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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Office of the Secretary Of Defense	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>											
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	PE 0603832D8Z I <i>DoD Modeling and Simulation Management Office</i>											
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	67.741	31.222	2.995	-	-	-	-	-	-	-	Continuing	Continuing
P476: <i>DoD Modeling and Simulation Management Office</i>	61.588	27.356	2.995	-	-	-	-	-	-	-	Continuing	Continuing
P477: <i>Effects Chain Analyses Cell</i>	6.153	3.866	-	-	-	-	-	-	-	-	Continuing	Continuing

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

Modeling and Simulation (M&S) is a key enabler of DoD capabilities; underpins innovative solutions meeting real-world national security challenges; acts as a force multiplier; saves resources; and saves 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.

In FY 2016, this Program Element (PE) will be transferred to a new PE 0603833D8Z entitled, "Engineering Science and Technology" in order to support the Deputy Assistant Secretary of Defense (Systems Engineering) priorities -- to "grow engineering capabilities to address emerging Defense challenges" and to "champion systems engineering as a tool to improve acquisition quality." Engineering science and technology, including modeling and simulation (M&S) and systems engineering (SE) research, support the cost-effective acquisition of complex systems and the full range and scope of Department of Defense (DoD) missions and operations.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	34.338	3.000	-	-	-
Current President's Budget	31.222	2.995	-	-	-
Total Adjustments	-3.116	-0.005	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.012	-			
• SBIR/STTR Transfer	-1.104	-			
• FFRDC SEC 8104	-	-0.005	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Office of the Secretary Of Defense										Date: February 2015		
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
P476: DoD Modeling and Simulation Management Office	61.588	27.356	2.995	-	-	-	-	-	-	-	Continuing	Continuing

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

Modeling and Simulation (M&S) supports the full range and scope of the Department of Defense (DoD) missions and operations. M&S is a key enabler of DoD capabilities; underpins innovative solutions meeting real-world national security challenges, and saves resources. The Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)), under the authority of DoD Directive 5134.01, designated the DoD Modeling and Simulation Management Office (MSMO) to be the focal point and advocate for Defense M&S to enhance the Defense 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. MSMO executes its efforts in accordance with the USD(AT&L)-promulgated DoD Directive 5000.59, “Management of Modeling and Simulation” and DoD Instruction 5000.70, “Management of DoD Modeling and Simulation (M&S) Activities;” and other DoD Issuances, including 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:

- Planning, coordinating, and managing funds to support enterprise-level M&S activities that guide the Defense M&S Community to achieve the DoD Strategic Vision for M&S.
- Bringing together M&S stakeholders to advise and assist on finding solutions for removing the barriers to interoperability, reuse, commonality, efficiency, and effectiveness.
- Developing, coordinating, and advocating for, with advice and assistance from the DoD M&S Steering Committee, policy/guidance, technology, standards, best practices, and strategic planning processes that promote interoperability and reuse across the Department.

MSMO also serves as DoD’s:

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

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> DoD Modeling and Simulation Management Office (MSMO)	27.356	2.995	-
<b>Description:</b> MSMO, as the USD(AT&L)-designated focal point for Defense modeling and simulation (M&S), is responsible for maintaining and enhancing policies, standards, technology, and collaboration to ensure the efficiency and effectiveness of the M&S that supports the full range and scope of Defense missions and operations.			

