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

DATE: February 2000

BUDGET ACTIVITY: 4 - Demonstration and Validation

PE NUMBER AND TITLE: 0603871C NMD - DEM/VAL

PROJECT: 2400

COST *(In Thousands)*	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
2400 National Missile Defense	1678201	950248	1740238	849969	791700	688614	681174	Continuing	Continuing

A. Mission Description and Budget Item Justification

The National Missile Defense (NMD) program will be designed to protect the nation against long range ballistic missile threats. The NMD Program contributes to each of the three components of the nation's broad strategy to deal with proliferation: preventing and reducing the threat, deterring the threat, and defending against the threat.

The NMD Program has three objectives: 1) to develop and demonstrate an integrated system that has the potential capability to meet the threat requirement (for presentation in FY2000 at a Deployment Readiness Review (DRR)); 2) to complete system development and field an initial capability system by the end of FY2005 and an expanded capability by the end of FY2007 (if directed to do so after the DRR in FY2000); and 3) to assess the technical feasibility, schedule, and cost associated with maintaining a system development path which allows evolutionary upgrading of system capabilities to counter more complex threats.

During the Initial Development Phase, which culminates at the Deployment Readiness Review (DRR) in FY2000, the DoD will assess the maturity of the NMD technology and proposed system's potential operational effectiveness in support of a subsequent Presidential decision on deployment of an NMD system. During this initial phase the program develops and integrates the NMD elements into a system, demonstrates the "hit-to-kill" capability of the system, and prepares for initial deployment. If the program satisfies certain decision criteria at the DRR and the Department receives direction to deploy an initial system in Alaska by FY2005 and an expanded capability by FY 2007, the NMD Program Manager (PM) will implement the NMD System Deployment phase. This deployment phase beginning in FY2000, completes development and testing of the initial system, constructs the deployment sites, and deploys the system. All development activities are planned to be compliant with the Anti-Ballistic Missile (ABM) Treaty. The U.S. Government will seek any appropriate modifications to the ABM Treaty.

To execute the program, a competitively awarded Lead System Integrator (LSI) contract was awarded to Boeing North America in April 1998. The LSI is contractually accountable for meeting NMD system performance requirements, while the NMD PM implements and manages an accelerated and evolutionary acquisition strategy to design, develop, integrate, and test the NMD system.

The NMD system elements are comprised of a ground-based interceptor weapon system (consisting of a cannisterized kill vehicle and booster and a weapon support system), ground-based sensors, space-based sensors, and a Battle Management, Command, Control, and Communication (BM/C3) system. The ground-based sensors include the development of X-band radar and the upgrade of existing early warning radars. The BM/C3 system includes integration with existing national command and control systems, a ground communication network, and a communication system to transmit data to and from the interceptor while in flight. The NMD system will also use space-based assets for threat detection and tracking, such as the Air Force Defense Support Program (DSP), and eventually the Air Force Space Based Infrared System (SBIRS). SBIRS is an integral part of enhancing future NMD capabilities.

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NMD INTEGRATION provides for the Lead System Integrator (Boeing North America), the single largest contract in the NMD program, to develop and integrate the individual NMD elements into a cohesive NMD system. The LSI shall provide development and integration of system hardware and software to demonstrate the ability to achieve the C1 System Requirements and to provide the flexibility and robustness for a variety of deployment options. The C1 architecture includes up to 20 ground-based interceptors at a single site, a ground-based X-Band radar, upgraded early warning radars and DSP and eventually SBIRS. The program is being expanded to meet a larger and more realistic threat. The program will provide 100 ground based interceptors by the end of FY2007, provide an upgraded capability XBR, and support the upgrading of 5 early warning radar facilities. The LSI provides for ground and flight test evaluation of the NMD system design and element implementation to validate system performance. The LSI contractor will perform the necessary system-level trade studies to appropriately allocate element requirements with full consideration of Cost As an Independent Variable (CAIV). The LSI will operate and maintain NMD models and simulations to include ISTC, System HWIL, and LIDS. The LSI contractor maintains a primary and backup Exoatmospheric Kill Vehicle (EKV) development effort. The backup EKV will be maintained for risk mitigation until the primary EKV is sufficiently proven. Until booster development is complete, EKV flight tests will be flown on the Payload Launch Vehicle (PLV), which is a booster, comprised of a Minuteman II second and third stages. Development of the Commercial Off-the-Shelf (COTS) booster consists of integrating a Gemini-40 first stage and Orbus-1A second and third stages. The booster will be tested during three verification flights in FY00. BM/C3 incremental prototypes will be integrated and demonstrated in a distributed fashion at multiple locations, and assessed with user participation to refine and focus the BM/C3 development and system behavior. In FY99, the EKV, PLV and Integrated System Test Capability (ISTC) contracts were assumed by the LSI contractor. At the end of FY00, the last of the NMD legacy contracts, the GBR-P contract, will transition to the LSI contractor. The LSI will develop, test, and demonstrate prototype software upgrades and hardware changes to existing Early Warning Radars required to support the NMD mission.

SENSOR TECHNOLOGY includes research and development efforts for critical sensor components which support infrared surveillance, acquisition, tracking, and discrimination functions for use in the SBIRS Low system. Projects in radiation hardened electronics and spacecraft computers, focal plane arrays (FPAs), long-life cryogenic coolers, signal/data processing and optics are developing state-of-the-art technologies essential to operating in a space environment and viewing targets against the earth limb and space backgrounds. The projects provide enabling, risk reduction and cost reduction technologies for SBIRS Low.

The WEAPON SYSTEM(WS) formally called Ground-Based Interceptor (GBI) contracts (EKV and PLV) transitioned to the LSI in FY99. Before the EKV contracts were transitioned to the LSI, EKV sensor flight tests were successfully accomplished in 3Q/97 and 2Q/98. COTS booster development began in FY98 with expected completion late in FY00. The WS Project Management Office manages and provides specific Government Furnished Equipment (GFE) to include transportation, testing, and facilities maintenance. Additionally, this office will conduct Independent Verification and Validation (IV&V) of LSI WS hardware and software efforts and other Independent Performance Assessments as required. The Weapon System provides government oversight of the LSI Weapon System Integrated Product Team.

The BATTLE MANAGEMENT, COMMAND, CONTROL AND COMMUNICATIONS (BM/C3) contract transitioned to the LSI in FY98. In addition to providing government oversight of the LSI Command Control and Communications Integrated Product Team, the BM/C3 functional area will provide IV&V and Verification, Validation and Accreditation (VV&A) of BMC2, and technical oversight of the procurement of NMD Long-Haul Communication efforts.

X-BAND RADAR (XBR) is the primary sensor providing surveillance, acquisition, tracking, discrimination, fire control support, and kill assessment for the NMD system. The XBR development leverages off of the Theater Missile Defense Ground Based Radar (TMD-GBR) program. An XBR prototype, designated as GBR-P, installed at USAKA, Kwajalein Missile Range (KMR), participates in Risk Reduction Flights and Integrated Flight Tests. The XBR contract will continue to be

managed by the XBR Project Office until the contract expires in FY00. At that time, the XBR efforts will be managed by the LSI contractor, and the XBR Project Office provides government oversight of the LSI X-band radar Integrated Product Team.

