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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Office of Secretary Of Defense										Date: March 2014		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)					PE 0603832D8Z / DoD Modeling and Simulation Management Office							
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	29.860	37.881	34.338	3.000	-	3.000	3.520	3.950	4.591	5.142	Continuing	Continuing
P476: DoD Modeling and Simulation Management Office	29.860	31.728	30.338	3.000	-	3.000	3.520	3.950	4.591	5.142	Continuing	Continuing
P477: Effects Chain Analyses Cell	0.000	6.153	4.000	-	-	-	-	-	-	-	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Modeling and Simulation (M&S) supports the full range and scope of Department of Defense (DoD) operations. M&S is a key enabler of capabilities supporting real-world applications that underpin innovative solutions meeting national security challenges, act as force multipliers, save resources, and save lives. The DoD Modeling and Simulation Management Office (MSMO), designated by the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) to be the focal point and advocate for DoD M&S, enhances the DoD M&S Enterprise by (1) enabling cooperation and collaboration in identifying, developing and sustaining modeling and simulation solutions; and (2) promoting technology solutions including common M&S architectures, standards, and services that improve interoperability, reuse, and cost effectiveness of DoD M&S. The USD(AT&L), under the authority of DoD Directive 5134.1, provides the oversight for this Program Element (PE) with advice and assistance from a flag-officer level M&S Steering Committee. The PE is executed by MSMO in accordance with DoD Directive 5000.59, "Management of Modeling and Simulation;" DoD Instruction 5000.70, "Management of DoD Modeling and Simulation (M&S) Activities;" DoD 4120.24-M, "DoD Standardization Program (DSP) Policies and Procedures;" and DoD Instruction 3200.14, "Principles and Operational Parameters of the DoD Scientific and Technical Information Program."

MSMO is responsible for:

- o Executing the DoD Strategic Vision for M&S.
- o Bringing together M&S stakeholders to advise and assist on finding solutions for removing the barriers to interoperability, reuse, commonality, efficiency, and effectiveness.
- o Developing, coordinating, and advocating for, with advice and assistance from the M&S Steering Committee, policy/guidance, technology, standards, best practices, and strategic planning processes that promote interoperability and reuse.
- o Managing funds to support DoD M&S Enterprise activities.

MSMO also serves as DoD's:

- o Lead Standardization Activity (LSA) for managing M&S standards and methodologies.
- o Focal point and advocate for coordinating DoD M&S information exchanges and interactions within DoD, with other U.S. Government departments and agencies, international allies, industry and academia.

This program supports the goals of the DoD Strategic Vision for M&S, which are:

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Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)	R-1 Program Element (Number/Name) PE 0603832D8Z I DoD Modeling and Simulation Management Office	
Goal One. Standards, architectures, networks and environments that: - o Promote the sharing of tools, data, and information across the Enterprise. - o Foster common formats. - o Are readily accessible and can be reliably applied by users. Goal Two. Policies at the enterprise level that: - o Promote interoperability and the use of common M&S capabilities. - o Minimize duplication and encourage reuse of M&S capabilities. - o Encourage research and development (R&D) to respond to emerging challenges. - o Limit the use of models and data encumbered by proprietary restrictions. - o Leverage M&S capabilities across DoD, other government agencies, International partners, industry, and academia. Goal Three. Management processes for models, simulations, and data that: - o Enable M&S users and developers to easily discover and share M&S capabilities and provide incentives for their use. - o Facilitate the cost-effective and efficient development and use of M&S systems and capabilities. - o Include practical validation, verification, and accreditation guidelines that vary by application area. Goal Four. Tools in the form of models, simulations, and authoritative data that: - o Support the full range of DoD interests. - o Provide timely and credible results. - o Make capabilities, limitations, and assumptions easily visible. - o Are useable across communities. Goal Five. People that: - o Are well-trained. - o Employ existing models, simulation, and data to support departmental objectives. - o Advance M&S to support emerging departmental challenges.		

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603832D8Z I <i>DoD Modeling and Simulation Management Office</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	47.433	41.370	45.890	-	45.890
Current President's Budget	37.881	34.338	3.000	-	3.000
Total Adjustments	-9.552	-7.032	-42.890	-	-42.890
• Congressional General Reductions	-3.229	-			
• Congressional Directed Reductions	-4.000	-7.000			
• Congressional Rescissions	-0.057	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.114	-			
• SBIR/STTR Transfer	-1.152	-			
• Strategic Efficiency Savings	-	-	-19.890	-	-19.890
• FFRDC Adjustments	-	-0.032	-	-	-
• Realignment of Funds to Support Higher DoD Priorities and Requirements	-	-	-23.000	-	-23.000

Change Summary Explanation

FY 2015: Reduction of -19.890 million is a strategic efficiency approach to reduce funding and staffing. As a result, we provide a better alignment of funding and provide support to a smaller military force.