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<b>Appropriation/Budget Activity</b> 0400 / 3	<b>R-1 Program Element (Number/Name)</b> PE 0603832D8Z / <i>DoD Modeling and Simulation Management Office</i>	<b>Project (Number/Name)</b> P476 / <i>DoD Modeling and Simulation Management Office</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>
<p><b><i>FY 2014 Accomplishments:</i></b>            In FY 2014, MSMO enhanced the effectiveness of M&amp;S expenditures through development of new common capabilities in an enterprise fashion and through improving re-use and interoperability of individual M&amp;S tools in the following areas:</p> <p>Development Activities, MSMO:</p> <ul style="list-style-type: none"> <li>• Provided users with rapid discovery of classified Order of Battle data and the most advanced and enhanced terrain in the Rapid Data Generation program and transitioned ownership to Joint Staff J7.</li> <li>• Facilitated the identification of mission- and engagement-level weapon system models in spiral II development of the Integrated Threat Systems Modeling and Simulation and transitioned capability to Missile and Space Intelligence Center.</li> <li>• Supported the development of and transitioned Cyber Operations Research and Network Analysis to the Test Resource Management Center.</li> </ul> <p>Sustainment Activities, MSMO:</p> <ul style="list-style-type: none"> <li>• Re-architected the DoD Enterprise M&amp;S catalog to improve functionality.</li> </ul> <p>Management/Coordination Activities, MSMO:</p> <ul style="list-style-type: none"> <li>• Served as the DoD Lead Standardization Activity for managing M&amp;S standards.</li> <li>• Coordinated the use of the Environmental Data Cube Support System in DoD exercises and The Technical Cooperation Program (TTCP) experiments.</li> </ul> <p><b><i>FY 2015 Plans:</i></b>            In FY 2015, MSMO will focus on M&amp;S technical advocacy and enterprise-level support. Traditionally, the MSMO provided R&amp;D project funds to OSD, Military Department and Agency community organizations to develop solutions for identified M&amp;S challenges. 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&amp;S needs; (2) study opportunities to leverage relevant DoD Information Technology (IT) enterprise capabilities and DoD-, Industry-, and Academia-developed M&amp;S technologies; and (3) continue to advocate an enterprise approach for the future of DoD M&amp;S, maintaining strong engagement and ties with DoD and external community stakeholders.</p> <p>MSMO is structuring its FY 2015 efforts in four categories: policy and guidance, standards, technology, and collaboration, as follows:</p> <p>Policy and Guidance:</p> <ul style="list-style-type: none"> <li>• Research and initiate updates of AT&amp;L-promulgated M&amp;S Issuances and technical guidance.</li> </ul>			

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>
<p>Standards:</p> <ul style="list-style-type: none"> <li>• Serve as the Lead Standardization Activity for M&amp;S Standards and Methodologies, and lead and/or participate in relevant DoD and International standards activities.</li> </ul> <p>Technology:</p> <ul style="list-style-type: none"> <li>• Develop, enhance, and advocate the M&amp;S enterprise suite of tools.</li> <li>• Chair M&amp;S Community of Interest.</li> </ul> <p>Collaboration:</p> <ul style="list-style-type: none"> <li>• Represent the U.S. interests in Interagency, and International M&amp;S activities, e.g.: <ul style="list-style-type: none"> <li>– Chair TTCP Technical Panel Two (M&amp;S).</li> <li>– Serve as the US Principal Voting Member for the NATO M&amp;S Group (NMSG) and participate in NMSG task groups.</li> </ul> </li> </ul>			
<b>Accomplishments/Planned Programs Subtotals</b>		27.356	2.995
<p><b>C. Other Program Funding Summary (\$ in Millions)</b> N/A</p> <p><b>Remarks</b></p>			
<p><b>D. Acquisition Strategy</b> N/A</p>			
<p><b>E. Performance Metrics</b> Performance in this program is monitored in the following ways:</p> <ul style="list-style-type: none"> <li>- Number of instances where M&amp;S standards, technical best practices, or tools have been adopted or employed.</li> <li>- Number of M&amp;S resources (tools, data, and services) made visible or updated in the DoD M&amp;S Enterprise Catalog for reuse and the completeness of each record according to DoD discovery metadata standards.</li> <li>- Number of users accessing and completing DoD-sponsored training venues for educating the M&amp;S workforce.</li> </ul>			

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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
P477: Effects Chain Analyses Cell	6.153	3.866	-	-	-	-	-	-	-	-	Continuing	Continuing

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 0603289D8Z entitled "Advanced Innovative Analysis and Concepts."

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<div><div>Title: Effects Chain Analyses Cell</div><div>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 USD(AT&amp;L).</div><div>FY 2014 Accomplishments:<ul style="list-style-type: none"><li>Continued concept analysis of near-term systems in alternate employment scenarios.</li><li>Performed detailed performance and effects analysis of promising concepts.</li><li>Continued development of an end-to-end engagement model complete with finer tuned detailed threat models.</li><li>Continued 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.</li><li>Continued to perform in fine detail, trade studies on sensor types, sensor configurations, autopilot designs, guidance, midcourse and terminal guidance options.</li><li>Continued evaluation of left of launch options for countermeasures including modeling and integration of a new class of threats.</li><li>Continued evaluation of structured attack scenarios versus weapon laydown options.</li><li>Continued efforts to increase end-game accuracy.</li></ul></div></div>	3.866	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>
• Continued to explore and expand sensor options to provide highest probability of kill against threats.			
<b>Accomplishments/Planned Programs Subtotals</b>		3.866	-
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A			
<b>Remarks</b>			
<b>D. Acquisition Strategy</b> N/A			
<b>E. Performance Metrics</b> N/A			