

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Defense Threat Reduction Agency **DATE:** February 2010

| | |
|---|--|
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 5: <i>Development & Demonstration (SDD)</i> | R-1 ITEM NOMENCLATURE PE 0605000BR: <i>WMD Defeat Capabilities</i> |
|---|--|

| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|---|----------------|------------------|-----------------------|----------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------|
| Total Program Element | 15.499 | 9.489 | 7.307 | 0.000 | 7.307 | 6.660 | 5.432 | 5.508 | 5.587 | Continuing | Continuing |
| RL: <i>Nuclear & Radiological Effects</i> | 15.499 | 8.689 | 7.307 | 0.000 | 7.307 | 6.660 | 5.432 | 5.508 | 5.587 | Continuing | Continuing |
| RR: <i>Test Infrastructure</i> | 0.000 | 0.800 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |

A. Mission Description and Budget Item Justification

The Weapons of Mass Destruction (WMD) Defeat Capabilities program extends nuclear and radiological modeling and simulation development to system development and demonstration by developing nuclear and radiological assessment modeling tools and WMD integrated architecture to support military operational planning, weapon effects predictions, and strategic system design decisions; consolidate validated Defense Threat Reduction Agency (DTRA) modeling tools into net-centric environment for integrated functionality capable of predicting system responses to nuclear and radiological weapons producing electromagnetic, thermal, blast, shock and radiation environments in addition to chemical, biological, and conventional weapons. Key systems/environments include space assets, missiles, structures, networks, urban areas, and humans.

Efforts within this program element are rebalanced to enhance corporate capabilities in Program Element (PE) 0602718BR and PE 0603160BR to support Project RF – Detection Technology. The impacts delay full 3-D modeling and simulation efforts for electromagnetic pulse (EMP) response and consequence management predictions, to include second and third order effects.

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| APPROPRIATION/BUDGET ACTIVITY | R-1 ITEM NOMENCLATURE |
| 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> | PE 0605000BR: <i>WMD Defeat Capabilities</i> |
| BA 5: <i>Development & Demonstration (SDD)</i> | |

B. Program Change Summary (\$ in Millions)

| | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 15.896 | 8.735 | 0.000 | 0.000 | 0.000 |
| Current President's Budget | 15.499 | 9.489 | 7.307 | 0.000 | 7.307 |
| Total Adjustments | -0.397 | 0.754 | 7.307 | 0.000 | 7.307 |
| • Congressional General Reductions | | -0.046 | | | |
| • Congressional Directed Reductions | | 0.000 | | | |
| • Congressional Rescissions | 0.000 | 0.000 | | | |
| • Congressional Adds | | 0.800 | | | |
| • Congressional Directed Transfers | | 0.000 | | | |
| • Reprogrammings | 0.000 | 0.000 | | | |
| • SBIR/STTR Transfer | -0.397 | 0.000 | | | |
| • Realignment / Internal Functional Transfer | 0.000 | 0.000 | -0.478 | 0.000 | -0.478 |
| • Inflation Reduction | 0.000 | 0.000 | -0.026 | 0.000 | -0.026 |
| • Other Program Adjustment | 0.000 | 0.000 | 7.811 | 0.000 | 7.811 |

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: RR: *Test Infrastructure*

Congressional Add: *Electric Grid Reliability/Assurance*

| | <u>FY 2009</u> | <u>FY 2010</u> |
|---|----------------|----------------|
| | 0.000 | 0.800 |
| Congressional Add Subtotals for Project: RR | 0.000 | 0.800 |
| Congressional Add Totals for all Projects | 0.000 | 0.800 |

Change Summary Explanation

The decrease in funding between FY 2009 and FY 2010 reflects the rebalancing of projects to refocus research and development efforts to meet the 21st century Combating Weapons of Mass Destruction (WMD) needs in the Defense Threat Reduction Agency (DTRA) Basic Research Initiative and WMD Defeat Technologies programs. Efforts within this program element (PE) are rebalanced to enhance corporate capabilities in PE 0602718BR and PE 0603160BR to support Project RF – Detection Technology. The impacts delay full 3-D modeling and simulation efforts for electromagnetic pulse (EMP) response and consequence management predictions, to include second and third order effects.