UPGRADED EARLY WARNING RADARS (UEWR) hardware efforts and software upgrades were transitioned to the LSI in FY98. The UEWRs will detect, count and track the individual objects in a ballistic missile attack early in their trajectory. The UEWR data will be used for interceptor commit and other X-band radar cueing. Efforts include IV&V and VV&A along with independent discrimination analysis. The UEWR Project Office provides government oversight of the LSI UEWR Integrated Product Team.

SYSTEM ENGINEERING develops the NMD system-level performance and integration requirements as prescribed in the Capstone Requirements Document (CRD), and Operational Requirements Document (ORD), and then flows them down to the individual NMD elements. In addition, the Systems Engineer plans and directs Command and Control Simulations (C2Sims) in which analyses, simulations, and tests are performed. C2Sims address both system effectiveness and proposed NMD system architectures and concept of operations against near and far-term ballistic missile threats. The Systems Engineer develops functional definitions for the candidate deployment options needed to meet user requirements, and in this capacity, manages all interactions with the user in areas relating to requirements. In addition, the Systems Engineer focuses on system-level balancing, verification, and validation of the integrated NMD system. At the request of Ballistic Missile Defense Organization (BMDO), as well as OSD and other external agencies, the NMD System Engineer conducts ad hoc studies in support of treaty analysis, policy guidance, and other NMD derived missions. The Systems Engineering area provides government oversight of the LSI Systems Integration Integrated Product Team

DEPLOYMENT & SUSTAINMENT comprises development of plans and analysis to support system deployment and sustainment to include Manpower Personnel Training (MPT) analysis and maintenance and supply support planning. This includes identifying and executing critical actions and time-lines associated with fielding the NMD system. A key goal is reducing the time and risks inherent in such a deployment. Additionally, this effort includes developing environmental analyses and documentation; conducting siting analyses and supporting site selection; establishing facilities requirements, assessing existing facilities, and developing preliminary designs; analyzing the industrial base and assessing production capacities; and meeting other beneficial occupancy issues. This effort also coordinates and manages the GFE/GFS provided to the LSI. The Deployment Planning area manages the Production, Deployment and Sustainment Working Integrated Product Team and provides government oversight of the LSI Deployment Integrated Product Team.

SYSTEM TEST AND EVALUATION activities involve managing and overseeing the NMD test and evaluation program, including execution of the lethality ground and flight test programs, and development of program test documentation such as the Test and Evaluation Master Plan (TEMP). Managerial oversight and execution responsibilities ensure the following are available: 1) test infrastructure (including test ranges and instrumentation); 2) provides government oversight of LSI Ground-Based Test Models & Simulations 3) target development for sensor and intercept tests; and, 4) providing upgrades to government test facilities for the LSI. Management activities include development of the NMD TEMP, and Detailed Test Plans, and Post-Test Analysis Plans for each ground and flight test. Post-test evaluation, analysis, review and reporting are also provided for under this project. The responsibility to develop and maintain the Integrated System Test Capability (ISTC) transitioned to the LSI in FY99. The government maintains oversight of the LSI Test Integrated Product Team.

DISCRIMINATION provides the U.S. with the capability to generate high confidence target signatures for ballistic missile defenses. This is a critical adjunct to the design and evaluation of NMD system performance across the full spectrum of threats and engagement scenarios. This program provides signature collection sensors for live-fire missions and storage of the resulting test data. Additionally, predictive models of target signatures are developed as well as algorithms for the critical functions of discrimination, target handover and aimpoint selection.

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MANAGEMENT AND OPERATIONAL SUPPORT provides personnel and related support costs common to all NMD projects including support to the Office of the Director, BMDO and his staff located in Washington, DC, as well as BMDO's Executing Agents within the U.S. Army Space and Missile Defense Command, U.S. Army PEO Missile Defense, U.S. Navy PEO for Theater Defense, U.S. Air Force PEO office and the Joint National Test Facility. This project supports funding for overhead/indirect personnel costs, benefits and infrastructure costs such as rents, utilities and supplies. Additionally, this project maintains NMD Joint Project Office (JPO) operations. NMD JPO scientific, engineering and technical assistance activities are funded to provide required contractor support to the JPO. Additionally, Government salaries for NMD JPO personnel as well as Army NMD personnel in Huntsville are funded. Other Internal Operating Budget (IOB) costs such as travel, office expenditures, etc., are also provided through this project. The NMD JPO provides service headquarters type functions that are normally located in other appropriations (i.e., O & M accounts) such as personnel and support costs.

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.

FY 1999 Accomplishments:

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- 591013 NMD Integration: Includes $150M from the FY 1999 Ballistic Missile Defense Emergency Supplemental Appropriation that was allocated to the NMD program which is applied to the LSI contractor to continue development and integration of the NMD system in FY 1999. Transition of the EKV, PLV, and ISTC contracts to LSI contract was completed. Conducted element level Preliminary Design Reviews (PDR). Conducted NMD System Preliminary Design Review (SPDR). Prepared for IFT-3, the first intercept demonstration, which was conducted in early 1Q00. Conducted Risk Reduction Flights 5 and 6 (RRF-5 and RRF-6). Conducted LSI Integrated Distributed System (LIDS) run (2, 3). Began work on Integration Assembly Test and Checkout (IAT&C) facility at Redstone Arsenal. Continued System Integration Lab (SIL)/GBI Development Integration Lab (GDIL) construction and instrumentation.

- 590000 Includes $590M from Fy 1999 Emergency Supplemental that will fund FY 2000 LSI activities. See FY 2000 for description.

- 9786 Sensor Technology: Continued development and testing of Long Wave Infra-Red Focal Plane Arrays (LWIRFPA). Continued testing on prototype cryocoolers. Continued development of prototype contamination control device . Continued development, fabrication, and testing of advanced, radiation-hardened electronic components. Continued rad-hard visible star tracker effort.

- 146889 Weapon System: Integrated and fabricated EKV and PLV for IFT-3 and IFT-4. Completed all IFT-3 pre-launch activities. Transitioned PLV and EKV contracts to the LSI. Completed mission and launch control upgrades at the KMR EKV/PLV integration facility. Provided GFP boosters for PLV and sensor calibration facilities. Partially fabricated EKV for third intercept flight (IFT-5), incorporating technology improvements and lessons learned from IFTs 1 and 2. Supported conduct of and assessed weapon PDR. Continued Government portion of COTS booster development/preparations for three FY00 booster verification tests. Conducted Kwajalein Missile Range (KMR) silo modification and upgrades. Performed element level VV&A and IV&V efforts. Delivered readout electronics, and flight ready SHIELD and PET Focal Plane Arrays. Delivered 20/20GHz transceiver hardware to support IFT-5 3Q/00. Provided government oversight of the weapon system related efforts on the LSI contract.