Reduction of -12.000 million is the result of higher S & T priorities. The funds were realigned to a new PE in FY 2015, PE 0603288D8Z, Science and Technology Analytic Assessment, a new start Program in FY 2015.

Reduction of -11.000 million is realigned from Effects Chain Analyses to a new PE in FY 2015, PE0603289D8Z, Advanced Innovative Analysis and Concepts, a new start Program in FY 2015.

Total Net Reduction in FY 2015: -42,890.

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Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603832D8Z / DoD Modeling and Simulation Management Office				Project (Number/Name) P476 / DoD Modeling and Simulation Management Office			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
P476: DoD Modeling and Simulation Management Office	29.860	31.728	30.338	3.000	-	3.000	3.520	3.950	4.591	5.142	Continuing	Continuing

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A. Mission Description and Budget Item Justification

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MSMO is responsible for:

- o Executing the DoD Strategic Vision for M&S.
- o Bringing together M&S stakeholders to advise and assist on finding solutions for removing the barriers to interoperability, reuse, commonality, efficiency, and effectiveness.
- o Developing, coordinating, and advocating for, with advice and assistance from the M&S Steering Committee, policy/guidance, technology, standards, best practices, and strategic planning processes that promote interoperability and reuse.
- o Managing funds to support DoD M&S Enterprise activities.

MSMO also serves as DoD’s:

- o Lead Standardization Activity (LSA) for managing M&S standards and methodologies.
- o Focal point and advocate for coordinating DoD M&S information exchanges and interactions within DoD, with other U.S. Government departments and agencies, international allies, industry and academia.

This program supports the goals of the DoD Strategic Vision for M&S, which are:

Goal One. Standards, architectures, networks and environments that:

- o Promote the sharing of tools, data, and information across the Enterprise.
- o Foster common formats.

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o Are readily accessible and can be reliably applied by users. Goal Two. Policies at the enterprise level that: - o Promote interoperability and the use of common M&S capabilities. - o Minimize duplication and encourage reuse of M&S capabilities. - o Encourage research and development to respond to emerging challenges. - o Limit the use of models and data encumbered by proprietary restrictions. - o Leverage M&S capabilities across DoD, other government agencies, International partners, industry, and academia. Goal Three. Management processes for models, simulations, and data that: - o Enable M&S users and developers to easily discover and share M&S capabilities and provide incentives for their use. - o Facilitate the cost-effective and efficient development and use of M&S systems and capabilities. - o Include practical validation, verification, and accreditation guidelines that vary by application area. Goal Four. Tools in the form of models, simulations, and authoritative data that: - o Support the full range of DoD interests. - o Provide timely and credible results. - o Make capabilities, limitations, and assumptions easily visible. - o Are useable across communities. Goal Five. People that: - o Are well-trained. - o Employ existing models, simulation, and data to support departmental objectives. - o Advance M&S to support emerging departmental challenges.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
Title: DoD Modeling and Simulation Management Office		31.728	30.338	3.000
Description: The DoD Modeling and Simulation Management Office, as the focal point for DoD models and simulations (M&S), is responsible for maintaining and enhancing policies, standards, technology, and collaboration ensuring the efficiency and effectiveness of the M&S that support the full range and scope of Department of Defense (DoD) missions and operations.				
FY 2013 Accomplishments: Development Activities – MSMO:				