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 5: <i>Development & Demonstration (SDD)</i> | R-1 ITEM NOMENCLATURE PE 0605000BR: <i>WMD Defeat Capabilities</i> |
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The DoD did not estimate FY 2011 costs when the FY 2010 President's Budget was prepared. There is a FY 2011 decrease that reflects the internal functional transfer of advisory and assistance services from DTRA's Research, Development, Test & Evaluation, Defense-Wide account to the Operation and Maintenance, Defense-Wide account. This transfer reflects the internal functional realignment of advisory and assistance services and other business-related costs that were formerly captured under DTRA's Research, Development, Test & Evaluation, Defense-Wide account to the Operation and Maintenance, Defense-Wide account. As part of DTRA's continued effort to integrate and refine its functions and activities, this transfer more appropriately aligns this funding to the proper appropriation. At the Agency level, this functional transfer between appropriations will have a zero sum impact to these budget line items. An additional decrease of \$.026 million is associated with changes in the inflation rates and therefore is a price change, not a program change.

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 5: <i>Development & Demonstration (SDD)</i> | R-1 ITEM NOMENCLATURE PE 0605000BR: <i>WMD Defeat Capabilities</i> | PROJECT RL: <i>Nuclear & Radiological Effects</i> |
|---|--|---|

| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|---|----------------|------------------|-----------------------|----------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------|
| RL: <i>Nuclear & Radiological Effects</i> | 15.499 | 8.689 | 7.307 | 0.000 | 7.307 | 6.660 | 5.432 | 5.508 | 5.587 | Continuing | Continuing |
| Quantity of RDT&E Articles | | | | | | | | | | | |

A. Mission Description and Budget Item Justification

Advanced Modeling Systems includes three functional areas 1) Integrated Weapons of Mass Destruction Toolset (IWMDT), 2) Nuclear Capability Services (NuCS), and 3) Consequence of Execution (CoE)-Nuclear Integration. NuCS develops the capabilities for the U.S. and its allies for state-of-the-art, secure, accredited, nuclear & radiological Modeling & Simulation (M&S) capabilities. The IWMDT develops the architecture, defines and implements the standards to consolidate validated Defense Threat Reduction Agency tools, and through this architecture, enables rapid access for planning, emergency response and assessment capabilities. These capabilities are used by a wide range of planners, managers, and operational and technical personnel facing the full spectrum of chemical, biological, radiological, nuclear, and high-yield explosives threats. CoE-Nuclear Integration provides the modeling capability to U.S. Strategic Command as well as enhancing the consequence assessment integration and testing for transition of Chemical, Biological, Radiological, Nuclear, and Explosive Events Science & Technology to the Joint Effects Model, Chemical-Biological Defense Program for hazard prediction. This sub-project extends research and development to system development and demonstration.

Funds are realigned from this project due to rebalancing of efforts to project RF – Detection Technology. The impacts are in the areas of advanced modeling systems and delay of full 3-D modeling and simulation efforts for electromagnetic pulse response and consequence management predictions, to include second and third order affects.

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|--|---------|---------|--------------|-------------|---------------|
| RL: Nuclear & Radiological Effects <i>FY 2009 Accomplishments:</i> - Complete Nuclear Weapon Effects Users Group accreditation of modeling and simulation in the Nuclear Capability Services (NuCS). - Provide fully distributed, transportable and mobile Chemical, Biological, Radiological and Nuclear (CBRN) capability solution meeting the CBRN requirements of forward deployed warfighters, first | 15.499 | 8.689 | 7.307 | 0.000 | 7.307 |

