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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2012 Office of Secretary Of Defense **DATE:** February 2011

<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 ITEM NOMENCLATURE</b>							
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>				PE 0603832D8Z: <i>DoD Modeling and Simulation Management Office</i>							
<b>COST (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	34.055	38.140	37.029	-	37.029	37.324	38.049	38.865	40.026	Continuing	Continuing
P476: <i>DoD Modeling and Simulation Management Office</i>	34.055	38.140	37.029	-	37.029	37.324	38.049	38.865	40.026	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Modeling and Simulation (M&S) is a key enabler of the Department of Defense (DoD) activities in communities enabled by M&S such as acquisition, analysis, experimentation, intelligence, planning, test & evaluation, and training. The strategic objective of the DoD Modeling and Simulation Management Office (MSMO) is to execute enterprise management of a robust, defense-wide M&S capability that enhances the value of DoD's M&S investment through funding and coordinating high-priority activities that: (1) encourage collaboration among M&S stakeholders throughout the DoD; (2) promote outreach and better understanding of defense systems, missions, and operations; (3) support efficiency, reduce duplication, and enhance reuse through improved characterization of M&S programs and resources; and (4) leverage the investment in this National Critical Technology within the DoD, as well as other governmental agencies, industry, and academia. Under the authority of DoD Directive 5134.1, Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) provides the oversight for this Modeling and Simulation Management Office 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 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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
Previous President's Budget	38.505	38.140	38.517	-	38.517
Current President's Budget	34.055	38.140	37.029	-	37.029
Total Adjustments	-4.450	-	-1.488	-	-1.488
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	0.800	-			
• SBIR/STTR Transfer	-0.956	-			
• Other Adjustments	-4.294	-	-	-	-
• Defense Efficiency - Reports, Studies, Boards, and Commissions	-	-	-0.967	-	-0.967
• Defense Efficiency - Contractor Staff Support	-	-	-0.468	-	-0.468
• Economic Assumptions	-	-	-0.053	-	-0.053

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 3: Advanced Technology Development (ATD)	R-1 ITEM NOMENCLATURE PE 0603832D8Z: DoD Modeling and Simulation Management Office	
<p><b><u>Change Summary Explanation</u></b></p> <p>Defense Efficiency – Reports, Studies, Boards and Commissions. As part of the Department of Defense reform agenda, reflects a reduction in the number and cost of reports, studies, strategic plans below the aggregate level reported in the previous budget submission.</p> <p>Defense Efficiency – Contractor Staff Support. As part of the Department of Defense reform agenda, reduces funds below the aggregate level reported in the previous budget submission for contracts that augment staff functions.</p>		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2012 Office of Secretary Of Defense								<b>DATE:</b> February 2011			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603832D8Z: <i>DoD Modeling and Simulation Management Office</i>				<b>PROJECT</b> P476: <i>DoD Modeling and Simulation Management Office</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
P476: <i>DoD Modeling and Simulation Management Office</i>	34.055	38.140	37.029	-	37.029	37.324	38.049	38.865	40.026	Continuing	Continuing

## **A. Mission Description and Budget Item Justification**

Modeling and Simulation (M&S) is a key enabler of Department of Defense (DoD) activities in communities enabled by M&S such as acquisition, analysis, experimentation, intelligence, planning, test & evaluation, and training. The strategic objective of the DoD Modeling and Simulation Management Office (MSMO) is to execute enterprise management of a robust, defense-wide M&S capability that enhances the value of DoD's M&S investment through funding and coordinating high-priority activities that: (1) encourage collaboration among M&S stakeholders throughout the DoD; (2) promote outreach and better understanding of defense systems, missions, and operations; (3) support efficiency, reduce duplication, and enhance reuse through improved characterization of M&S programs and resources; and (4) leverage the investment in this National Critical Technology within the DoD, as well as other governmental agencies, industry, and academia. Under the authority of DoD Directive 5134.1, Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) provides the oversight for this Modeling and Simulation Management Office Program Element 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 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 facilitating and coordinating:

- Execution of DoD's Strategic vision for DoD M&S activities.
- Oversight and strategic governance of DoD's M&S capabilities and resources.
- Development and implementation of policies, plans, procedures, and DoD issuances to manage M&S, to include the M&S Corporate and Crosscutting Business Plan and business plans for the communities enabled by M&S.
- Best practices for M&S acquisition, development, management, and use by DoD Components and communities.
- Development of M&S technologies to address strategic enterprise needs.

MSMO also serves as DoD's:

- Lead Standardization Activity (LSA) for managing modeling and simulation standards and methodologies.
- Focal point for coordinating DoD M&S outreach activities and interactions within DoD, with other U.S. Government Departments and Agencies, with coalition partners including NATO and Partnership for Peace (PfP) nations, The Technical Cooperation Program (TTCP), International Allies, industry and academia.