- 21605 BM/C3: Conducted Government oversight of the LSI BMC3 development and deployment activities including system integration and test activities for Capability Increment 3A (CI-3A) in preparation for support of IFT-5, the first Integrated System Test. Continued development of Build Increment 1 (BI-1), integration of the 2nd IFICS Prototype at Kwajalein Missile Range (KMR), and support of NMD system tests by providing integrating BM/C3 products for IGT's 3 and 4, and IFT-3. Initiated design effort for NMD long haul and metropolitan communications network. Supported Cheyenne Mountain integration planning and provided User interaction with USSPACECOM. Supported BMC3 participation in C2 Simulations and Battle Planning Exercises. Continued international BMC3/UEWR technology experiments that demonstrate algorithms capable of improving target detection and sensitivity, identification and tracking.

- 34694 XBR: Participated in Radar Credible Target (RRF-6). Prepared for IFT-3, 1Q00. Completed development of GBR-P flight test software. Delivered software block 2.3. Validated GBR-P hardware and continued regression testing software. The XBR contract will continue to be managed by the XBR Program Office until the contract expires in FY00. At that time the LSI will continue development of the objective XBR. Maintained the GBR-P at KMR Performed element level VV&A and IV&V. Continued software algorithm development efforts. Conducted XBR Preliminary Design Review (PDR). Funding for this line supported Government LSI oversight.

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- 6263 UEWR: Completed transition of legacy technical effort to LSI contract. Managed the UEWR portion of the LSI contract (CPR analysis, CDRL review/comment, etc.). Supported LSI UEWR development efforts such as algorithm downselect and integration into the UEWR Test Article (UTA), assessment of DII-COE implementation strategy, and program definition/risk reduction. Delivered Test Representations and Advanced Algorithms. Funding for this line supported Government LSI oversight.

- 29186 System Engineering: Continued engineering and integration activities at the system level. Assessed and refined user requirements (CRD, ORD, and CONOPs). Continued C1/C2/C3 requirements refinement (NMD SRD). Updated NMD Cost Analysis Requirements Description (CARD) to support Program Life Cycle Cost Estimate reflecting LSI proposed architecture. Conducted NMD SPDR. Updated the NMD System Threat Assessment Report (STAR). Developed/updated detailed threat "design-to" and "analyze-to" parameters and scenarios. Conducted C2Sim exercises and tabletops. Continued integration with the SBIRS Program Office in support of the NMD program requirements. Performed nuclear environment calculations/requirements verification. Conducted data fusion/system discrimination development. Performed system verification, validation and accreditation (VV&A). Maintained independent validation and verification (IV&V) capability to perform system VV&A. Supported Government LSI oversight.

- 23128 Deployment & Sustainment: Refined the NMD Integrated Deployment Plan(IDP) and the NMD Capstone Site Activation Plan(CSAP) to reflect programmatic changes and refinements in the NMD architecture. Updated the Operational Suitability (OS) Assessment Report. Developed the Joint Manpower Estimate (JME). Conducted NMD Site Evaluation. Developed an integrated Facilities Siting and Environmental (FS&E) Acquisition Management Plan and schedule. Completed the 35% facilities design for tactical and tactical support facilities for WS & XBR. Continued to define facility requirements and master construction schedule. Supported the 60% Design Review. Continued to manage funding required for design and construction of NMD program related test and deployment facilities to meet 100% design prior to DRR. Published the Notice of Intent (NOI) for public notification. Scoping process was conducted to identify environmental concerns and issues addressed in the Environmental Impact Statement (EIS). Supported Site Specific Environment Analysis (EIS/EA). Finalized system and site specific Facility Requirements Documents (FRDs). Continued to evaluate the Industrial Base for C1 Deployment. Evaluated the Industrial Base for C2 deployment. Continued the Metrology projects for development of standards for the Infrared Sensors Managed GFE/GFS to support LSI efforts. Funding for this line supported Government LSI oversight

- 115565 System Test and Evaluation: Supported System Integration Testing at the ISTC. ISTC contract transition to the LSI was completed. IGT-3 and IGT-4 were initiated and completed. Updated the TEMP with support of the NMD System T&E Integrated Product Team (IPT). Supported program documentation efforts, pre-mission flight tests 3 & 4, pre-launch preparations, as well as Risk Reduction Flights (RRF) 5 and 6. Conduct Kodiak-2 Test to exercise UEWR Prototype at Beale AFB. Conducted oversight of IFT-3 preparations. Evaluated various post-test results. Completed VV&A of IFT-4 and 5 targets. Implemented lethality and live fire-testing plan. Coordinated test range infrastructure and upgrades to support EKV flight tests from KMR. Coordinated test range instrumentation upgrades and provided data collection and analysis for NMD testing. Oversaw LSI test program. Continued development and validation of Parametric Endo-Exoatmospheric Lethality Simulation (PEELS) model for system performance verification. Developed and procured backup target system. Funding for this line supported Government LSI oversight.

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- 400 Discrimination: Continued optical and radar data analysis for NMD system design and test. Provided discrimination algorithms to GBR, SBIRS, and GBI programs to counter advanced threats. Updated modeling capabilities in the NMD scenario.

- 2450 Systems Architecture and Engineering: Continued systems analysis work on NMD issues. Provided system-level capability to address emerging BM/C3 architectures and requirements in a synergistic manner across all NMD/TMD efforts and facilitated the translation of operational requirements to interoperable, affordable, evolvable, and supportable systems.

- 3000 Threat and Countermeasures: Continued development of threat system scenario descriptions.

- 700 Modeling and Simulations: Continued the development of Wargame 2000 simulation. The BMDO Data Centers continued to archive, manage, develop data products, distribute and provide remote access to all relevant BMDO test, experiment, M&S and wargame data.

- 1680 Test Resources: Provided ground test facility infrastructure and upgrades for NMD testing including: Integrated System Test Capability and the GBR HWIL at the Advanced Research Center; command/control technology evaluation at CERES and the JNTF ; lethality testing at the Hypersonic Ballistic Range G, Arnold Engineering Development Center (AEDC); and IR sensor testing at the 7V/10V Chamber at AEDC, aerodynamic testing at AEDC Hypervelocity Tunnel 9 and the Portable Optical Sensor Tester (POST) . Provided test range infrastructure and upgrades to support integrated system testing including: Kwajalein Missile Range instrumentation, launch control and silo upgrades, and data collection and analysis. Provided target launch support at Vandenberg AFB.

- 101842 Management and Operational Support: Continued providing management and support for overhead/indirect fixed costs, and continued to provide management and analysis support to the NMD program in areas such as cost/schedule/performance assessment, cost estimating and analysis, budget analysis and formulation, program planning and control, contract management.