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014
- Completed approval processes for two standards developed under the Live Virtual Constructive Architecture Roadmap (LVCAR) simulation events: the Institute for Electrical and Electronics Engineers (IEEE) 1730.1 Distributed Multi Architecture Overlay Standard, and Simulation Interoperability Standards Organization (SISO) Federation Agreements Template Standard. - Initiated projects in the areas of the priority objectives developed by the DoD M&S Steering Committee - o Conceptual Modeling Research and Development. - o M&S Training and Education. - o M&S Policy Review including Verification, Validation, and Accreditation. - o Common standards and interfaces to encourage reuse. - o M&S Reuse. - o M&S Metadata to support resource discovery. - o Cyber M&S. - Completed M&S projects or activities for the: - o Irregular Warfare High Level Task (HLT) including Datacard Transition and development of a Joint Irregular Warfare Analytic Baseline. - o Cyber Operations Research and Network Analysis (CORONA) HLT and transitioned the product to the Test Resource Management Center. - o Rapid Data Generation (RDG) High Level Task through Initial Operating Capability Phase; RDG will allow simulations to use consistent, authoritative data sources for Order of Battle information. Follow-on phases will address additional types of data and additional classification levels. - o Phase one of Integrated Threat Systems M&S (ITSMS) as a part of the Integrated Threat Analysis Simulation Environment (ITASE) program, delivering initial architecture and single use case to address integrated threat representation. - o Project Management Tool, a needs and solutions management tool for the DoD. - Initiated M&S Catalog platform transition to improve user access and support. - Continued M&S projects or activities for: - o Developing Enterprise System Engineering M&S Data requirements, architecture, and standards for M&S Data. - o Developing the Common Data Production Environment (CDPE) by finalizing development of enhanced and correlated geospatial data discovery using the DoD M&S Discovery Metadata Specification standard, by continuing incremental developmental of M&S logistics data, and by beginning developmental planning activities for M&S Command & Control data. - o Leading the DoD M&S Enabling Cyber Workshops. - o Updating the M&S Community of Interest (COI) Discovery Metadata Specification (MSC-DMS) for M&S data and published MSC-DMS v1.5 to comply with updated DoD- wide discovery metadata specification. - o Coordinating the use of Environmental Data Cube Support System (EDCSS) in DoD exercises. - o Supporting the development of new approaches to using M&S.			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014
Sustainment Activities – MSMO continued: - Ensuring existing standards continue to meet user needs through collaborative standards review - Testing compliance to High Level Architecture (HLA) standard for simulations supporting joint warfighting. - Refining and populating the DoD Enterprise M&S catalog making authoritative tools and data more widely accessible and useable. - Transitioning the authoritative DoD M&S Glossary issuance to online status for standardization of terminology and increased collaboration across the DoD M&S Enterprise. - Maintaining the Modeling and Simulation Coordination Office website for providing global access to DoD M&S activities and tools. Management/Coordination Activities: - MSMO continued: - o Advising and assisting the USD(AT&L) on M&S. - o Managing working groups providing technical advice and assistance to the M&S Senior Steering Committee. - o Serving as the DoD Lead Standardization Activity (LSA) for managing M&S standards and methodologies to improve the interoperability and reuse of M&S within the DoD, other U.S. government agencies, and international M&S communities. - o Managing the development of a core technology program to maintain and sustain M&S tools, data, and services vital to the long term success of the DoD M&S Enterprise. - o Serving as the DoD modeling and simulation focal point for M&S activities and collaboration with non-DoD, federal agencies including the Department of Homeland Security (DHS), the Department of Energy (DOE), the Department of Justice (DOJ), Federal Emergency management Agency (FEMA) and the National Aeronautics and Space Administration (NASA). - o Serving as the DoD modeling and simulation focal point for M&S activities and collaboration with International agencies including NATO, Partnership for Peace (PfP) nations, The Technical Cooperation Program (TTCP), and other Allies. - o Serving as the DoD modeling and simulation focal point and advocate for M&S activities and for collaboration within the DoD. - o Coordinating quarterly program management reviews for tasks sponsored by this PE. - o Coordinating with the Simulation Interoperability Standards Organization (SISO) for governance and development / voting of M&S standards supporting interoperability. - o Engaging Modeling & Simulation Community of Interest (M&S COI) activities for integrating M&S Enterprise Data requirements into the DoD Wide Net Centric Data Strategy. - o Managing the M&S Community of Interest (COI) and subordinate Data Management Working Group (DMWG) and Architecture Management Group activities to address M&S data technical challenges. - Initiated the WHS-required update to DoDI 5000.70. - Transitioned capabilities formerly assigned to DTIC's Modeling and Simulation Information Analysis Center (MSIAC) to DTIC's Cyber Security and Information Systems Information Analysis Center (CSIAC).			