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 5: <i>Development & Demonstration (SDD)</i> | R-1 ITEM NOMENCLATURE PE 0605000BR: <i>WMD Defeat Capabilities</i> | PROJECT RL: <i>Nuclear & Radiological Effects</i> |
|---|--|---|

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---------|---------|--------------|-------------|---------------|
| <p>responders, analysts, and future planning users. Through this capability, users customize the CBRN portal to meet their decision support, analysis, and collaborative mission planning through a dynamically fused view.</p> <ul style="list-style-type: none"> - Deliver NuCS Spiral 2 capabilities through the Integrated Weapons of Mass Destruction Toolset framework meeting 80% of customer-required nuclear weapon effects Modeling & Simulation (M&S), enabling technology transfer to Program of Record and external systems as required. - Initiate NuCS Spiral 3 development addressing the remaining 20% of customer-required nuclear weapon effect M&S capabilities. - Deliver nuclear weapon improved water/urban burst prototype. <p><i>FY 2010 Plans:</i></p> <ul style="list-style-type: none"> - Establish an operational baseline Continuity of Operations capability for geographically separated real-time backup of all CBRN and Explosive Events capabilities. - Initial implementation of Net Centric Enterprise Services messaging and collaboration for use across exercise and operational deployments. - Migrate nuclear effects framework and Consequence of Execution – Nuclear Integration efforts to program of records for community use and broader integration. - Data replication synchronization implemented for disparate deployment methods. - Complete updated data verification from Nevada Test Site digs conducted in FY 2008. <p><i>FY 2011 Base Plans:</i></p> <ul style="list-style-type: none"> - Enhance the Continuity of Operations (COOP) functionality to allow “hot” updates and full Rapid Assessment and Identification support of alternate sites and capabilities. - Enhanced implementation of Net Centric Enterprise Services messaging and collaboration for use across exercise and operational deployments. - All three programs complete legacy tools migration, enter into a pure integration paradigm focused on “plug and play” methodology for emergent technologies into the extant Chemical, Biological, | | | | | |

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|---|--|---|

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---------|---------|--------------|-------------|---------------|
| Radiological, Nuclear and Explosive Integrated Weapons of Mass Destruction Toolset (IWMDT) framework. - Integrate Nevada Test Site dig data into Consequence of Execution – Nuclear Integration science efforts resulting in enhanced capabilities across IWMDT and the nuclear community tools. | | | | | |
| Accomplishments/Planned Programs Subtotals | 15.499 | 8.689 | 7.307 | 0.000 | 7.307 |

C. Other Program Funding Summary (\$ in Millions)

| <u>Line Item</u> | <u>FY 2009</u> | <u>FY 2010</u> | <u>FY 2011 Base</u> | <u>FY 2011 OCO</u> | <u>FY 2011 Total</u> | <u>FY 2012</u> | <u>FY 2013</u> | <u>FY 2014</u> | <u>FY 2015</u> | <u>Cost To Complete</u> | <u>Total Cost</u> |
|--|----------------|----------------|---------------------|--------------------|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| • 20/0602718BR: <i>WMD Defeat Technologies</i> | 15.041 | 19.704 | 16.776 | | 16.776 | 17.323 | 17.067 | 17.336 | 17.612 | Continuing | Continuing |

D. Acquisition Strategy

The programs for Integrated Weapons of Mass Destruction Toolset, Nuclear Capability Services, and Consequence of Execution are executed through competed, Cost Plus Award-Fee and Cost Plus Fixed-Fee contracts. These contracts are normally 3-year efforts for software development, test, and integration. Follow-on contracts will be competed for award to continue any out-year activities.

E. Performance Metrics

Demonstrate and provide over 80% of the customer-required Nuclear Weapons Effects (NWE) modeling and simulation capabilities over networks, e.g. Department of Defense Global Information Grid.

