628						7628	

Remark:

Project Total Cost:			107157						107157	
---------------------	--	--	--------	--	--	--	--	--	--------	--

Remark:

UNCLASSIFIED

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2002
---	------------------------------

BUDGET ACTIVITY 4 - Program Definition and Risk Reduction	PE NUMBER AND TITLE 0603874C BMD Technical Operations	PROJECT 4000
--	--	-------------------------------

COST (In Thousands)	FY2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	Cost to Complete	Total Cost
4000 Program Operations	14635	0	0	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project funds three basic areas: 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 the Ballistic Missile Defense Organization located within the Washington D.C. area, as well as BMDO's Executing Agents within the US Army Space & Strategic Defense Command, US Army PEO Missile Defense, US Navy PEO for Theater Defense, US Air Force and the Joint National Integration Center. Related facility costs include rents, utilities, supplies, 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. BMDO has additional requirements to provide for foreign currency fluctuations on its limited number of foreign contracts, statutory requirements include funding for charges to canceled appropriations in accordance with Public Law 101-510.

Finally, assistance required to support 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 BMDO and Executing Agent government personnel. Typical efforts include cost estimating, security management, information management, technology integration across BMDO 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:

- 14635 Continue providing management and support for overhead/indirect fixed costs such as civilian payroll, travel, rents & utilities and supplies.
- Total 14635

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

MDA RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit) DATE **February 2002**

BUDGET ACTIVITY
4 - Program Definition and Risk Reduction

PE NUMBER AND TITLE
0603874C BMD Technical Operations

PROJECT
4000

C. Acquisition Strategy:
N/A

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