Total 1678201

FY 2000 Planned Program:

- 522826 NMD Integration: Includes $117M from the 1999 Emergency Supplemental that the President requested as an emergent requirement in FY 2000. In addition, $590M that was previously designated as an emergency supplemental will be applied to the LSI contractor. Conduct four Integrated Flight Tests (IFT-3, 4, 5, and 6). IFT-3 is the first intercept demonstration. IFT-5 is the first Integrated System Flight Test, and will demonstrate the potential system capability to meet the threat requirement. Complete IAT&C facility at Redstone Arsenal. Complete GDIL/SIL. Initiate and complete three Integrated Ground Tests (IGT's 5, 6, 7) utilizing the ISTC at the Advanced Research Center. Conduct 3 LSI Integrated Development Systems (LIDS) runs (4, 5, and 6). Conduct three Booster Verification Tests (BV-1, 2, 3). Release BM/C3 Build Increment 1 software build. Prepare and complete documentation in preparation for the Deployment Readiness Review in 3Q00. Conduct Weapon System Critical Design Review (CDR). Conduct Risk Reduction Flight 7 (RRF-7). Conduct In Flight Interceptor Communication System (IFICS) hardware CDR.

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- 5484 Sensor Technology: Continue development and testing of Long Wave Infrared Radar (LWIR) FPAs with extended wavelength cut-off; initiate a focal plane producibility effort to support fabrication of flight units and reduce manufacturing costs. Initiate FPA program for SBIRS Low surveillance mission. Continue visible array rad hard star tracker program. Continue FPA performance testing. Continue testing and development of cryocooler efforts. Continue development of cryogenic integration technologies. Initiate development of 10K cryocooler prototype. Continue development of rad hard electronics components.

- 36652 Weapon System: Provide technical oversight for three booster verification tests to prepare for transition from PLV to COTS booster. Conduct IFT-3 and provide support for the NMD IFT-4 and Integrated System Test (IFT-5). Support IFT-6 and IGT's 5, 6,7. Funding for this line supports Government LSI oversight. Develop tactical CLE Build 1 and Build 2. Support BV-1 and BV-2 flight test with Build 1 and Build 2 of Command Launch Equipment (CLE) HW/SW. Support pre-mission testing. Complete silo upgrade at KMR. Conduct IV&V and VV&A assessments. Support conduct of and assess Weapon System CDR. Conduct production planning. Oversee Weapon System IPT activities.

- 25982 BM/C3: Conduct BMC3 engineering and integration activities to support BM/C3 development. Provide technical oversight for capability increment-3A to support IFT's 4 & 5 in 2Q and 3Q/00, and Build Increment-1 to support the NMD DRR in 3Q FY00. Support IGT's 5, 6, 7 and IFT's-3, 4, 5, and 6. Complete IFICS Prototype integration at KMR.. Support, plan, and coordinate Cheyenne Mountain Operations Center (CMOC) integration. Provide technical oversight of the procurement of Long-Haul Communication. Conduct IV&V and VV&A assessments. Initiate support for production, fielding and deployment of the BMC3 Element. Funding for this line supports Government LSI oversight.

- 27939 XBR: Participate in IFT-3 & IFT-4 with GBR-P on-line, and the Radar Credible Target-2 mission (RRF-7) and IFT-5 and IFT-6 with GBR-P in-line. Complete system segment specification test and evaluation for government acceptance of XBR-P from Raytheon. Complete necessary requirements to provide GBR-P as Government Furnished Property to LSI. Transition XBR contract management from the XBR Program Office to the LSI. Provide management of the XBR portion of the LSI contract. Conduct IDR for C1 XBR. Conduct IV&V and VV&A assessments. Funding for this line supports Government LSI oversight.

- 9585 UEWR: Continue to support LSI's UEWR development activities and preparation for the critical NMD milestones, including the IST and DRR. Continue to participate in and support the Real Time DII-COE TWG/IPT. Support system flight and ground test planning, execution and limited post-test independent analysis. Support evaluation of algorithms and integration into the deployable system. Funding for this line supports Government LSI oversight.

- 33005 System Engineering: Continue engineering and integration activities at the system level. Assess and refine user requirements (CRD, ORD, and CONOPs). Continue C1/C2/C3 requirement refinement (NMD SRD). Update NMD CARDs against technical requirements. Conduct NMD System Engineering Interim Design Review in 2/3Q/00 and support the Deployment Readiness Review in 3Q/00. Update the NMD STAR. Develop/update detailed threat "design-to" and "analyze-to" parameters and scenarios. Conduct C2Sim exercises and tabletops (C2Sim99 in 1Q/00). Continue integration with the SBIRS Program Office in support of the NMD program requirements. Perform nuclear environment calculations/requirements verification. Conduct data fusion/system discrimination development. Coordinate system VV&A. Continue to maintain IV&V capability to perform system VV&A. Funding for this line supports Government LSI oversight.

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- 25359 Deployment & Sustainment: Implement the acquisition logistics strategy and analysis process which enables the Government to properly assess the LSI's acquisition logistics program. Continue development of the initial NMD System sustainment program planning. Publish the NMD IDP and the NMD CSAP with changes driven by Expanded C1. Update the O&S Assessment Report. Update the Joint Manpower Estimate (JME) with Expanded C1 manpower impacts. Continue facility design based on impacts of Expanded C1. Support 90% Design Review. Prepare advance planning/pre-award documentation for future award of NMD System deployment construction contracts. Conduct public hearings on the EIS at the candidate interceptor and radar sites. Complete National Environmental Policy Act (NEPA) environmental compliance process, to include any additional actions necessary for Expanded C1 deployment. Update Environmental Safety and Health (ESH) plans. Evaluate the Industrial Base's ability achieve Expanded C1 Deployment. Develop and issue System Producibility and Manufacturing (P&M) Plans updated for Expanded C1. Implement a System Safety Program Plan. Provide and manage Government Furnished Equipment (GFE) and Government Furnished Services (GFS). Implement approach to meeting Test, Training and Exercise Capability requirements. Review MPT issues and ensure MPT is on track and ready for IOC. Funding for this line supports Government LSI oversight.

- 138422 System Test and Evaluation: Support IGTs 5, 6 and 7 at the ISTC. Update TEMP with support of the NMD System T&E IPT. Complete program documentation, pre-mission flight tests for IFT-4, IFT-5 and IFT-6, pre-launch preparations and oversee execution of IFT-3, 4, 5, 6 and RRF 7, and a Target of Opportunity at Kodiak. Evaluate post-test results to support DRR data gathering. Complete VV&A of IFT 6 and 7 targets and accredit the ISTC. Implement lethality and live fire testing plan. Coordinate test range infrastructure and upgrades to support EKV flight test from KMR. Coordinate test range instrumentation upgrades and provide data collection and analysis for NMD testing. Conduct target launches for IFT-3, 4, 5 and 6 from Vandenberg AFB (VAFB). Support two Booster Verification Tests at VAFB, and one at KMR. Conduct orbital sub-orbital program (OSP) demonstration flight of new targets launch program. Develop and procure backup target Multi Service Launch System (MSLS). Funding for this line supports Government LSI oversight.

- 7000 Special Studies: Follow-on NMD architectures study.

- 494 Test Resources: Provide ground facility infrastructure and upgrades for NMD testing including: lethality testing at the AEDC Range G; and IR sensor testing at the 7V/10V Chamber at AEDC, aerodynamic testing at AEDC Hypervelocity Tunnel; and POST.