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2013	FY 2014	FY 2015
- Provided functional oversight and technical direction to M&S portion of CSIAC. FY 2014 Plans: The focus for FY 2014 is on ensuring technical expertise and support capability in the modeling and simulation disciplines for enhancing the effectiveness of our M&S expenditures through development of new common capabilities in an enterprise fashion and by enhancing reuse and interoperability of individual M&S tools. Development Activities – MSMO is continuing: - o Developing Enterprise System Engineering M&S Data requirements, architecture, and standards for M&S Data. - o Developing the Common Data Production Environment (CDPE) by finalizing development of enhanced and correlated geospatial data discovery using the DoD M&S Discovery Metadata Specification standard, by continuing incremental developmental of M&S logistics data, and by beginning developmental planning activities for M&S Command & Control data. - o Providing users with rapid discovery of classified Order of Battle data and the most advanced and enhanced terrain data developed within and by the DoD. - o Leading the DoD M&S Enabling Cyber Workshops. - o Updating the M&S Community of Interest (COI) Discovery Metadata Specification (MSC-DMS) metadata specification for M&S data. - o Coordinating the use of the Environmental Data Cube Support System EDCSS in DoD exercises and The Technical Cooperation Program (TTCP) experiments. - o Supporting the development of new approaches to using M&S. - o Facilitating the identification of mission and engagement level weapon system models in Spiral Two development of the Integrated Threat Systems Modeling and Simulation (ITSMS). Sustainment Activities – MSMO is continuing: - o Ensuring existing standards continue to meet user needs through collaborative standards review. - o Testing HLA Run-Time Interfaces for compliance with standards. - o Refining and populating the DoD Enterprise M&S catalog making authoritative tools and data more widely accessible and useable. - o Maintaining the online DoD M&S Glossary for standardization of terminology and increased collaboration across the DoD M&S Enterprise. - o Making M&S information publically available through the Modeling and Simulation Coordination office website. Management/Coordination Activities – MSMO is continuing:					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2013	FY 2014	FY 2015
- o Serving as the DoD Lead Standardization Activity (LSA) for managing M&S standards and methodologies to improve the interoperability and reuse of M&S within the DoD, other U.S. government agencies, and international M&S communities. - o Serving as the DoD M&S focal point and advocate for M&S activities and for collaboration within the DoD. - o Advising and assisting the USD(AT&L) on M&S. Coordinating working groups for providing technical advice and assistance to the DoD M&S Senior Steering Committee. - o Performing knowledge management and dissemination of DoD modeling and simulation capabilities and best practices to enable efficient use of M&S. - o Managing the development of a technical core program to maintain and sustain M&S tools, data, and services vital to the long term success of the DoD M&S Enterprise. - o Providing M&S functional oversight and M&S technical direction to DTIC's Cyber Security and Information Systems Information o Analysis Center (CSIAC). - o Coordinating with the Simulation Interoperability Standards Organization (SISO) for governance and development / voting of M&S standards supporting interoperability. - o Collaborating with non-DoD, federal agencies including the Department of Homeland Security (DHS), the Department of Energy (DOE), the Department of Justice (DOJ), and the National Aeronautics and Space Administration (NASA). - o Serving as the DoD modeling and simulation focal point for M&S activities and collaboration with International agencies including NATO, Partnership for Peace (PfP) nations, The Technical Cooperation Program (TTCP), and other Allies. - o Coordinating the Modeling & Simulation Community of Interest (M&S COI) activities. - o Managing the Data Management Working Group (DMWG) activities to address M&S data technical challenges. FY 2015 Plans: In FY 2015, MSMO will focus on modeling and simulation technical advocacy and enterprise-level support. Traditionally, the MSMO provided direct R&D project funds, e.g. High Level Tasks (HLTs), to OSD, Military Department and Agency community organizations to respond to identified challenges. Starting in FY 2015, R&D project support to identified OSD, Military Department and Agency challenges will be funded within those community organization program elements. In FY 2015, all prior R&D projects will have been completed and transitioned to these community organizations. The requested FY 2015 budget reflects the revised budget for MSMO to (1) conduct management and technical support for the Department's current and long-term M&S needs; (2) study opportunities to leverage relevant DoD Information Technology (IT) enterprise capabilities and DoD, Industry, and Academia-developed M&S technologies; and (3) continue to advocate an enterprise approach for the future of DoD M&S, maintaining strong engagement and ties with DoD and external community stakeholders. MSMO will: - o Continue to develop, enhance, and advocate the M&S enterprise suite of tools for the DoD to enable reuse and efficient adoption/application of M&S, including the M&S Catalog and M&SCO Website.					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014
- o Research and update AT&L-promulgated M&S Issuances and technical guidance – DoDD 5000.59, DoDI 5000.70, DoDI 5000.61 verification, validation, and accreditation(VV&A), DoD M&S Glossary, and VV&A Recommended Practices Guides, etc. - o Serve as the focal point for DoD M&S technical collaboration: – Chair M&S Community of Interest (COI); oversee/advise efforts of subordinate M&S COI Working Groups (WGs): Cyber, Data, Services, Architecture, VV&A. – Exploit R&D opportunities to leverage ongoing Department- and Federal-level IT and M&S capabilities, such as Joint Information Environment (JIE) and the National Information Exchange Model (NIEM). - o Serve as the Lead Standardization Activity for M&S Standards & Methodologies (LSA – MSSM). - o Represent AT&L in Joint Enterprise Steering Committee (JESC) (IT & Intelligence Community standards) activities. – Chair M&S Technical Working Group - o Represent DoD M&S Community interests in Simulation Interoperability Standards Organization (SISO) activities - o Represent the U.S. interests in International M&S activities: – Chair TTCP Technical Panel 2 (M&S) – US Principal Voting Member for NATO M&S Group - o Develop M&S technical direction and provide functional oversight to DTIC's Cyber Security and Information Systems Information Analysis Center (CSIAC).			
Accomplishments/Planned Programs Subtotals		31.728	30.338
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			
E. Performance Metrics Performance in this program is monitored in the following ways: - Number of instances where M&S standards, technical best practices, or tools have been adopted or employed. - Number of M&S resources (tools, data, and services) made visible or updated in the DoD M&S Enterprise Catalog for reuse and the completeness of each record according to DoD discovery metadata standards. - Number of users accessing and completing DoD-sponsored training venues for educating the M&S workforce.			