MSMO objectives for enterprise best business practices include commonality, reuse, interoperability, efficiencies, and effectiveness. These objectives support the goals of DoD's M&S Strategic Vision, which are:

Goal 1. Standards, architectures, networks and environments that:

- Promote the sharing of tools, data, and information across the Enterprise
- Foster common formats
- Are readily accessible and can be reliably applied by users

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 3: Advanced Technology Development (ATD)		R-1 ITEM NOMENCLATURE PE 0603832D8Z: DoD Modeling and Simulation Management Office	PROJECT P476: DoD Modeling and Simulation Management Office		
<p>Goal 2. Policies at the enterprise level that:</p> <ul style="list-style-type: none"><li>• Promote interoperability and the use of common M&amp;S capabilities</li><li>• Minimize duplication and encourage reuse of M&amp;S capabilities</li><li>• Encourage research and development to respond to emerging challenges</li><li>• Limit the use of models and data encumbered by proprietary restrictions</li><li>• Leverage M&amp;S capabilities across DoD, other government agencies, International partners, industry, and academia</li></ul> <p>Goal 3. Management processes for models, simulations, and data that:</p> <ul style="list-style-type: none"><li>• Enable M&amp;S users and developers to easily discover and share M&amp;S capabilities and provide incentives for their use</li><li>• Facilitate the cost-effective and efficient development and use of M&amp;S systems and capabilities</li><li>• Include practical validation, verification, and accreditation guidelines that vary by application area</li></ul> <p>Goal 4. Tools in the form of models, simulations, and authoritative data that:</p> <ul style="list-style-type: none"><li>• Support the full range of DoD interests</li><li>• Provide timely and credible results</li><li>• Make capabilities, limitations, and assumptions easily visible</li><li>• Are useable across communities</li></ul> <p>Goal 5. People that:</p> <ul style="list-style-type: none"><li>• Are well-trained</li><li>• Employ existing models, simulation, and data to support departmental objectives</li><li>• Advance M&amp;S to support emerging departmental challenges</li></ul>					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2010	FY 2011	FY 2012
Title: DoD Modeling and Simulation Management Office			34.055	38.140	37.029
FY 2010 Accomplishments: Accomplishments for FY 2010 included the continued coordination, development and dissemination of tools for the Department's chief priority, such as irregular warfare; managed the DoD #1 M&S priority – standards; developed distributed simulation architectures; evolved towards a net-centric architecture; implemented new Verification, Validation and Accreditation (VV&A) technologies and processes; continued as lead standardization activity (LSA) for managing M&S standards and methodologies; and served as Focal point for coordinating DoD M&S outreach activities and interactions within DoD, with other U.S. Government Departments and Agencies, with coalition partners including NATO and Partnership for Peace (PfP) nations, The Technical Cooperation Program (TTCP), international Allies, industry and academia. Results of these efforts for 2010 include: <ul style="list-style-type: none"><li>• Identified and categorized over 50 separate authoritative data sources</li></ul>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>			<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>
<ul style="list-style-type: none"> <li>• Evolved standards that provided cost effective and efficient environmental data, interoperability and discovery of M&amp;S resources</li> <li>• Finalized the next version of High Level Architecture (HLA) standard capabilities</li> <li>• Prototyped an "Architecture Neutral Data Exchange Model" to measurably reduce the time needed to prepare for a Live, Virtual, Constructive simulation event</li> <li>• Identified industry information technologies applicable to the DoD M&amp;S environment</li> <li>• Developed 16 M&amp;S academic courses and 11 continuous learning modules for the workforce</li> <li>• Developed vital M&amp;S Irregular Warfare methodologies</li> <li>• Transitioned environmental representation tools to 13 programs of record</li> <li>• Integrated 4 repositories</li> <li>• Completed 7 standards with 3 standards awaiting processing.</li> </ul> <p>Developed, produced, and applied enterprise-wide planning and best business practices, which encouraged commonality, reuse, interoperability, efficiencies, effectiveness and cost savings across Services, Combatant Commands, and OSD-level activities. These efforts were essential to informing choices for Joint solutions and provided improved enterprise efficiency, effectiveness, and return on investment (RoI) for M&amp;S.</p> <p><b>FY 2011 Plans:</b></p> <p>DoD M&amp;S management will continue implementing the "Strategic Vision for DoD Modeling and Simulation" and its objectives of commonality, reuse, interoperability, efficiencies, and effectiveness for enhancing M&amp;S support to the warfighter.</p> <p>Specific tasks for FY 2011 include:</p> <p>Management / Coordination Activities:</p> <ul style="list-style-type: none"> <li>• Revise and continue the implementation of metrics for measuring program performance</li> <li>• Revise seven Community M&amp;S business plans</li> <li>• Complete an M&amp;S industrial base study</li> <li>• Complete a NATO Technical Panel-2 (M&amp;S) report</li> <li>• Continue involvement with the M&amp;S Congressional Caucus</li> <li>• Continue coordination with the Simulation Interoperability Standards Organization (SISO) and the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC)</li> <li>• Continue as Lead Standardization Activity (LSA) for managing M&amp;S standards and methodologies</li> <li>• Continue serving as focal point for coordinating DoD M&amp;S outreach activities and collaboration with non-DoD M&amp;S agencies including NATO and Partnership for Peace (PfP) nations, The Technical Cooperation Program (TTCP), and other Allies.</li> </ul> <p>Sustainment Activities:</p> <ul style="list-style-type: none"> <li>• Accelerate standardization and commonality of data, tools, and services across the M&amp;S enterprise</li> <li>• Refine and leverage a core set of tools to make authoritative data widely accessible and useable</li> </ul>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>			<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>
<ul style="list-style-type: none"> <li>• Continue managing M&amp;S standards</li> <li>• Improve the HLA compliance testing tools</li> </ul> <p>Development Activities:</p> <ul style="list-style-type: none"> <li>• Enhance analytical capabilities and continue coordinating the development and dissemination of M&amp;S tools for irregular warfare</li> <li>• Plan for the integration of disparate M&amp;S architectures</li> <li>• Enhance the Environmental Data Cube Support System (EDCSS)</li> <li>• Develop risk-based VV&amp;A recommended practices</li> <li>• Deploy the M&amp;S Catalog and Modeling &amp; Simulations Information System.</li> <li>• Refine the M&amp;S workforce requirements</li> </ul> <p>These planned tasks will continue developing, producing, and applying enterprise-wide planning and best business practices to encourage commonality, interoperability, reuse, and cost savings across the Services, Combatant Commands, and OSD-level activities.</p> <p><b>FY 2012 Plans:</b></p> <p>DoD M&amp;S management will continue implementing the “Strategic Vision for DoD Modeling and Simulation” and its focus areas of standards, interoperability, and visibility. Objectives will include continuing to develop data standards and common architectures; creating repositories and registries supporting reuse for information, data, and models; reducing use of proprietary tools (consistent with the FAR); developing tools to model non-traditional warfare areas such as irregular warfare; and identifying and removing barriers to collaboration with industry, academia, and interagency partners, and others outside the DoD M&amp;S enterprise; and educating the workforce for leveraging modeling and simulation.</p> <p>Specific tasks planned for FY 2012 include:</p> <p>Management / Coordination Activities:</p> <ul style="list-style-type: none"> <li>• Revise the Corporate and Crosscutting M&amp;S Business Plan</li> <li>• Revise the metrics for measuring program performance</li> <li>• Support responses to Congressional taskings</li> <li>• Continue serving as Lead Standardization Activity (LSA) for managing M&amp;S standards and methodologies</li> <li>• Continue serving as focal point for coordinating DoD M&amp;S outreach activities and collaboration with non-DoD M&amp;S agencies including NATO and Partnership for Peace (PfP) nations, The Technical Cooperation Program (TTCP), and other Allies.</li> </ul> <p>Sustainment Activities:</p> <ul style="list-style-type: none"> <li>• Continue managing M&amp;S standards</li> <li>• Accelerate standardization and commonality of data, tools, and services across the M&amp;S enterprise</li> <li>• Continue applying a core set of tools to make authoritative data widely accessible and useable</li> <li>• Manage the M&amp;S Catalog and Modeling &amp; Simulations Information System</li> </ul>					