- 117500 Management and Operational Support: Continue providing management and support for overhead/indirect fixed costs, and continue to provide management and analysis support to the NMD program in areas such as cost/schedule/performance assessment, cost estimating and analysis, budget analysis and formulation, program planning and control, contract management.

Total 950248

FY 2001 Planned Program:

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- 1367821 NMD Integration: Prepare for Defense Acquisition Board (DAB) review. Conduct NMD System level Critical Design Review (CDR). Conduct C2 Ship Readiness Review (SRR). Conduct three Integrated Flight Tests (7, 8, and 9), two Risk Reduction Flights (8, 9), one LIDS run (6), and three Integrated Ground Tests (8, 9, and 10). IFT-7 will be the first mating of an EKV with the tactical booster. An XBR and UEWR Critical Design Review (CDR) will be held. UEWR software releases 5 & 6 will be implemented. A Build Increment #2 (BM/C3) Readiness Review will be conducted. Complete GBR contract transition to LSI. Participate in the NMD integrated system test IFT-7 and IFT-8, and IFT-9 with GBR-P in-line. Continue GBR algorithm development to meet C2/C3 requirements. Continue to provide oversight of the LSI's UEWR development and test activities and support award of the LSI contract options beyond the 3-year base period of the contract.

- 9806 Sensor Technology: Deliver Lot 3(final) FPAs of LWIR focal plane program. Initiate a focal plane producibility effort to support fabrication of flight units and reduce manufacturing costs. Continue Silicon FPA program for SBIRS Low. Continue visible array rad hard star tracker program; continue FPA performance testing. Complete cryocooler efforts through life and performance testing. Continue development of cryogenic integration technologies in cooperation with SBIRS Low contractual designs. Continue performance and life testing of cryocoolers. Continue development of cryocooler prototype. Continue development of rad hard electronics components/devices. Flight test a space optics cleaner prototype and finalize the design.

- 19601 Weapon System: Monitor EKV flight unit integration for IFTs 7, 8, 9, RRFs, and pre-mission flight tests. Oversee completion of COTS booster-EKV integration for IFTs 7, 8, 9. Support IFTs 7-9 conduct and post test data reduction. Management and oversight of LSI weapon system efforts. Conduct IV&V and VV&A assessments. Funding for this line supports Government LSI oversight.

- 17567 BM/C3: Conduct Government oversight of the LSI BMC3 development and deployment activities including provision of BI-1 to support IFTs -8, 9 and 10. Continue technical oversight of engineering and acquisition activities for NMD long haul communications. Conduct IV&V and VV&A assessments. Support initiation of Cheyenne Mountain integration and provide user interaction with USSPACECOM. Support BMC3 participation in C2 Simulations and Battle Planning Exercises. Continue support for production, fielding and deployment of the BMC3 Element.

- 11301 XBR: Validate XBR hardware and software. Support system flight and ground test planning, execution, and limited post-test independent analysis. Support CAIV and trade studies as required. Support evaluation of algorithms and integration into the deployable system. Support system flight and ground test planning, execution and limited post-test independent analysis. Support CAIV and trade studies as required. Support evaluation of algorithms and integration into the deployable system. Funding for this line supports Government LSI oversight. Conduct IV&V and VV&A assessments.

- 7465 UEWR: Provide oversight of the UEWR portion of the LSI contract (CPR analysis, CDRL review/comments, etc.). Continue Real Time DII-COE evaluation for UEWR. Support system flight and ground test planning, execution and limited post-test independent analysis. Support CAIV and trade studies as required. Support evaluation of algorithms and integration into the deployable system. Funding for this line supports Government LSI oversight.

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- 30340 System Engineering: Continue JPO level system engineering and integration activities. Assess and refine user requirements (CRD, ORD, and CONOPs). Continue requirement refinement for NMD SRD. Update NMD CARDs against technical requirements. Analyze results of the Deployment Readiness Review. Conduct System CDR in 2Q/01. Update the NMD STAR. Develop/update detailed threat "design-to" and "analyze-to" parameters and scenarios. Conduct C2Sim exercises and tabletops (C2Sim00 in 1Q/01). Continue integration with the SBIRS Program Office in support of the NMD program requirements. Perform nuclear environment calculations/requirements verification. Conduct data fusion/system discrimination development. Coordinate system VV&A. Maintain IV&V capability to perform system VV&A. Funding for this line supports Government LSI oversight.

- 30793 Deployment & Sustainment: Continue the development of NMD System sustainment program planning to include maintenance and supply support for the Expanded C1 architecture. Complete facility design. Oversee construction contractor and site preparation and initiate the Site Activation Task Force, if a decision is made to deploy the NMD Expanded C1 System. Complete element RAM and supportability testability data and issue analysis reports. Provide FY02 Human System Integration (HIS) domain assessment criteria to Service Components for review. Elevate Independent HSI Domain Assessment Reports to JPO risk management IPT, identifying cost, schedule, and performance concerns, issues, and recommended risk mitigation. Develop plan for employing the Test, Training, and Exercise Capability. Review MPT Issues & ensure MPT is on track to provide trained personnel for IOC. Develop and issue System P&M Plans. Continue to track industrial base capacity. Funding for this line supports Government LSI oversight.

- 115569 System Test and Evaluation: Support IGT 8, 9, 10. Update TEMP with support of the NMD System T&E IPT. Complete program documentation, pre-mission flights for IFT-7, 8 & 9, pre-launch preparations and oversee execution of IFTs 7, 8 and 9. Evaluate post-test results. Oversee Risk Reduction Flights. Conduct pre-mission work. Complete VV&A of IFT 8 and 9 targets and re-accredit the ISTC. Continue lethality and live fire testing plan. Coordinate test range infrastructure and upgrades to support EKV flight test from Kwajalein Missile Range (KMR). Coordinate Test range instrumentation upgrades and provide data collection and analysis for NMD testing. Conduct target launches for IFT 7, 8 and 9 from Vandenberg AFB. Oversee LSI test program. Funding for this line supports Government LSI oversight.

- 474 Test Resources: Provide ground facility infrastructure and upgrades for NMD testing including: aerothermal testing at Tunnel 9; lethality testing at the AEDC Range G; and IR sensor testing at the 7V/10V Chamber at AEDC, and POST.

- 129501 Management and Operational Support: Continue providing management and support for overhead/indirect fixed costs, and continue to provide management and analysis support to the NMD program in areas such as cost/schedule/performance assessment, cost estimating and analysis, budget analysis and formulation, program planning and control, contract management.

Total 1740238

B. Program Change Summary	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 2000 PB)	1533532*	836555	866680

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Adjustments to Appropriated Value			
Appropriated Value	1533532*		
a. Congressional General Reductions	-3284	-5209	
b. STTR			
c. Internal Reprogramming	2670	1902	
d. Omnibus or Other Above Threshold Reductions			
e. 1999 BMD Emergency Supplemental	140000**	117000***	
f. Rescissions/Adjustments	5283		526086
g. Adjustments to Budget Years Since FY 2000 PB			347472
Current Budget Submit (FY 2001 / 2002 PB)	1678201	950248	1740238

*Includes $600 million FY99 supplemental appropriation. $150 million was executed in FY99 and $450 million will be executed in FY00.
** $140 million was reallocated to NMD and will be executed in FY00.
***President designated this as an emergency requirement in FY00 and Congress specified an additional $117 million from the FY99 supplemental be provided to NMD.