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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
P477: Effects Chain Analyses Cell	-	6.153	4.000	-	-	-	-	-	-	-	Continuing	Continuing
# The FY 2015 OCO Request will be submitted at a later date.												
A. Mission Description and Budget Item Justification												
The Anti-access/Area-denial (A2/AD) threat requires detailed modeling and simulation based analysis to support weapon system and operational capability development. This effort will focus on generating operational scenario and system analyses, identifying specific analytic limitations, developing the technical analysis plan, and implementing the plan. These analyses will be acquisition-centered net analyses of the end-to-end blue (US and Allies) capabilities compared to specific red (potential adversary) capabilities focused on identifying the most promising technologies for application to A2/AD problems. The analyses will address acquisition specific questions such as: can an existing system be leveraged and/or can a group of capabilities be combined in different ways to improve the overall effectiveness of US systems? This office works closely with the Joint Staff, the Military Departments, Combatant Commands, and other Government entities.												
In FY 2015, this project will be moved to PE 0603289 entitled "Advanced Innovative Analysis and Concepts."												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2013	FY 2014	FY 2015	
Title: Effects Chain Analyses Cell									6.153	4.000	-	
Description: The A2/AD effects chain analysis effort develops and strengthens the specific analysis data, tools, and actual technical analyses supporting decisions on weapon system and operational capability development. The analyses will initially focus on PACOM and include STRATCOM, SOCOM, and CYBERCOM. Projects undertaken will be approved by the Under Secretary of Defense (AT&L).												
FY 2013 Accomplishments:												
• Initiated alternative concepts focused on near-term systems employment in coordination with PACOM, developed analytical approaches to assess capability improvements.												
• Identified promising concepts for detailed analysis of effects.												
• Analyzed sensor options and cost effective architectures for land based defense.												
• Built threat models at all-source level for land based defense analysis.												
• Developed an end to end engagement model complete with high fidelity weapon system, fire control sensor, and detailed threat models												
• Developed and refined required adversary threat models												
• Developed, evaluated and refined multiple projectile configurations to determine optimal system performance for the threats of interest												

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014
• Performed detailed trade studies on sensor types, sensor configurations, autopilot designs, guidance, midcourse and terminal guidance options • Evaluated left-of-launch options for countermeasures • Evaluated effects and impacts of structured attack scenarios versus weapon laydown options FY 2014 Plans: • Continue concept analysis of near-term systems in alternate employment scenarios. • Perform detailed performance and effects analysis of promising concepts. • Continue development of an end-to-end engagement model complete with finer tuned detailed threat models • Continue development of required adversary threat models to include a new class of threats Design, prototype and evaluate projectile configurations to determine optimal system performance for high priority threats • Continue to perform in fine detail, trade studies on sensor types, sensor configurations, autopilot designs, guidance, midcourse and terminal guidance options • Continue evaluation of left of launch options for countermeasures including modeling and integration of a new class of threats • Continue evaluation of structured attack scenarios versus weapon laydown options. • Continue efforts to increase end-game accuracy • Continue to explore and expand sensor options to provide highest probability of kill against threats			
Accomplishments/Planned Programs Subtotals		6.153	4.000
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A E. Performance Metrics N/A			