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2010</b>	<b>FY 2011</b>
Development Activities: • Begin integration of disparate M&S architectures • Update requirements for the M&S workforce • Monitor and continue coordinating the development and dissemination of M&S tools for irregular warfare • Deploy the Environmental Data Cube Support System (EDCSS) • Apply risk-based VV&A recommended practices • Improve and apply HLA compliance testing tools • Update M&S education courses These planned tasks will continue developing, producing, and applying enterprise-wide planning and best business practices to encourage commonality, interoperability, reuse, and cost savings across the Services, Combatant Commands, and OSD-level activities.			
<b>Accomplishments/Planned Programs Subtotals</b>		34.055	38.140
<b>C. Other Program Funding Summary (\$ in Millions)</b>			
N/A			
<b>D. Acquisition Strategy</b>			
N/A			
<b>E. Performance Metrics</b>			
Comment: Performance in this program is monitored in the following ways: 1. Number of instances where M&S standards, best practices, or tools have been adopted or employed. (Goal 1) 2. Number of M&S standards registered with the Defense Standardization Program. (Goal 1) 3. Number of collaborative events held or agreements made within DoD, with other U.S. Government Departments and Agencies, coalition partners including NATO and Partnership for Peace (PfP) nations, The Technical Cooperation Program (TTCP), international Allies, industry and academia. (Goal 2) 4. Number of M&S policies or plans issued, re-issued, revised, or deleted. (Goal 2) 5. Number of M&S gaps identified in the Corporate and Crosscutting Business Plan and addressed by PE funding. (Goal 3) 6. Number of M&S resources (tools, data, and services) made visible for reuse. (Goal 4) 7. Number of curricula developed that are available for educating the M&S workforce. (Goal 5)			

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