Change Summary Explanation:

Funding: FY99 – OSD Reductions, 1999 BMD Emergency Supplemental Appropriation Additions, BMDO Management Account Re-programming.

FY00 – OSD Reductions, 1999 BMD Emergency Supplemental Appropriation Additions.
FY01 – Procurement redesignated to RDT&E based on refined estimate.

Schedule: S/PDR moved from 3Q FY99 to 4Q FY99
IGT-4 moved from 3Q FY99 to 4Q FY99
IFT-3 moved from 3Q FY99 to 1Q FY00
IFT-4 moved from 4Q FY99 to 2Q FY00

Technical: N/A

C. **Other Program Funding Summary**	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost
PE 0603871C NMD MILCON Design	9669	15000	14500						39169
PE0603871C NMD MINOR MILCON			1995	2000	2000	2000	0		8000
PE 0603871C NMD MILCON Construction			85100	189940	124450	36350	15300		451135
PE 0208871C NMD Procurement			74530	1536483	1221549	1238207	1078649	1655822	6832663

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D. Acquisition Strategy: The Initial Development Phase includes activities from the original program: development and integration of the system elements, and demonstration of system capabilities. Activities added to this phase include those necessary to plan and implement the revised program from FY2000 to FY2005 and to accelerate deployment if necessary. This phase culminates in the previously scheduled Deployment Readiness Review (DRR) in FY2000, at which the DoD will assess the maturity of the NMD technology and proposed system's potential operational effectiveness in support of a subsequent Presidential decision on deployment of an NMD system. The planned activities between FY2000 and FY2007 are focused on completing development and deployment of a Capability-1 system by 2005 and an Expanded C1 system by 2007. In addition, some activities are dedicated to assessing the technical feasibility, schedule, and cost associated with evolving the system to counter more complex threats.

E. Schedule Profile	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Engineering Milestones								
a. NMD S/PDR		4Q						
b. NMD DRR			3Q					
c. Treaty/HNA			3Q					
d. NMD DAB				3Q				
e. NMD S/CDR				2Q				
f. Weapon PDR		1Q						
g. Weapon CDR			2Q					
h. Weapon ATP						3Q		
i. XBR PDR		3Q						
j. XBR CDR				1Q				
k. XBR ATP				3Q				
l. UEWR PDR		3Q						
m. NMD DAB						2Q		
	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
n. BMC3 IFICS H/W CDR			3Q					
o. UEWR CDR				2Q				
p. Site NOI		1Q						
q. Site Environmental Impact Study Complete			3Q					
r. Site Design Complete			3Q					
s. Site Construction Complete							4Q	

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Test and Evaluation Milestones								
t. C2 Sim 97B	1Q							
u. C2Sim 98		1Q						
v. C2Sim 99			1Q					
w. C2Sim 00				1Q				
x. C2Sim 01					1Q			
y. IFT-2	2Q							
z. BM/C3 Capability Increment 3	2Q							
aa. IGT-1A	3Q							
bb. IFT-3			1Q					
cc. IFT-4			2Q					
dd. BM/C3 Capability Increment 3A		2Q						
ee. IGT-3		2Q						
ff. IGT-4		4Q						
gg. IGT-5			1Q					
hh. IGT-6			2Q					
ii. IFT-5			3Q					
jj. BV-1			2Q					
kk. BV-2			3Q					
ll. BV-3			4Q					
mm. IGT-7			4Q					
nn. IFT-6			4Q					
oo. BM/C3 Build Increment 1			2Q					
pp. BM/C3 Build Increment 2				2Q				
	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
qq. IFT-7				2Q				
rr. IFT-8				3Q				
ss. IFT-9				4Q				
tt. IFT-10					1Q			
uu. IGT-8				1Q				
vv. IGT-9				3Q				
ww. IGT-10				1Q				

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Contract Milestones								
xx. BMC3 Contract Transition	4Q							
yy. PLV Contract Transition		4Q						
zz. EKV Downselect		1Q						
aaa. NMD Lead System Integrator Contract Award	3Q							
bbb. EKV Contract Transition		2Q						
ccc. GBR-P Contract Transition			4Q					
ddd. SEI Contract Transition	3Q							
eee. UEWR Contract Transition		2Q						

BMDO RDT&E COST ANALYSIS (R-3)

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PE NUMBER AND TITLE: 0603871C NMD - DEM/VAL

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
NMD INTEGRATION												
	CPAF	Boeing*	199815	1181013	N/A	522826	N/A	1367821	N/A	CONT	TBD	TBD
WEAPON SYSTEM												
	CPFF	Raytheon	246315	31175	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPFF	Boeing	255394	37600	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPIF	Lockheed	193944	45200	N/A	0	N/A	0	N/A	0	TBD	TBD
	TM	NRC	6269	3792	N/A	6315	N/A	TBD	N/A	CONT	TBD	TBD
	CPFF	Sparta	5642	1525	N/A	2138	N/A	TBD	N/A	CONT	TBD	TBD
	TM	Mevatec	583	2307	N/A	5126	N/A	TBD	N/A	CONT	TBD	TBD
	CPFF	SY Technology	4375	1662	N/A	653	N/A	TBD	N/A	CONT	TBD	TBD
	TM	TBE	13202	4677	N/A	4735	N/A	TBD	N/A	CONT	TBD	TBD
	CPFF	Stone Engineer	730	1795	N/A	1917	N/A	TBD	N/A	CONT	TBD	TBD
	CPFF	Tybrin	0	100	N/A	0	N/A	0	N/A	0	TBD	TBD
	N/A	OGA's	9444	15966	N/A	15069	N/A	18902	N/A	CONT	TBD	TBD
	TBD	Misc Contracts	19244	1090	N/A	699	N/A	699	N/A	CONT	TBD	TBD
BM/C3												
	N/A	NWSC	3900	4476	N/A	1000	N/A	800	N/A	CONT	TBD	TBD
	CPAF	TRW	9401	3623	N/A	4400	N/A	4100	N/A	CONT	TBD	TBD
	FFRDC	MITRE Corp.	7587	1875	N/A	2328	N/A	1894	N/A	CONT	TBD	TBD
	BPA (ITSP)	Sencom (ITSP)	4749	1348	N/A	1311	N/A	1300	N/A	CONT	TBD	TBD
	CPFF	Sparta	2717	2376	N/A	2583	N/A	3206	N/A	CONT	TBD	TBD
	TM	NRC	3656	1382	N/A	450	N/A	1250	N/A	CONT	TBD	TBD
	MIPR	GFE	0	1288	N/A	2700	N/A	0	N/A	0	TBD	TBD
	TBD	Misc Contracts	0	2768	N/A	6210	N/A	3198	N/A	CONT	TBD	TBD
	N/A	DISA	108	1320	N/A	5000	N/A	1819	N/A	CONT	TBD	TBD
	N/A	USASMDC	0	1149	N/A	0	N/A	0	N/A	0	TBD	TBD
XBR												
	CPFF	Raytheon	141530	14041	N/A	12039	N/A	0	N/A	N/A	TBD	TBD
	CPAF	TBE	7941	2900	N/A	2900	N/A	2900	N/A	CONT	TBD	TBD
	CPAF	Colsa	13215	2024	N/A	2024	N/A	2024	N/A	CONT	TBD	TBD