Transform 100% of the validated mission-required legacy Defense Threat Reduction Agency NWE codes to a net-centric implementation in a process-controlled Verification, Validation, and Accreditation standards-based method.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Defense Threat Reduction Agency | | | | | | | | | | DATE: February 2010 | | | |
| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 5: <i>Development & Demonstration (SDD)</i> | | | | R-1 ITEM NOMENCLATURE PE 0605000BR: <i>WMD Defeat Capabilities</i> | | | | PROJECT RL: <i>Nuclear & Radiological Effects</i> | | | | | |

Product Development (\$ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--|------------------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| System Development - IWMDT | C/CPAF | SAIC San Deigo, CA | 10.800 | 3.226 | Nov 2009 | 2.564 | Nov 2010 | 0.000 | | 2.564 | 28.000 | 44.590 | 42.000 |
| System Development - NuCS | C/CPFF | Applied Research Associates Albuquerque, NM | 2.100 | 1.560 | Nov 2009 | 1.270 | Nov 2010 | 0.000 | | 1.270 | 2.390 | 7.320 | 5.658 |
| System Development - COE | C/CPFF | Titan Kingstowne, VA | 4.149 | 0.942 | Nov 2009 | 0.444 | Nov 2010 | 0.000 | | 0.444 | 2.390 | 7.925 | 4.490 |
| System Development - Component Contracts | C/Various | Various Various | 3.772 | 0.957 | Dec 2009 | 0.344 | Dec 2010 | 0.000 | | 0.344 | 4.780 | 9.853 | 8.452 |
| Subtotal | | | 20.821 | 6.685 | | 4.622 | | 0.000 | | 4.622 | 37.560 | 69.688 | 60.600 |

Remarks

The "Various" reported reflects multiple contracts, mainly CPFF.

Support (\$ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--------------------------|------------------------|--------------------------------|------------------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Configuration Management | C/Various | SAIC, ARA, Titan Various | 0.122 | 0.000 | | 0.024 | Nov 2010 | 0.000 | | 0.024 | 0.180 | 0.326 | 0.302 |
| Software Integration | C/Various | SAIC, ARA, Titan Various | 2.600 | 0.000 | | 0.500 | Nov 2010 | 0.000 | | 0.500 | 6.079 | 9.179 | 8.679 |
| Technical Data | C/Various | SAIC, ARA, Titan | 0.042 | 0.000 | | 0.008 | Nov 2010 | 0.000 | | 0.008 | 0.070 | 0.120 | 0.112 |

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Defense Threat Reduction Agency **DATE:** February 2010

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 5: <i>Development & Demonstration (SDD)</i> | R-1 ITEM NOMENCLATURE PE 0605000BR: <i>WMD Defeat Capabilities</i> | PROJECT RL: <i>Nuclear & Radiological Effects</i> |
|---|--|---|

Support (\$ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|-------------------------------|------------------------|--------------------------------|------------------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| | | Various | | | | | | | | | | | |
| Engineering Services | C/Various | SAIC, ARA, Titan Various | 1.264 | 0.000 | | 0.200 | Nov 2010 | 0.000 | | 0.200 | 1.540 | 3.004 | 2.804 |
| Accreditation & Certification | C/Various | SAIC, ARA, Titan Various | 0.122 | 0.000 | | 0.024 | Nov 2010 | 0.000 | | 0.024 | 0.180 | 0.326 | 0.302 |
| Subtotal | | | 4.150 | 0.000 | | 0.756 | | 0.000 | | 0.756 | 8.049 | 12.955 | 12.199 |

Remarks

Test and Evaluation (\$ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---------------------------------|------------------------|--------------------------------|------------------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Developmental Test & Evaluation | C/Various | SAIC, ARA, Titan Various | 1.050 | 0.513 | Nov 2009 | 0.505 | Nov 2010 | 0.000 | | 0.505 | 2.012 | 4.080 | 3.050 |
| Operational Test & Evaluation | C/Various | SAIC, ARA, Titan Various | 1.050 | 0.512 | Nov 2009 | 0.505 | Nov 2010 | 0.000 | | 0.505 | 2.012 | 4.079 | 3.050 |
| Subtotal | | | 2.100 | 1.025 | | 1.010 | | 0.000 | | 1.010 | 4.024 | 8.159 | 6.100 |

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Defense Threat Reduction Agency **DATE:** February 2010

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| APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 5: <i>Development & Demonstration (SDD)</i> | R-1 ITEM NOMENCLATURE PE 0605000BR: <i>WMD Defeat Capabilities</i> | PROJECT RL: <i>Nuclear & Radiological Effects</i> |
|---|--|---|

Management Services (\$ in Millions)

| Cost Category Item | Contract Method & Type | Performing Activity & Location | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--------------------|------------------------|--------------------------------|------------------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| | | | | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Program Management | C/Various | SAIC, ARA, Titan Various | 1.050 | 0.467 | Nov 2009 | 0.479 | Nov 2010 | 0.000 | | 0.479 | 2.012 | 4.008 | 3.050 |
| Travel | C/Various | SAIC, ARA, Titan Various | 0.528 | 0.256 | Nov 2009 | 0.220 | Nov 2010 | 0.000 | | 0.220 | 1.006 | 2.010 | 1.525 |
| Overhead | C/Various | SAIC, ARA, Titan Various | 0.528 | 0.256 | Nov 2009 | 0.220 | Nov 2010 | 0.000 | | 0.220 | 1.006 | 2.010 | 1.525 |
| Subtotal | | | 2.106 | 0.979 | | 0.919 | | 0.000 | | 0.919 | 4.024 | 8.028 | 6.100 |

Remarks

| Project Cost Totals | Total Prior Years Cost | FY 2010 | | FY 2011 Base | | FY 2011 OCO | | FY 2011 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|------------------------|---------|--|--------------|--|-------------|--|---------------|------------------|------------|--------------------------|
| | | | | | | | | | | | |
| Project Cost Totals | 29.177 | 8.689 | | 7.307 | | 0.000 | | 7.307 | 53.657 | 98.830 | 84.999 |

Remarks

"All PY Costs" costs and activities for Integrated Weapons of Mass Destruction Toolset (IWMDT), Nuclear Capability Server (NuCS), and Consequence of Execution (COE) were assigned under Project BD of PE 0602716BR. IWMDT was funded in 2004 by a competed, CPAF contract for \$12,425,028 over a 3-year period. At end of FY 2006, its follow-on contract was awarded with an initial \$300,000 increment. IWMDT program efforts have continued into FY 2010 with \$28,961,730.49 now applied. Likewise, the NuCS program was funded under a competed, CPFF contract over a 3-year period with funding of \$5,913,235 applied through FY 2008; a follow-on contract has now been awarded with initial funding to date of \$2,355,880.00 to continue program efforts. COE was funded under a competed, CPFF contract with increments to date of \$6,566,087 total. Beginning in FY 2008, these activities began funding under PE 0605000BR. Beginning in FY10 the COENI follow-on contract anticipates funding \$1M.

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| Exhibit R-4A, RDT&E Schedule Details: PB 2011 Defense Threat Reduction Agency | | DATE: February 2010 |
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Schedule Details

| Event | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| Integrated Weapons of Mass Destruction Toolset (IWMDT) - System Development , Test, and Integration - Phase I | 1 | 2009 | 4 | 2009 |
| IWMDT - System Development, Test, and Integration - Phase 2 | 1 | 2010 | 4 | 2012 |
| IWMDT - System Development, Test, and Integration - Phase 3 | 1 | 2013 | 4 | 2015 |
| Consequence of Execution (COE) Development and Integration | 1 | 2009 | 4 | 2009 |
| COE Integration - Phase 2 | 1 | 2010 | 4 | 2012 |
| COE Integration - Phase 3 | 1 | 2013 | 4 | 2015 |
| Nuclear Capabilities Services (NuCS) - Spiral Development, Test, and Integration - Phase 1 | 1 | 2009 | 4 | 2009 |
| NuCS - Spiral 2 Development | 1 | 2010 | 4 | 2012 |
| NuCS - Spiral 3 Development | 1 | 2013 | 4 | 2015 |

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|---|--|--|

| COST (\$ in Millions) | FY 2009 Actual | FY 2010 Estimate | FY 2011 Base Estimate | FY 2011 OCO Estimate | FY 2011 Total Estimate | FY 2012 Estimate | FY 2013 Estimate | FY 2014 Estimate | FY 2015 Estimate | Cost To Complete | Total Cost |
|--------------------------------|----------------|------------------|-----------------------|----------------------|------------------------|------------------|------------------|------------------|------------------|------------------|------------|
| RR: <i>Test Infrastructure</i> | 0.000 | 0.800 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| Quantity of RDT&E Articles | | | | | | | | | | | |

A. Mission Description and Budget Item Justification

Test Infrastructure performs research and testing for the effects of Electromagnetic Pulse (EMP) attacks on the electric power grid and associated control systems, critical communications systems, and other defense critical infrastructures. Current modeling capabilities would be enhanced to include EMP effects and to allow analysis of multiple infrastructures supporting key Department of Defense facilities. This enhanced capability is needed by U.S. Strategic Command and other Department of Defense (DoD) components to address critical mission assurance concerns in the event of EMP attacks.

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total |
|---|---------|---------|--------------|-------------|---------------|
| RR - Test Infrastructure | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Test Infrastructure performs research and testing for the effects of Electromagnetic Pulse (EMP) attacks on the electric power grid and associated control systems, critical communications systems, and other defense critical infrastructures. Current modeling capabilities would be enhanced to include EMP effects and to allow analysis of multiple infrastructures supporting key Department of Defense facilities. This enhanced capability is needed by U.S. Strategic Command and other Department of Defense (DoD) components to address critical mission assurance concerns in the event of EMP attacks. <i>FY 2009 Accomplishments:</i> [*** PLEASE ENTER ACCOMPLISHMENT/PLANNED PROGRAM TEXT FOR PRIOR YEAR. ***] | | | | | |
| Accomplishments/Planned Programs Subtotals | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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|---|--|--|

B. Accomplishments/Planned Program (\$ in Millions)

| | FY 2009 | FY 2010 |
|--|---------|---------|
| Congressional Add: Electric Grid Reliability/Assurance | 0.000 | 0.800 |
| <i>FY 2009 Accomplishments:</i> [*** PLEASE ENTER CONGRESSIONAL ADD TEXT FOR PRIOR YEAR. ***] | | |
| <i>FY 2010 Plans:</i> <ul style="list-style-type: none"> - Determine and define the effects on the three elements of the power grid - Incorporate EMP effects and coupling models into tools to allow for analysis of power grid and communications impacts on the DoD mission assurance for key facilities and such as command and control nodes. - Develop and evaluate technologies to mitigate effects of EMP attacks | | |
| Congressional Adds Subtotals | 0.000 | 0.800 |

C. Other Program Funding Summary (\$ in Millions)

| Line Item | FY 2009 | FY 2010 | FY 2011 Base | FY 2011 OCO | FY 2011 Total | FY 2012 | FY 2013 | FY 2014 | FY 2015 | Cost To Complete | Total Cost |
|--|---------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|---------------------|------------|
| • 20/0602718BR: <i>WMD Defeat Technologies</i> | 17.411 | 19.651 | 21.528 | | 21.528 | 21.437 | 21.354 | 21.705 | 22.101 | Continuing | Continuing |

D. Acquisition Strategy

Interagency Cost Reimbursement Order (IACRO) to the National Nuclear Security Administration (NNSA).

E. Performance Metrics

Adapt EMP coupling models for DoD application and identify new Electromagnetic Pulse (EMP) mitigation technology for command and control facilities (fixed or mobile).

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