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	CPAF	NRC	2810	1925	N/A	1925	N/A	1925	N/A	0	TBD	TBD
	MIPR	MITRE (Lincoln Labs)	9500	2150	N/A	2150	N/A	2150	N/A	CONT	TBD	TBD
	CPAF	Raytheon	5605	2905	N/A	0	N/A	0	N/A	CONT	TBD	TBD
	N/A	Misc	10521	2099	N/A	1428	N/A	1302	N/A	CONT	TBD	TBD
	N/A	Misc/OGA	0	6650	N/A	5473	N/A	1000	N/A	CONT	TBD	TBD
UEWR												
	MIPR	MITRE	8574	3068	N/A	5443	N/A	4300	N/A	4200	TBD	TBD
	BPA (ITSP)	SENCOM	3144	1621	N/A	2445	N/A	2200	N/A	2400	TBD	TBD
	BPA (ITSP)	TECOLOTE	888	476	N/A	223	N/A	200	N/A	500	TBD	TBD
	GSA	FEDSIM (STA)	330	130	N/A	0	N/A	0	N/A	0	TBD	TBD
	BPA (ITSP)	STA	0	0	N/A	200	N/A	200	N/A	200	TBD	TBD
	MIPR	MIT Lincoln Lab	75	350	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPAF	TRW @ JNTF	325	319	11/99	574	N/A	0	N/A	0	TBD	TBD
	N/A	Misc.	4047	299	N/A	700	N/A	565	N/A	0	TBD	TBD
SENSOR TECH												
	N/A	Cubic	0	340	N/A	25	N/A	0	N/A	0	TBD	TBD
	CPAF	Ball	0	50	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPFF	Raytheon	300	359	N/A	650	N/A	706	N/A	CONT	TBD	TBD
	N/A	Phillips	0	640	N/A	1047	N/A	760	N/A	0	TBD	TBD
	MIPR	AFRL	4135	1630	N/A	718	N/A	1200	N/A	CONT	TBD	TBD
	CPFF	TRW	0	116	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPAF	Dynacs	0	225	N/A	92	N/A	250	N/A	0	TBD	TBD
	CPFF	Swales	750	35	N/A	192	N/A	100	N/A	CONT	TBD	TBD
	CPAF	Ball	3345	309	N/A	0	N/A	800	N/A	CONT	TBD	TBD
	CPAF	Ball	0	255	N/A	0	N/A	260	N/A	0	TBD	TBD
	CPFF	Raytheon	874	1370	N/A	1720	N/A	1200	N/A	CONT	TBD	TBD
	CPAF	Rockwell	2030	1250	N/A	1040	N/A	1080	N/A	CONT	TBD	TBD
	N/A	USASMDC	3276	1020	N/A	0	N/A	1000	N/A	0	TBD	TBD
	CPFF	NRC	0	220	N/A	0	N/A	500	N/A	0	TBD	TBD
	N/A	MRC	404	782	N/A	0	N/A	800	N/A	CONT	TBD	TBD
	MIPR	SPAWAR	0	410	N/A	0	N/A	400	N/A	0	TBD	TBD
	N/A	TBE	0	95	N/A	0	N/A	100	N/A	0	TBD	TBD
	N/A	ADI	0	400	N/A	0	N/A	450	N/A	0	TBD	TBD
	N/A	Raytheon	0	280	N/A	0	N/A	200	N/A	0	TBD	TBD
Subtotal Product Development:			1210694	1400250		628468		1433561		7300	TBD	TBD

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II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
SYSTEM ENGINEERING												
	CPFF	BMD/CSC	79824	14891	N/A	14750	N/A	15500	N/A	CONT	TBD	TBD
	N/A	USSPACECOM	4859	2615	N/A	0	N/A	0	N/A	CONT	TBD	TBD
	N/A	JNTF	11774	2089	N/A	4700	N/A	4200	N/A	CONT	TBD	TBD
	MIPR	DSWA	4965	1450	N/A	0	N/A	0	N/A	CONT	TBD	TBD
	N/A	USAF/SMC/ SBIRS	1000	1140	N/A	2500	N/A	0	N/A	CONT	TBD	TBD
	N/A	NSWC	1017	200	N/A	5000	N/A	4200	N/A	CONT	TBD	TBD
	N/A	Threat and CM	3515	282	N/A	2290	N/A	2500	N/A	CONT	TBD	TBD
	MIPR	POET	48	815	N/A	0	N/A	0	N/A	CONT	TBD	TBD
	MIPR	MIT/Lincoln Lab	0	5000	N/A	3575	N/A	2500	N/A	CONT	TBD	TBD
	N/A	Misc	0	704	N/A	190	N/A	0	N/A	0	TBD	TBD
	N/A	DTRA	0	0	N/A	0	N/A	1440	N/A	CONT	TBD	TBD
DEPLOYMENT & SUSTAINMENT PLANNING												
	MIPR	NIST	1939	2662	N/A	2880	N/A	2970	N/A	CONT	TBD	TBD
	N/A	USAF/SMC	1215	10000	N/A	1180	N/A	5800	N/A	CONT	TBD	TBD
	N/A	USSPACECOM	3690	9370	N/A	13618	N/A	15500	N/A	CONT	TBD	TBD
	CPFF	TBD	2610	0	N/A	0	N/A	0	N/A	CONT	TBD	TBD
	MIPR	USA Corp of Eng	1100	1096	N/A	1681	N/A	2523	N/A	CONT	TBD	TBD
	TBD	Misc contracts	8873	0	N/A	0	N/A	0	N/A	CONT	TBD	TBD
	MIPR	USASMDC	0	0	N/A	6000	N/A	4000	N/A	CONT	TBD	TBD
SPECIAL STUDIES	N/A	TBD	0	0	N/A	7000	N/A	0	N/A	0	TBD	TBD
MANAGEMENT AND OPERATIONAL SUPPORT												
	CPAF/CPFF	CSC	69387	31841	N/A	33447	N/A	43224	N/A	CONT	TBD	TBD
	N/A	SFAE-MD	32069	26287	N/A	28824	N/A	17834	N/A	CONT	TBD	TBD
	N/A	GOVT PERS	5715	3672	N/A	6159	N/A	6000	N/A	CONT	TBD	TBD

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	N/A	Misc RES.	9331	0	N/A	0	N/A	0	N/A	0	TBD	TBD
	N/A	USSPACECOM	0	4946	N/A	11665	N/A	14000	N/A	CONT	TBD	TBD
	N/A	Operational accounts	69057	35096	N/A	29895	N/A	42733	N/A	CONT	TBD	TBD
	N/A	Mgt account	0	0	N/A	1800	N/A	0	N/A	0	TBD	TBD
	N/A	GOVT PERS (HSV)	0	0	N/A	5710	N/A	5710	N/A	CONT	TBD	TBD
DISCRIMINATION												
	CPFF via NRL	PRA	17932	400	2Q99	0	N/A	0	N/A	0	TBD	TBD
SYSTEM ARCH AND ENGINEERING												
		Misc contracts	1744	2450	N/A	0	N/A	0	N/A	0	TBD	TBD
THREAT AND COUNTERMEASURE												
	N/A	Misc contracts	10269	3000	N/A	0	N/A	0	N/A	0	TBD	TBD
Subtotal Support Costs:			341933	160006		182864		190634			TBD	TBD

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
TEST AND EVALUATION												
	CPAF/TM	TBE	29090	15472	N/A	1472	N/A	2042	N/A	CONT	TBD	TBD
	CPFF	Colsa	10965	16766	N/A	5687	N/A	6750	N/A	CONT	TBD	TBD
	CPFF	Boeing	7400	1380	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPFF	Raytheon	5900	1000	N/A	500	N/A	0	N/A	0	TBD	TBD
	CPAF	TRW	246	0	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPFF	Raytheon	2900	0	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPAF	SAIC	1616	715	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPAF	Nichols	3447	0	N/A	0	N/A	3200	N/A	CONT	TBD	TBD
	MIPR	USAKA	15866	10855	N/A	12866	N/A	20000	N/A	CONT	TBD	TBD

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PROJECT: 2400

	FFRDC/MIPR	Sandia	4147	0	N/A	0	N/A	0	N/A	0	TBD	TBD
	OGA/MIPR	USASMDC	2910	0	N/A	900	N/A	1000	N/A	CONT	TBD	TBD
	OGA/MIPR	JNTF	1110	575	N/A	314	N/A	0	N/A	0	TBD	TBD
	OGA/MIPR	NRL	200	1771	N/A	1679	N/A	0	N/A	0	TBD	TBD
	TBD	Misc contracts	71851	0	N/A	200	N/A	0	N/A	0	TBD	TBD
	MIPR	VAFB	0	760	N/A	2001	N/A	0	N/A	0	TBD	TBD
	TM	MEVATEC	0	1181	N/A	2640	N/A	3000	N/A	CONT	TBD	TBD
	MIPR	Space&Msl Cmd	0	327	N/A	483	N/A	600	N/A	CONT	TBD	TBD
	CPFF	Lockheed MMS	0	3020	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPFF	CAS	0	250	N/A	0	N/A	0	N/A	0	TBD	TBD
	CPFF	SYTECH	0	600	N/A	300	N/A	400	N/A	CONT	TBD	TBD
	OGA/MIPR	SBIRS SPO	0	1531	N/A	1300	N/A	600	N/A	CONT	TBD	TBD
	MIPR	AMCOM	0	2110	N/A	200	N/A	0	N/A	0	TBD	TBD
	MIPR	USARSPACE	0	620	N/A	400	N/A	0	N/A	0	TBD	TBD
	MIPR	Eglin AFB	0	1622	N/A	300	N/A	0	N/A	0	TBD	TBD
	N/A	SATCOM	0	480	N/A	734	N/A	0	N/A	0	TBD	TBD
	OGA/MIPR	OGAs	0	0	N/A	2017	N/A	4058	N/A	CONT	TBD	TBD
	N/A	VRC	0	1660	N/A	1160	N/A	1860	N/A	CONT	TBD	TBD
	N/A	EAC	0	250	N/A	250	N/A	250	N/A	CONT	TBD	TBD
	N/A	TEXCOM	0	390	N/A	390	N/A	390	N/A	CONT	TBD	TBD
	N/A	HRED	0	120	N/A	120	N/A	120	N/A	CONT	TBD	TBD
	N/A	SLAD	0	160	N/A	160	N/A	160	N/A	CONT	TBD	TBD
	N/A	CEI	0	1500	N/A	1000	N/A	1590	N/A	CONT	TBD	TBD
	CPFF	COLSA	0	550	N/A	550	N/A	550	N/A	CONT	TBD	TBD
	CPFF	TRW	0	1770	N/A	1770	N/A	1830	N/A	CONT	TBD	TBD
	N/A	VARIOUS OGA'S	0	823	N/A	823	N/A	823	N/A	CONT	TBD	TBD
	CPFF	SAIC	0	662	N/A	662	N/A	782	N/A	CONT	TBD	TBD
	MIPR	MIT LLNL	0	1350	N/A	3130	N/A	2295	N/A	CONT	TBD	TBD
	CPFF	ITT	0	630	N/A	954	N/A	1917	N/A	CONT	TBD	TBD
	OGA/MIPR	AEDC	0	1600	N/A	2150	N/A	2365	N/A	CONT	TBD	TBD
	N/A	SANDIA	0	2120	N/A	3815	N/A	3345	N/A	CONT	TBD	TBD
	N/A	MEVATEC	0	60	N/A	75	N/A	75	N/A	CONT	TBD	TBD
	N/A	TBE	0	200	N/A	676	N/A	950	N/A	CONT	TBD	TBD
	N/A	SMDC	0	40	N/A	83	N/A	93	N/A	CONT	TBD	TBD
	N/A	NICOLS	0	0	N/A	10	N/A	18	N/A	CONT	TBD	TBD
NMD TARGETS												
	FFRDC/MIPR	Sandia	43734	4734	N/A	34474	N/A	6273	N/A	CONT	TBD	TBD

BMDO RDT&E COST ANALYSIS (R-3)

DATE: February 2000

BUDGET ACTIVITY: 4 - Demonstration and Validation

PE NUMBER AND TITLE: 0603871C NMD - DEM/VAL

PROJECT: 2400

	OGA/MIPR	USASMDC	1754	1978	N/A	2473	N/A	1975	N/A	CONT	TBD	TBD
	OGA/MIPR	SMC	11483	30534	N/A	47824	N/A	43900	N/A	CONT	TBD	TBD
	MIPR	USASMDC	0	1454	N/A	1730	N/A	2058	N/A	CONT	TBD	TBD
	N/A	VARIOUS OGA	0	1945	N/A	150	N/A	300	N/A	CONT	TBD	TBD
MODELLING AND SIMULATION												
	N/A	USASMDC	3190	700	N/A	0	N/A	0	N/A	0	TBD	TBD
TEST RESOURCES												
	N/A	Misc contracts	13300	1680	N/A	494	N/A	474	N/A	CONT	TBD	15948
Subtotal Test and Evaluation:			231109	117945		138916		116043			TBD	TBD

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal Management Services:												
Project Total Cost:			1783736	1678201		950248		1740238		CONT	TBD	TBD

Remark: