Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Defense Threat Reduction Agency											Date: March 2014	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*							
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	578.076	250.288	274.033	283.694	-	283.694	277.955	271.820	268.274	274.989	Continuing	Continuing
RA: *Information Science and Applications*	18.169	3.006	2.431	-	-	-	-	-	-	-	Continuing	Continuing
RE: *Counter-Terrorism Technologies*	229.573	106.967	111.658	108.630	-	108.630	104.129	113.606	108.229	110.239	Continuing	Continuing
RF: *Detection and Forensics Technologies*	150.452	69.331	74.556	66.707	-	66.707	68.770	70.727	71.058	72.959	Continuing	Continuing
RG: *Defeat Technologies*	32.879	17.034	21.811	19.591	-	19.591	22.532	23.231	23.625	24.030	Continuing	Continuing
RI: *Nuclear Survivability*	21.090	5.551	6.016	5.570	-	5.570	6.055	6.302	6.513	6.257	Continuing	Continuing
RM: *WMD Counterforce Technologies*	52.878	21.514	29.420	29.346	-	29.346	31.404	31.012	31.231	33.152	Continuing	Continuing
RR: *Combating WMD Test and Evaluation*	1.790	0.020	-	-	-	-	-	-	-	-	Continuing	Continuing
RT: *Target Assessment Technologies*	71.245	26.865	28.141	53.850	-	53.850	45.065	26.942	27.618	28.352	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

The Defense Threat Reduction Agency's (DTRA) mission is to safeguard the United States and our allies from global Weapons of Mass Destruction (WMD) threats by integrating, synchronizing, and providing responsive expertise, technologies, and capabilities unequalled by our adversaries. This mission directly reflects several national and Department of Defense level guidance/vision documents to include the National Security Strategy, Unified Command Plan, National Strategy to Combat WMD, Counterproliferation Interdiction, National Strategy for Combating Terrorism, National Military Strategy, Global Development of Forces, Global Employment of Forces, National Military Strategy for Combating WMD, National Military Strategic Plan for the War on Terrorism, Joint Strategic Capabilities Plan (including the Nuclear Annex), and Nuclear Posture Review. To achieve this mission, DTRA has identified principal objectives along with strategies and tasks to ensure the objectives are met. These objectives are:

1) Ensure a safe, secure, and effective nuclear deterrent;
2) Anticipate emerging WMD threats;
3) Provide Counter WMD (CWMD) situational awareness;
4) Assess infrastructure and personnel vulnerabilities;
5) Prevent proliferation and use of WMD;

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Defense Threat Reduction Agency	Date: March 2014
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*

6) Defend against WMD threats;
7) Defeat WMD threats;
8) Recover from WMD consequences;
9) Synchronize countering WMD activities.

The Proliferation, Prevention, and Defeat program element reduces WMD proliferation and enhances WMD defeat capabilities through advanced technology development. To accomplish this objective, eight project areas were developed: RA-Information Science and Applications, RE-Counter-Terrorism Technologies, RF-Detection and Forensics Technologies, RG-Defeat Technologies, RI-Nuclear Survivability, RM-WMD Counterforce Technologies, RR-Combating WMD Test and Evaluation, and RT-Target Assessment Technologies. These projects support technology requirements in line with the Joint Functional Concepts (Chairman, Joint Chiefs of Staff Instruction 3170.01).

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	275.022	274.033	275.880	-	275.880
Current President's Budget	250.288	274.033	283.694	-	283.694
Total Adjustments	-24.734	-	7.814	-	7.814
• Congressional General Reductions	-0.363	-			
• Congressional Directed Reductions	-21.783	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.588	-			
• Realignments	-	-	1.513	-	1.513
• Other Reductions	-	-	-22.699	-	-22.699
• Programmatic - Increases	-	-	29.000	-	29.000

Change Summary Explanation

The decrease in FY 2013 from the previous President's Budget submission is predominately due to Congressional reductions and the Small Business Innovation Research (SBIR) transfer. The increase in FY 2015 from the previous President's Budget Submission is a result of the net effect of decreased investments in nuclear detection, nuclear treaty technology, counter-terrorism/counterproliferation support and reachback tools and increased investment in the development and integration of high-priority find, characterize, and assess technologies in RT-Target Assessment Technologies. This project has the only identified solution capable of meeting a time sensitive, mission critical technology gap. Reduced investment impacted RA-Information Science and Applications, RE-Counter Terrorism Technologies, RF-Detection and Forensics Technologies, RG-Defeat Technologies, and RI-Nuclear Survivability.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	Project (Number/Name) RA / *Information Science and Applications*	

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
RA: *Information Science and Applications*	18.169	3.006	2.431	-	-	-	-	-	-	-	Continuing	Continuing

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

Note

*RA Project title change from Systems Engineering and Innovation starting in FY 2014

A. Mission Description and Budget Item Justification

The Information Science and Applications project provides (1) Technical Reachback support to create decision advantage for the United States and our Allies through improved situational understanding across the complete Combating Weapons of Mass Destruction (CWMD) mission space and (2) research and development support for cooperative programs, technology demonstrations, and vulnerability assessments that enhance foreign partner ability to assess, prevent, and respond to threats and events involving weapons of mass destruction. The Technical Reachback effort provides 24 hour/7 days per week information and analyses on potential impacts of a WMD event to Warfighters and First Responders in consult with DTRA's Combating WMD Research and Development subject matter experts. This effort develops and integrates capabilities and processes to support WMD effects and consequences, to include secondary and tertiary effects. This project also provides support to international CWMD science and technology cooperation by developing modifications, improvements, or new technologies and information tools suitable for foreign release and cooperative efforts. Further, this project provides the Defense Threat Reduction Agency (DTRA) on-site support to North Atlantic Treaty Organization (NATO) and Supreme Headquarters Allied Powers, Europe (SHAPE) with a current primary focus on support to U.S. European Command (USEUCOM), NATO, and SHAPE in combating WMD and maintaining the NATO nuclear deterrent. A significant element of this project includes support to Command Elements and the warfighting Combatant Commands (COCOMs) on strategies for reducing/countering the WMD threat in the COCOMs Areas of Responsibility. This project also provides for the solution to the Secretary of Defense mandate for DTRA to account, maintain, report, and track the National Nuclear Weapons Stockpile & Nuclear Weapon-Related Materiel during peacetime, crisis, and wartime. In support of national requirements necessary to maintain a viable nuclear deterrent, the Defense Integration and Management of Nuclear Data Services provides a platform to ensure continued sustainability and viability of the nuclear weapons stockpile.

The decrease from FY 2013 to FY 2014 is predominately due to the consolidation of Reachback Support operations in Project RM - WMD Counterforce Technologies in Program Element (PE) 0603160BR and increased investment in research and development analysis support funded by a transfer from PE 0602718BR. The decrease from FY 2014 to FY 2015 is due to the completion of efforts in building partner capacity development activities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RA: Information Science and Applications	3.006	2.431	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RA / *Information Science and Applications*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Project RA (Information Science and Applications) develops innovative technologies and modeling and simulation (M&S) capabilities and provides Technical Reachback support to create decision advantage for the U.S. and our Allies through improved situational understanding across the complete CWMD mission space. ***FY 2013 Accomplishments:*** - Completed initial development and integration phase of agent based modeling capabilities reducing computation time from hours to minutes for infectious disease modeling involving an area on the continental U.S. - Conducted Near Real Time Reachback demonstration with a nuclear scenario; demonstrated capability to model selected secondary and tertiary effects (e.g. electric power and transportation). - Demonstrated and validated software designed to assist our allies in understanding the effects of WMD. ***FY 2014 Plans:*** - Continue modifications and capability improvements to vulnerability assessment software and integrated WMD.			
Accomplishments/Planned Programs Subtotals	3.006	2.431	-

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 23/0602718BR: *WMD Defeat Technologies*	24.872	26.284	29.079	-	29.079	29.814	30.033	30.443	30.827	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Support the Office of Secretary of Defense, Joint Staff, COCOMs, Services, Nuclear Weapon Custodial Units, and Department of Energy.
Number of new capabilities delivered to COCOMs.
Number of requests for information/analysis submitted to Technical Reachback and returned to respective customers.
Meet NIMBLE ELDER threshold detection requirements for: vehicle-mounted area search, man-portable point search, stationary long-dwell detection for buildings, and stationary portal detection for roads.
Achieve measurable increases in force protection by developing detectors with low-visibility characteristics while maintaining or improving current detection stand-off capabilities.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RA / *Information Science and Applications*

Achieve measurable increases in mission effectiveness by expanding the speed and range of reconnaissance operations, improving tasking and tracking of reconnaissance capabilities, and narrow the selection of threat counter-reconnaissance alternatives.
Achieve measurable increases in timeliness and accuracy of target identification by improving data accuracy and delivery, speeding up data fusion and analysis, and/or boosting confidence levels for decision makers.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	Project (Number/Name) RE / *Counter-Terrorism Technologies*	

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
RE: *Counter-Terrorism Technologies*	229.573	106.967	111.658	108.630	-	108.630	104.129	113.606	108.229	110.239	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

The Counter-Terrorism Technologies project is an over-arching project that develops and transitions a full spectrum of new technologies to counter emergent Weapons of Mass Destruction (WMD) thus enabling warfighters to improve their ability to detect, disable, interdict, neutralize, and destroy chemical, biological, nuclear production, storage, and weaponization facilities. This project supports Joint U.S. Military Forces, and in particular, the U.S. Special Operations Command (USSOCOM). This research and development support directly enhances USSOCOM, the highest priority mission areas in the National Security Strategy, the National Strategy to Combat WMD, the National Military Strategy to Combat WMD, the Quadrennial Defense Review, and the Guidance on the Employment of the Force, and is therefore a high priority for the Defense Threat Reduction Agency (DTRA). The following efforts are included in this project:

The Counter WMD-Terrorism (CWMD-T) Counterproliferation (CP) research and development program is a collaborative effort with USSOCOM where the DTRA manages and sub-allocates funding directly to USSOCOM to develop warfighter-unique technologies in support of USSOCOM's Counterterrorism and Counterproliferation (CT/CP) mission. New CT/CP technologies are developed under USSOCOM management that provides warfighters with the operational capability to counter WMD threats.

The Counter WMD-Terrorism (CWMD-T) technologies program builds upon collaborative efforts with the warfighter. This program develops proofs of concept and subsequent advancements in research, development, testing, and evaluation (RDT&E) and provides multi-mission capabilities that may be applied throughout the entire spectrum of warfare while significantly eliminating collateral damage. The CWMD-T technologies program develops technologies to enable the warfighter to locate, identify, characterize, and access Chemical, Biological, Radiological, and Nuclear (CBRN) WMDs, their production and storage facilities, and associated enablers along multiple nodes concurrently or simultaneously within the terrorist pathway to disrupt, delay, degrade, destroy, or deny WMDs while minimizing risk to U.S. forces in support of CT/CP offensive operations.

The USSOCOM Combating Weapons of Mass Destruction – Terrorism Support Program (SCSP) addresses Commander USSOCOM responsibilities under the Chairman, Joint Chiefs of Staff (CJCS) Unified Command Plan (UCP) for integrating and synchronizing operations and activities to prevent terrorists from developing, acquiring, proliferating, or using WMD.

The increase from FY 2013 to FY 2014 is predominately due to increased investment in CWMD-T support to USSOCOM in FY 2014 for planned high fidelity CWMD test article development and testing and increased capabilities to address CWMD information gaps. The decrease from FY 2014 to FY 2015 is predominantly due to reduced investment in CWMD-T support to USSOCOM due to planned efficiencies in tool and application developments to counter WMD upstream defeat efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RE / *Counter-Terrorism Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RE: Counter-Terrorism Technologies	106.967	111.658	108.630

Description: Project RE provides research and development support to Joint U.S. Military Forces, specifically U.S. Special Operations Command (USSOCOM), in the areas of Explosive Ordnance Disposal (EOD) Device Defeat; counter-WMD technologies for warfighters; the USSOCOM Combating Weapons of Mass Destruction – Terrorism Support Program (SCSP); and oversight of counterproliferation (CP) research and development resources sent directly to USSOCOM for warfighter-unique CP technologies.

FY 2013 Accomplishments:
- Continued other planned development and transitioned new CP technologies for Joint U.S. Military Forces to counter WMD, enabling warfighters to improve their ability to detect, disable, interdict, neutralize, and destroy chemical, biological, and nuclear production, storage, and weaponization facilities.
- Continued work on successive multi-year efforts to develop high fidelity test articles for EOD Device Defeat program.
- Built EOD Device Defeat test objects for characterization and testing.
- Continued work on Knowledge Management Objectives begun in FY 2010; continued to test the effects of Radio Frequency (RF) signals on test objects and initiate a study of the effects of RF signals on explosives.
- Accelerated SCSP applications release cycle from six to four-month cycle in order to better support COCOMs. More responsive release schedule and application improvements have provided increased capability to COCOMs in the CWMD-T mission space.
- Released SCSP v1.1, 1.2 and 1.3 that included improved data management/search, integrated "machine reading" algorithms/ filters for Natural Language Processing (NLP) extraction, mapping/layering capabilities and an improved graphical user interface (GUI).

FY 2014 Plans:
- Continue other planned development and transition new CP technologies for Joint U.S. Military Forces to counter WMD, enabling warfighters to improve their ability to detect, disable, interdict, neutralize, and destroy chemical, biological, and nuclear production, storage, and weaponization facilities.
- Continue work on successive multi-year efforts to develop high fidelity test articles and enhanced electronic test objects for the EOD Device Defeat program.
- Develop impeded tools for Improvised Explosive Device (IED) triggers.
- Continue to support COCOM planning efforts related to CWMD-T.
- Continue multi-year efforts to develop and transition innovative CWMD tools designed to locate, identify, characterize, assess, and attack WMD production and storage facilities with minimal-to-no collateral damage or loss of life.
- Build precision shaped charges using a proven manufacturing process through the use or modification of an existing shaped charge design.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RE / *Counter-Terrorism Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Transition next generation imaging facilities to allow EOD forces advanced diagnostic capabilities. - Continue to improve and further enhance the usability and capability of CWMD-T global dynamic picture of the operating environment for use by the Department of Defense and United States Government Community of Interest. - Continue to improve upon COCOM planning efforts related to CWMD-T to include the scheduled release of automated planning and analyst support tools for large-scale data management and information extraction. - Continue modeling efforts to include application and integration of models into SCSP's high performance computing architecture. ***FY 2015 Plans:*** - Continue other planned development and transition of new CP technologies for Joint U.S. Military Forces to counter WMD, enabling warfighters to improve their ability to detect, disable, interdict, neutralize, and destroy chemical, biological, and nuclear production, storage, and weaponization facilities. - Continue work on successive multi-year efforts to develop high fidelity test articles and enhanced electronic test objects for the EOD Device Defeat program. - Develop impeded tools for IED triggers. - Continue to support COCOM planning efforts related to CWMD-T. - Continue multi-year efforts to develop and transition innovative CWMD tools designed to locate, identify, characterize, assess, and attack WMD production and storage facilities with minimal-to-no collateral damage or loss of life. - Build precision shaped charges using a proven manufacturing process through the use or modification of an existing shaped charge design. - Transition next generation imaging facilities to allow EOD forces advanced diagnostic capabilities. - Integrate Natural Language Processing (NLP) and Machine Reading capabilities into knowledge discovery and data/information pipeline for COCOM CWMD-T WMD analysis and planning. - Begin application of NLP to audio, photographic, and videographic data.			
Accomplishments/Planned Programs Subtotals	106.967	111.658	108.630

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 23/0602718BR: *WMD Defeat Technologies*	2.607	-	-	-	-	-	-	-	-	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RE / *Counter-Terrorism Technologies*

D. Acquisition Strategy

-Government and industrial performers are assessed and selected based upon a "best fit for task" criteria. DoD Services, Laboratories, Department of Energy (DOE) National Laboratories, and specialized university laboratories are common government awardees.
-SCSP-Evolutionary Acquisition profile leveraging ongoing DARPA and National Lab research programs in Natural Language Processing, Machine Reading, visual analytics directly linked to SOCOM WMD Enterprise and supporting all COCOM WMD-T plans.

E. Performance Metrics

Number of technologies developed, delivered, proof of concept demonstrations, and successful Military Utility Assessments. A high priority focus of these metrics is increasing potential mission success and reducing the number of current gaps in Special Operations Forces capabilities to counter WMD.
SCSP-Utility of SCSP applications and analytics to COCOM WMD-T planners and analysts as measured by number of application releases, users and COCOM feedback.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	Project (Number/Name) RF / *Detection and Forensics Technologies*	

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
RF: *Detection and Forensics Technologies*	150.452	69.331	74.556	66.707	-	66.707	68.770	70.727	71.058	72.959	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

The Detection and Forensics Technologies project under Counterproliferation Intiiatives - Proliferation, Prevention and Defeat emphasizes the advanced technology development and engineering portion of the overall effort.

This project develops technologies, systems and procedures to detect, identify, track, locate, monitor and interdict strategic and improvised nuclear and radiological weapons, components, or materials in support of Department of Defense (DoD) requirements for combating terrorism, counterproliferation and nonproliferation, homeland defense, and international initiatives and agreements. This project researches, develops, demonstrates, and transitions advanced technologies to improve operational capabilities to detect and identify nuclear and radiological weapons. It supports the attribution process through development, demonstration, and transition of improved post-detonation National Technical Nuclear Forensics (NTNF) capabilities in the areas of materials collection, debris diagnostics and materials analysis, and prompt diagnostics and device reconstruction. Efforts under this project also support international peacekeeping and nonproliferation objectives, on-site and aerial inspections and monitoring, on-site sampling and sample transport, and on- and off-site analysis to meet forensic, verification, monitoring, and confidence-building requirements.

The increase from FY 2013 to FY 2014 is predominately due to the relative effect of Congressional reductions in FY 2013 causing decreased investment in radiation detection. The decrease from FY 2014 to FY 2015 is predominantly due to reduced investment in novel advanced nuclear/radiological detection technologies and emerging requirements in support of nuclear treaties implementation.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RF: Detection and Forensics Technologies	69.331	74.556	66.707
Description: Project RF (Detection and Forensics Technologies) develops technologies, systems and procedures for post-detonation nuclear forensics, to detect, identify, track, tag, locate, monitor, and interdict strategic and improvised nuclear and radiological weapons, components, or materials in support of Department of Defense (DoD) requirements for combating terrorism, counterproliferation and nonproliferation, homeland defense, and international initiatives and agreements.			
FY 2013 Accomplishments: - Exploited all-source nuclear threat signatures and characteristics to improve probability of nuclear threat detection and reduce the occurrence of false alarms.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RF / *Detection and Forensics Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Completed initial development of three neutron detection materials to serve as alternatives to helium-3 for neutron detectors. - Completed operational testing of eleven prototype neutron detectors utilizing the best performing helium-3 replacement materials as determined by advanced and operational testing campaigns. - Completed fielding of four advanced, non-helium-3 neutron detection technologies as an alternative to helium-3 neutron detectors. - Initiated further development of the best performing helium-3 alternative neutron detection technologies. - Continued to develop the best performing neutron detection technologies as an alternative to helium-3 neutron detectors as determined by rigorous internal and advanced testing campaigns. - Completed design, development, fabrication, and testing of prototype passive detection systems for determining the location and signature of nuclear material; tested and characterized developmental prototype passive detection systems. - Completed development of a prototype room temperature high-resolution gamma imaging spectrometer. - Continued development of the Radiation Sensor Tagging, Tracking and Locating project, scheduled to transition in FY 2015. - Continued transitioning multiple near term technologies to generate prototypes and design packages to assist operational users. - Completed and field-tested two prototype systems that are scheduled to transition in FY 2014. - Completed design, development, and delivery of radiation detector system. - Continued to improve performance of new detector materials, imaging and spectroscopy systems, and signals analysis methods through rigorous laboratory and field testing. - Continued to perform field demonstrations of new detector technologies for handheld detectors, distributed sensors, and vehicle mountable detector systems, to improve the ability of fielded forces to detect, locate, and identify nuclear materials in the battle space. - Completed operational testing of eleven prototype neutron detectors utilizing the best performing helium-3 replacement materials as determined by advanced and operational testing campaigns. - Continued to develop the best performing neutron detection technologies as an alternative to helium-3 neutron detectors as determined by rigorous internal and advanced testing campaigns. - Completed and fielded extended use self-powered transport cases for high-resolution identification and characterization. - Continued testing, verification, and validation, of the Joint Semi-Automated Forces (JSAF) tool intended to provide nuclear detection simulation capability into the JSAF environment, an integrated, accurate, environment where the Concept of Operations (CONOPS) and physics of nuclear detection can be studied in tandem. - Continued development of a large standoff, directionally oriented, monoenergetic gamma (e.g. laser Wakefield/inverse Compton scattering accelerator) source for integration with an active interrogation system. - Researched and tested on-track to provide a final determination of military utility of bremsstrahlung-based active interrogation and standoff detection of nuclear threats by end of FY 2014. - Completed 85% of operational characterization of the emerging radiological active detection prototypes.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RF / *Detection and Forensics Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Developed, tested, demonstrated, and fielded prototype ground-based sensor capabilities for post-detonation prompt diagnostics (under DISCREET OCULUS). - Began installation of prompt diagnostics systems in first United States (U.S.) city. - Continued to develop and demonstrated advanced airborne and ground debris sample collection and integrated nuclear yield determination capabilities as part of the extended National Technical Nuclear Forensics (NTNF) Joint Capability Technology Demonstration (JCTD). - Continued to develop, demonstrate, and field (prototype) upgraded technical capabilities for sample analysis, modeling to support nuclear device reconstruction, and forensics data to lower uncertainties/increase confidence in technical nuclear forensics (TNF) conclusions. - Demonstrated Spiral 3 of the Arms Control Enterprise System (ACES) that addresses prototypes, new equipment, demos, telemetry. - Completed the software operations manual for ACES to enable transition to a new O&M maintenance contract. - Developed a prototype for a future generation ACES system based on the analysis of alternatives. - Conducted a warhead imaging experiment at a National Nuclear Security Administration (NNSA) nuclear facility. - Conducted a field demonstration of production signatures for the Fissile Material Cutoff Treaty. - Developed experiments and models to demonstrate the ability to simulate Underground Test (UGT) Electromagnetic Pulse (EMP) signatures in a field experiment in partnership with NNSA. - Continued the development of low-visibility improvements for NIMBLE ELDER detection equipment. - Developed and assessed algorithm improvements to current Radiological/Nuclear (R/N) detector technologies. - Investigated and demonstrated alternative neutron and gamma detection technologies for replacement of lower performing crystals and helium-3. - Developed enhancements to Combating Weapons of Mass Destruction (CWMD) network technologies, to include Unmanned Aerial Systems (UAS) retransmission platforms, to improve network reliability and range. - Conducted NIMBLE ELDER evaluation exercises assessing radiological/nuclear (R/N) detection technology at the TRL 3, 4, 5, & 6 level of development against the approved NIMBLE ELDER capability gaps. - Continued development of NIMBLE ELDER maritime detection capabilities. - Accelerated the development of non-radiological detection Science & Technology (S&T) projects. - Completed a JASON Advisory Group Summer Study on Cooperative Aerial Monitoring in support of the Treaty on Open Skies. - Completed Fidelity and Scalability of Nonnuclear Decoupling Experiments Study. - Completed 3D Seismic Moment-Tensor Inversion Report on methods to distinguish earthquakes from explosions in support of nuclear test monitoring. - Constructed electromagnetic pulser coil for EMP phenomenology experiments.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RF / *Detection and Forensics Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Developed soil buffers to detect nuclear fission products at trace levels using the Gradient Elution Moving Boundary Electrophoresis (GEMBE) prototype. - Conducted over 40 laser decoupling experiments at the Naval Research Laboratory's Nike laser test facility in support of NNSA computational models. - Conducted two small scale cavity decoupling tests and calibrated high fidelity computer models for near source response. - Completed historical airborne filter material testing and reported results. - Completed preliminary survey of materials capable of satisfying airborne Nuclear Debris Collection and Analysis (NDC&A) requirements. - Initiated efforts to expand NIMBLE ELDER capability to include Chemical and Biological threats; activities included threat characterization, technology survey, limited equipment procurement, pilot team training, CONOPs development, and user evaluation.			
FY 2014 Plans: - Continue near-source strong motion-small scale tests and high fidelity analysis for detection and identification of low yield and evasive testing. - Conduct additional laboratory experiments with lasers to assess shock/seismic and electromagnetic signatures from underground nuclear tests including the first decoupling experiments with the National Ignition Facility. - Conduct warhead imaging experiments and demonstrations for warheads deployed on strategic launch and delivery systems that could lead to adoption of this technology for verification of future START treaties. - Down-select to the most promising warhead characterization approach for application to future START treaties. - Test and transition a prototype version of the Knowledge Management Strategic Information System software for future START and other treaty database and notification needs. - Field a prototype for an on-site inspection system and virtual training tool for nuclear materials production monitoring in support of the Fissile Material Cutoff Treaty and the Army nuclear disablement mission. - Develop and demonstrate advanced materials for particulate and gaseous radionuclides to detect underground nuclear testing in support of Air Force and international treaty monitoring requirements. - Conduct international partnership high explosive tests to calibrate seismic and infrasound international monitoring stations. - Continue preparations for R/N detector program of record decisions. - Expand the level of non-radiological sensor support for R/N search operations. - Continue to develop, accelerate development where appropriate, demonstrate, and field (prototype) upgraded technical capabilities for prompt diagnostics (under DISCREET OCULUS and MINIKIN ECHO) and debris sample collection, sample analysis, modeling to support nuclear device reconstruction, and forensics data to lower uncertainties/increase confidence and improve timeliness of TNF conclusions. Includes development of new debris collection, field analysis concepts, in-laboratory			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RF / *Detection and Forensics Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
timeline improvements, new signature development, improved modeling and simulation capabilities, and other supporting technologies. - Continue development of methods to rapidly determine post-event nuclear weapon yields and reaction history by investigating alternative prompt nuclear weapons effects, effects on the environment, and developing/fielding prototype capabilities. - Continue exploiting all-source nuclear threat signatures, characteristics, and corresponding detection modalities; develop the proper tipping, queuing, and data fusion techniques and algorithms to enable the rapid and effective accumulation of all-source intelligence on nuclear threat scenarios. - Continue design and fabrication of prototype passive detection systems for determining the location and signature of nuclear material; test and characterize developmental prototype passive detection systems. - Continue to develop and demonstrate alternative neutron detection technologies for replacement of helium-3 neutron detectors. - Complete the development of a modular based detection system using near term technologies to generate prototypes and design packages to assist operational users. - Complete development of room temperature high-resolution spectrometers to determine signature of nuclear material. - Continue to develop CWMD network technologies. - Continue the development of force protection modifications to R/N detector technologies. - Develop and assess software improvements to current R/N detector technologies. - Expand the development of CWMD/Technical Support Group training technologies for R/N search equipment.			
FY 2015 Plans: - Continue identifying all-source nuclear threat signatures, characteristics, and corresponding detection modalities; continue the identification and development of the proper tipping, queuing, and data fusion techniques and algorithms to enable the rapid and effective accumulation of all-source intelligence on nuclear threat scenarios. - Design and fabricate of prototype passive detection systems for determining the location and signature of nuclear material; test and characterize developmental prototype passive detection systems. - Improve performance of new detector materials, imaging and spectroscopy systems, and signals analysis methods through rigorous laboratory and field testing. - Begin to integrate recent advances in materials science into lightweight, high-resolution radiation spectrometers for use in field operations. - Develop, demonstrate, and field methods to remotely monitor small and wide areas which may contain nuclear threats. - Research and develop advanced 3D imaging technologies for high resolution source characterization and identification to provide new and improved capabilities to detect, locate, identify, and characterize threat materials. - Begin transitioning multiple near term technologies to generate prototypes and design packages to assist operational users. - Conduct advanced and operational testing and evaluation of radiation detection systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RF / *Detection and Forensics Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Begin design, development, and fabrication of new radiological test objects. - Improve performance of new detector materials, imaging and spectroscopy systems, and signals analysis methods through rigorous laboratory and field testing. - Begin transitioning multiple near term technologies to generate prototypes and design packages to assist operational users. - Research, develop, test, evaluate, and deliver software tools and capabilities to locate and identify the signatures of special nuclear materials on both existing and newly developed hardware platforms. - Conduct advanced and operational testing and evaluation of radiation detection systems. - Continue development, accelerate development where appropriate, demonstrate, and field methods to remotely monitor small and wide areas which may contain nuclear threats. - Begin to research and develop 3D imaging technologies for high resolution source characterization and identification to provide new and improved capabilities to detect, locate, and identify threat materials. -Begin design, development, and fabrication of new radiological test objects. - Develop, accelerate development where appropriate, test, demonstrate, and field prototype ground-based sensor capabilities for post-detonation prompt diagnostics under DISCREET OCULUS. - Complete installation of prompt diagnostics systems in second U.S. city. - Continue to develop, test, demonstrate, and field (prototype) upgraded technical capabilities for prompt diagnostics, debris collection, sample analysis, modeling to support nuclear device reconstruction, and forensics data to decrease timeline, lower uncertainties, and increase confidence in technical nuclear forensics (TNF) conclusions. - Continue near-source strong motion small scale tests and high fidelity analyses for detection and identification of low yield and evasive testing. - Develop modular prototype using advanced materials for particulate and gaseous radionuclides detection of evasive testing in support of U.S. and international treaty monitoring requirements. - Provide S&T development to support onsite inspections. - Begin implementing R/N detector Program of Record decisions. - Transition wide area search modular prototypes into an operational configuration to replace the current systems - Transition software improvements to current R/N detector technologies. - Transition selected ship search capabilities into an operational configuration for fielding to the TSGs. - Continue to enhance CWMD network technologies by exploiting the operational advantages of DoD's cellular communications program. - Continue to expand non-radiological sensor support for R/N search operations. - Expand the development of CWMD/TSG training technologies for R/N search equipment.			
Accomplishments/Planned Programs Subtotals	69.331	74.556	66.707

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
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C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 23/0602718BR: *WMD Defeat Technologies*	41.343	36.102	35.061	-	35.061	35.548	36.522	37.382	38.223	Continuing	Continuing
• 121/0605000BR: *System Development and Demonstration*	-	6.906	6.887	-	6.887	7.156	7.397	7.497	7.625	Continuing	Continuing

Remarks

D. Acquisition Strategy

Continue to implement the approved CWMD SEARCH Modernization Strategy for the transition of Science & Technology projects to DoD programs of record at the Milestone A decision for rapid capability fielding.

E. Performance Metrics

Successful operational development and operational acceptance of transitional technologies.
Successful completion of the Intelligent Personal Radiation Locator (IPRL) program.
Successful completion of the radiation sensor with tagging, tracking, and locating project.
Successful completion and transition of the modular radiation detector system.
Successful completion and transition of the Man-Portable Detection System.
Successful testing of the first prototype hand-held high-resolution detector.
Successful completion of imaging and characterization test to down-select threat device characterization system.
Conduct/support end-to-end National Technical Nuclear Forensics capabilities exercises and supporting demonstration(s).
Installation of ground-based prompt diagnostics systems in first and second U.S. cities by the end of FY 2015.
Successfully test, demonstrate, field, and/or transition nuclear forensics technologies/capabilities to an operational customer.
Down-select of new signatures, surrogate urban debris production routes, and technology requirements for field analysis capabilities.
Support development of National Technical Nuclear Forensics (NTNF) capabilities through development of technologies/prototypes addressing gaps and shortfalls in Department of Defense (DoD) NTNF capabilities, and through participation in the interagency process. Note: More specific metrics associated with NTNF gaps and shortfalls are classified.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RG / *Defeat Technologies*	

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
RG: *Defeat Technologies*	32.879	17.034	21.811	19.591	-	19.591	22.532	23.231	23.625	24.030	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

The Defeat Technologies project develops, integrates, demonstrates and transitions innovative kinetic and non-kinetic weapon capabilities to expand traditional and asymmetric options available to Combatant Commanders (CCDRs) to deny, disrupt, and defeat adversarial use of Weapons of Mass Destruction (WMD) while minimizing collateral effects from incidentally released agents. Technology development focuses on the physical or functional defeat of (1) chemical, biological, radiological, and nuclear (CBRN) threat materials, (2) an adversary's ability to deliver the same, as well as (3) the physical and non-physical support networks enabling both. It does so through the systematic identification and maturation of advanced technologies capable of defeating WMD agents or agent based processes, then integrating them into weapons, delivery systems or rapid WMD elimination capabilities that are most relevant to the Combatant Commands (COCOMs) WMD Defeat Concept of Operations (CONOPS) and their Area of Responsibility (AOR). This program includes developing specific WMD agent/agent-based process simulants, test infrastructure, and sampling capability required for effective development, testing, and evaluation (DT&E) of next-generation capabilities to ensure optimum weapon solutions are achieved based on this technology. The program is addressing defeat of adversaries' offensive WMD programs through integration of current conventional weapons capabilities and next generation kinetic and non-kinetic solutions to provide full-spectrum asymmetric defeat options. The program addresses requirements delineated in the Quadrennial Defense Review and Strategic Planning Guidance as codified in the Joint Capabilities Integration and Development System (JCIDS), Service requirements documents, and COCOM and Agency Priority Lists for lethal and non-lethal Counter-WMD (C-WMD) capability.

The increase from FY 2013 to FY 2014 is predominately due to increased investment in C-WMD Hard Target Defeat (HTD) Weapons Technologies efforts in FY 2014. The decrease from FY 2014 to FY 2015 is predominantly due to reduced investment in Next Generation C-WMD Weapon Concept research and demonstration of select technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RG: Defeat Technologies	17.034	21.811	19.591
Description: Project RG (Defeat Technologies) develops advanced technologies and weapon concepts and validates their applicability to C-WMD.			
FY 2013 Accomplishments: - Continued improvements for defeat of WMD in soft targets. - Continued maturing diagnostic capability to meet emerging needs and field improved capabilities for agent defeat. - Completed initial Heated And Mobile Munitions Employing Rockets (HAMMER) technology demonstration weapon design, critical component testing, and payload subscale bio defeat tests.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RG / *Defeat Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Conducted Modular Autonomous Counter-WMD System (MACS) proof-of-principle demonstration. - Completed Integrated Precision Ordnance Delivery System (IPODS) Phase II Preliminary Design. - Issued MACS Phase III First Generation System Concept Request for Proposal. - Initiated design of a functional defeat testbed. ***FY 2014 Plans:*** - Continue improvements for defeat of WMD in soft targets. - Continue maturing diagnostic capability to meet emerging needs and field improved capabilities for agent defeat. - Complete HAMMER system integration testing. - Complete HAMMER Advanced Technology Development (ATD) weapon design, critical component testing, and payload subscale bio defeat tests. - Complete HAMMER full-scale test. - Complete Modular Autonomous Countering WMD System (MACS) component integration. - Design MACS Family of Systems (FOS) architecture. ***FY 2015 Plans:*** - Continue development of access denial or denial-of-use technologies for WMD targets. - Complete Next Generation C-WMD weapon design. - Initiate full-scale lethality tests for Next Gen Agent Defeat weapon. - Complete functional defeat testbed and initial test events.			
Accomplishments/Planned Programs Subtotals	17.034	21.811	19.591

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 23/0602718BR: *WMD Defeat Technologies*	13.544	15.059	10.982	-	10.982	11.769	11.492	11.804	12.072	Continuing	Continuing

Remarks

D. Acquisition Strategy

Government and industrial performers are assessed and selected based upon a “best fit for task” criteria. DoD Services Laboratories, Department of Energy DOE National Laboratories, and specialized university laboratories are common government awardees.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RG / *Defeat Technologies*

E. Performance Metrics

Evaluate weapon system component technologies required for development of at least one new capability to counter WMD during the FYDP to Technology Readiness Level (TRL) 4/5.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	Project (Number/Name) RI / *Nuclear Survivability*	

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
RI: *Nuclear Survivability*	21.090	5.551	6.016	5.570	-	5.570	6.055	6.302	6.513	6.257	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

The Nuclear Survivability project develops and demonstrates Radiation Hardened Microelectronics (RHM) for nuclear hardening and survivability of Department of Defense's (DoD) systems and provides for the execution of force-on-force evaluations and nuclear weapons surety efforts to enhance the protection of nuclear resources.

The RHM program responds to DoD space and missile system requirements for RHM and photonics technology to support mission needs. This program develops and demonstrates radiation-hardened, high performance prototype microelectronics to support the availability of RHM and photonics for DoD missions from both private sector and government organizations.

Mighty Guardian Force-on-Force Tests aid in satisfying requirements for the Services by providing denial of access to nuclear resources in all environments: operational, storage and in transit. The results of the evaluations identify security vulnerabilities to weapons systems that are then addressed through targeted application of research and development projects requested by the resource owners. These projects are designed to demonstrate, test, and evaluate security enhancement systems prior to service procurement.

Nuclear Weapons Surety, as tasked by the DoD Nuclear Weapon System Safety Program, provides Combatant Commands (COCOMs), Services, and Joint Chiefs of Staff with technical analyses, studies, research, and experimental data necessary to identify and quantify risks of plutonium dispersal and Loss of Assured Safety due to accidents, fires, or natural causes during peacetime operations of the nation's nuclear weapon systems. Additionally, this will provide studies necessary to quantify the probability of success against targeted terrorist attacks on DoD facilities, while leveraging these risk assessment advances. It also provides new and innovative technologies for the protection of nuclear resources in support of COCOMs and Services.

The increase from FY 2013 to FY 2014 is predominately due to the relative impact of Congressional reductions to nuclear surety in FY 2013. The decrease from FY 2014 to FY 2015 is predominately due to the net impact of increased investment in stockpile logistics and decreased investment in nuclear surety in FY 2015.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RI: Nuclear Survivability	5.551	6.016	5.570
Description: Project RI (Nuclear Survivability) provides the capability for DoD nuclear forces and their associated control and support systems and facilities in wartime to avoid, repel, or withstand attack or other hostile action, to the extent that essential functions can continue or be resumed after the onset of hostile action.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RI / *Nuclear Survivability*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: - Transitioned 90nm Application Specific Integrated Circuit (ASIC) Qualified Manufacturer List radiation hardened microelectronics activity to user community. - Transitioned 90nm radiation hardened 64Mb Static Random Access Memory (SRAM) to user community. - Conducted engineering studies in support of planned Mighty Guardian XVI Force-on-Force test to evaluate nuclear security policy for Prime Nuclear Airlift Forces (PNAF) and On-Base Convoys at 377th Air Base Wing Headquarters, Albuquerque, NM. - Conducted research, development, test, and evaluation on physical security technologies designed to enhance protection of the nuclear stockpile as determined by the Services. - Conducted Mighty Guardian XV Force on Force test & evaluation of nuclear security policy at Naval Base Kingsbay, GA. - Conducted Mighty Guardian Out of Cycle Test (OOCT) Discrete Xena III (DXIII) during a Launch Facility (LF) Maintenance engineering study at F.E. Warren AFB, WY. ***FY 2014 Plans:*** - Test and characterize radiation effects on advanced technology testing and characterization. - Conduct engineering studies in support of and plan for Mighty Guardian XVII Force-on-Force test to evaluate nuclear security policy for Navy Limited Areas at Strategic Weapons Facility Pacific, Naval Base Kitsap, and Washington. - Conduct research, development, test, and evaluation on physical security technologies designed to enhance protection of the nuclear stockpile as determined by the Services. ***FY 2015 Plans:*** - Develop Satellite Protection Standard. - Conduct research, development, test, and evaluation on physical security technologies designed to enhance protection of the nuclear stockpile as determined by the Services. - Develop next generation of Defense Integration and Management of Nuclear Data Services (DIAMONDS) network and infrastructure design, leverage IT improvements, and modernize DIAMONDS software code; conduct preliminary design review and meet with users. - Conduct engineering studies in support of and plan for Mighty Guardian XVII Force-on-Force test to evaluate nuclear security policy for Navy Limited Areas at Strategic Weapons Facility Pacific, Naval Base Kitsap, and Washington.			
Accomplishments/Planned Programs Subtotals	5.551	6.016	5.570

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RI / *Nuclear Survivability*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 23/0602718BR: *WMD Defeat Technologies*	19.133	19.649	19.416	-	19.416	19.319	19.405	19.807	20.424	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Achieve Radiation Hardened and Radiation Hardened by Design (RHBD) 90nm ASIC design flow capability.

Successful completion of Mighty Guardian exercises is measured by completing all necessary planning and logistics steps, troops arriving when required, training completed, execution of the exercise, redeployment of forces, and publishing a final report within 90 days of completion.

Successful completion of research, development, test, and evaluation for physical security technologies is determined by performers completing the project on-time and within budget, all stated tasks in the statement of work/objectives being met, proper reporting and coordination of decision areas, receipt of final reports closing out the project, and transitioning the project to the requesting Service.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	Project (Number/Name) RM / *WMD Counterforce Technologies*	

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
RM: *WMD Counterforce Technologies*	52.878	21.514	29.420	29.346	-	29.346	31.404	31.012	31.231	33.152	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

The Weapons of Mass Destruction (WMD) Counterforce Technologies project develops, integrates, demonstrates and transitions emerging/innovative technologies to support the counter WMD Mission. This activity specifically focuses on three critical components in countering the WMD threat: (1) end-to-end planning capabilities; (2) emerging/innovative technologies; and (3) Technical Reachback support.

Developing end-to-end planning capabilities includes: weaponeering tools to aid the Combatant Command's (COCOM) targeting and weapons officers in choosing the proper weapon, fuze, and employment parameters to optimize the defeat of WMD and related hard targets delivering modernized, validated and fast running attack planning tools, and integrating software. Leveraging attack planning tools to support force protection planners and vulnerability assessment teams.

Emerging/innovative technologies are developed, integrated, demonstrated and transitioned to provide the warfighter with an enhanced near real-time combat and battle damage assessment capability. Capability is achieved through the development of Unmanned Aerial Systems (UAS) and weapon-based sensors, platforms, taggants, seekers and other innovative technologies to: remotely sense, identify, track and target WMD-related threats; perform battle damage assessment/indication of strikes against these threats; and locate, track, collect, detect, selectively identify, and characterize Chemical Weapon and Biological Weapon aerosol agents released during these WMD counterforce strikes.

The Technical Reachback support provides 24 hour/7 days per week information and analyses on potential impacts of a WMD event to Warfighters and First Responders in consult with DTRA's Combating WMD Research and Development subject matter experts. This effort develops and integrates capabilities and processes to support WMD effects and consequences, to include secondary and tertiary effects.

The increase from FY 2013 to FY 2014 is predominately due to increased investment in WMD Intelligence, Surveillance, and Reconnaissance activities and the consolidation of Reachback support operations from Project RA-Information Science and Applications.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RM: WMD Counterforce Technologies	21.514	29.420	29.346
Description: Project RM (WMD Counterforce Technologies) provides (1) novel and enhanced weapons energetic materials and structures, full-scale testing of counter-WMD (C-WMD) weapons effects, weapons effects modeling, and weapon delivery optimization, (2) WMD sensor, surveillance, and data processing technologies, and (3) Technical Reachback support.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RM / *WMD Counterforce Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: - Conducted Phase 1 development of highly specialized chemical/biological sensors for tracking WMD. - Demonstrated an integrated counter-WMD sensor proof of concept within a mission-based experiment at a major United States Special Operations Command (USSOCOM) exercise. - Conducted a proof of concept evaluation of Chemical, Biological, Radiological, Nuclear (CBRN)-responsive transformational materials compatible with optical detection. - Developed a prototype Counter-WMD (CWMD) Tag, Track and Locate (TTL) device and conducted proof of concept demonstration at the Trident Spectre 13 (TS-13) exercise. - Conducted successful proof of concept testing of porous Silicon (pSi) material for detection of WMD production byproducts. - Completed Technology Transition Agreement (TTA) with Army Project Manager, Unmanned Aircraft Systems (UAS) for WMD Aerial Collection System (WACS)-Shadow UAS integration. - Supported Army with WACS pod component optimization and ruggedization required for integration/certification on the Shadow UAS. - Completed integration of a satellite communications (SATCOM)-based beyond line of sight (BLOS) capability for the WACS payload. - Completed a U.S. Army Training and Doctrine fielding suitability evaluation of the WACS Operational Needs Statement (ONS). - Participated in Ulchi Freedom Guardian 2013 (UFG-13) exercise in Korea and validated United States Forces Korea (USFK) WACS Concept of Operations (CONOPS) and the U.S. Army's 2nd Infantry Division's UAV Standard Operating Procedures. - Completed a comprehensive Analysis of Alternatives study for a CBRN Air-droppable Remotely Deployed Sensor System (CARDS) and identified air vehicle requirements for sensor deployment. - Completed prototype CARDS airframe design, integrated the autopilot flight control system, and conducted local flight testing to characterize mission profile flight characteristics. - Completed an analysis and reported on the use of hyperspectral imaging for the detection of chemical precursors present during the production of chemical warfare agents. - Completed and documented a threat analysis for the Biological (Bio) Intelligence, Surveillance, and Reconnaissance (ISR) project. - Completed a Bio-ISR Table Top Exercise with representatives from USSOCOM and the Intelligence Community to identify requirements and capability gaps for bio-search missions. - Completed an Analysis of Technologies Report to guide investments for Bio-ISR program. - Delivered the Vulnerability Assessment and Protection Option (VAPO) planning tool with improved progressive collapse modeling capabilities.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RM / *WMD Counterforce Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Delivered Integrated Munitions Effects Assessment (IMEA) planning tool improvements/corrections to include weapon cratering methodology, bomb fragment environment predictions and nuclear weapons effects and planning (IMEA 2010.0.3). - Integrated IMEA 2010.0.3 into Air Force's fielded suite of targeting applications (Targeting Application Workstation (TAW) program of record, Spiral 12). - Led AF-sponsored development efforts to improve IMEA Large Caliber Penetrator weapons effects predictions and supported planning tool integration (IMEA 11.1). - Performed verification and validation supporting Modeling and Simulation (M&S) accreditation of IMEA 11.0 conventional and nuclear planning capabilities. - Provided Targeting/Weaponeering academics and targeting recommendation packages supporting Combatant Command (COCOM) requirements. - Provided over 1300 products supporting requests for information on WMD effects and consequences. - Completed initial development and integration phase of agent based modeling capabilities reducing computational time from hours to minutes for infectious disease modeling involving major population areas in the continental U.S. - Began initial planning effort for the National CWMD Technical Reachback Enterprise (NCTRE), providing DoD with a singularly focused Technical Operations Hub to link DoD, Interagency, and other national/international CBRN subject matter experts (SMEs) into a collaborative, net-centric information environment.			
FY 2014 Plans: - Continue to support the COCOMS with the further refinement and development of operation center critical technologies that will enhance the capability of rapid response in relation to next generational reachback capabilities. - Complete the effort to integrate first principle nuclear fallout modeling codes into Graphical User Interface (GUI)-based hazard prediction models. - Continue development of capability to model secondary and tertiary effects supporting optimal course of action and tactical decisions for WMD operations, including power and communication infrastructure. - Begin development of technologies and methods for comprehensive WMD consequence assessment to potentially include PMESII (Political, Military, Economic, Social, Infrastructure, and Information) implications – will support United States Strategic Command's (USSTRATCOM) consequence of execution analyses. - Deliver IMEA 11.1 (Near Miss Lethality/Multi-Hit/Ultra-High Performance Concrete (UHPC) Penetration/LCP Enhancements). - Deliver VAPO 6.1 (Improved Blast Model/Glass Curtain Wall Model). - Deliver Targeted Weaponeering Assistance Cell (TWAC) academic sessions and targeting recommendation pages supporting COCOM requirements. - Demonstrate Silent Scout Chemical/Rad Sensor Delivery – Other Government Agency (OGA). - Demonstrate Nano-scale Transformational Rad Tag.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Continue WACS and Army Shadow UAS integration efforts and Air Worthiness Certification. - Develop WMD ISR system architecture. - Conduct WMD ISR signature characterization and phenomenology research. - Continue development and integration of agent based modeling capabilities, including secondary and tertiary effects linked with social behavior resulting from WMD insult. - Develop parallel version of transport and dispersion code to allow faster and more complex data analysis execution on high performance computing resources. - Support requests for information providing technical advisory reachback support on WMD effects and consequences – expected workload of over 1,600 requests for information.			
FY 2015 Plans: - Develop parallel version of transport and dispersion code to allow faster analysis execution on high performance computing resources. Coupled with FY 2014 enhancements, provide upgraded capability to run faster, finer and larger analyses. - Continue development and integration of agent. - Demonstrate a novel chemical/biological sensor for a CWMD TTL application. - Demonstrate a multi-modal chemical sensor integrated in a TTL device. - Conduct a demonstration of scintillating transformational material for CWMD application within an operational architecture. - Support PM UAS in completing WACS transition activities, fielding, and procurement. - Design, integrate, and demonstrate CARDS payload captive carry system for CBRN sensor packages. - Conduct a CARDS system demonstration of precision emplacement using representative CBRN sensor packages. - Conduct Phase I demonstration of enhanced near-term bio-search/detection sensors for Department of Defense and Intelligence Community customers. - Conduct down-select of multi-mode sensor systems for bio-terrorism threat detection. - Initiate Phase II development of select sensor systems for use in detecting small-scale biological labs. - Deliver the VAPO planning tool with improved infrastructure modeling capabilities, including secondary effects from improved vehicle borne improvised explosive device models, and tertiary effects linked with social behavior resulting from WMD insult. - Develop coarse, worldwide population and activity database to enable rapid emergent refined, country level synthetic infrastructures for agent-based improved urban site modeling operational capabilities. - Deliver capabilities developed in FY 2014 (IMEA 11.1). - Demonstrate High Performance Computing integration using improved software infrastructure developed in FY 2014. - Develop Enhanced Tunnel/ Hard and Deeply Buried Targets (HDBT) defeat modeling capabilities in the areas of High Strength Concrete weapon penetration and Steep Slope cratering/rubble model. - Start development to support non-kinetic weapons effects and full-spectrum defeat capability.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RM / *WMD Counterforce Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Develop improved Agent Defeat modeling capabilities for WMD target attack planning. - Deliver Targeting/Weaponeering academics and targeting recommendation packages supporting COCOM requirements.			
Accomplishments/Planned Programs Subtotals	21.514	29.420	29.346

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 23/0602718BR: *WMD Defeat Technologies*	18.026	14.444	13.787	-	13.787	13.583	13.807	14.133	14.607	Continuing	Continuing

Remarks

D. Acquisition Strategy

Government and industrial performers are assessed and selected based upon a “best fit for task” criteria. DoD Services, Laboratories, DoE National Laboratories, and specialized university laboratories are common government awardees.

E. Performance Metrics

Standoff detection range of WMD reconnaissance system.
Number of technology demonstrations completed.
Number of new capabilities delivered to COCOMs.
Number of Targeting/Weaponeering academics and target recommendation packages and weaponeering solutions delivered to COCOMs.
Increase automation of the analytic process used by Defense Threat Reduction Agency (DTRA) Technical Reachback, DTRA Joint Operations Center and the U.S. Strategic Command Center for Combating WMD.
Number of requests for information/analysis submitted to Technical Reachback and returned to respective customers.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	Project (Number/Name) RR / *Combating WMD Test and Evaluation*	

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
RR: *Combating WMD Test and Evaluation*	1.790	0.020	-	-	-	-	-	-	-	-	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

Project RR provides a unique national test bed capability for simulated WMD facility characterization, weapon-target interaction, and WMD facility defeat testing to respond to operational needs by developing and maintaining test beds used by the DoD, the Services, the Combatant Commanders and other federal agencies to evaluate the implications of WMD, conventional, and other special weapon use against U.S. military or civilian systems and targets.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RR: Combating WMD Test and Evaluation	0.020	-	-
FY 2013 Accomplishments: - Supported the setup and execution of the Integrated Standoff Inspection System (ISIS) Experiment test campaign			
Accomplishments/Planned Programs Subtotals	0.020	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 23/0602718BR: *WMD Defeat Technologies*	10.425	12.659	11.060	-	11.060	11.182	11.809	12.091	12.426	Continuing	Continuing

Remarks

D. Acquisition Strategy

Government and industrial performers are assessed and selected based upon a "best fit for task" criteria. DoD Services Laboratories, Department of Energy (DOE) National Laboratories, and specialized university laboratories are common government awardees.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency			Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	Project (Number/Name) RT / *Target Assessment Technologies*	

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
RT: *Target Assessment Technologies*	71.245	26.865	28.141	53.850	-	53.850	45.065	26.942	27.618	28.352	Continuing	Continuing

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

A. Mission Description and Budget Item Justification

For some Weapons of Mass Destruction (WMD) targets and hard and deeply buried targets (HDBTs), physical destruction may not be possible, practical, or desirable with current conventional weapons and employment techniques. It may be possible or preferable, to achieve operational objectives by denying or disrupting the mission or function of the target facility. Functional defeat, however, requires extensive and highly detailed analysis of the target. The functional defeat process includes finding and identifying a facility, characterizing its function and physical layout, determining its vulnerabilities to available defeat mechanisms, planning and executing an attack, assessing damage, and if necessary, suppressing reconstitution efforts and re-attacking the facility. Target Assessment Technologies develops for the Combatant Commands (COCOMs) and the Intelligence Community (IC), the analytical tools and processes required to find and characterize WMD targets and HDBTs and then, in near-real-time, assess the results of attacks against those targets. Overall objectives are to develop new methodologies, processes and technologies for detecting, locating, identifying, physically and functionally characterizing, modeling, and assessing new and existing hard and deeply buried targets to support physical or functional defeat. Applying these processes to WMD time-dependent target characterization and threat analysis presents a further technical challenge. The Target Assessment Technologies project is meeting this challenge through three subordinate and related activities: (1) Targeting and Intelligence Community Technologies Development; (2) Find, Characterize, Assess Technologies Development; and (3) Counter-WMD Analysis Cell (C-WAC) Technologies Development.

This program supports the National Strategy for Countering Biological Threat priority/focus areas 3) Capability Expansion and 4) Leveraging Science. The Counter WMD Analysis Cell (C-WAC) Technologies Development program has cooperative Research and Development projects with the United Kingdom and Commonwealth nations. The C-WAC project is also developing the Bio Dual-Use Analytical Tool as an aid in discriminating the employment of dual use technologies in the disguised development of bio warfare capabilities.

The increase from FY 2013 to FY 2014 is predominately due to the relative impact of Congressional reductions in FY 2013 impacting the Counter-WMD Analysis Cell (C-WAC). The increase from FY 2014 to FY2015 is due to increased investment in the development and integration of high-priority find, characterize and assess sensor technologies and supporting algorithms and software. This project has the only identified solution capable of meeting a time sensitive mission critical technology gap.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: RT: Target Assessment Technologies	26.865	28.141	53.850
Description: Project RT (Target Assessment Technologies) provides the COCOMs and the IC with technologies and processes to find and characterize WMD targets and HDBTs and then assess the results of attacks against those targets.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RT / *Target Assessment Technologies*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: - Demonstrated Integrated Sensor System (ISS) software suite in realistic field conditions in two mission profiles. - Validated C-WAC Nuclear Fuel Cycle model for support of COCOM and IC counter-WMD analysis. - Demonstrated an intermediate analytical tool for the characterization of dual-use technologies related to the possible development of biological weapons (BW) by potential adversaries. - Demonstrated Underground Targeting and Analysis System (UTAS) modeling capability for support of IC and COCOM WMD process analysis and characterization. - Continued target characterization technical training for the Underground Facility (UGF) and WMD target defeat communities. ***FY 2014 Plans:*** - Demonstrate Denied Area Persistent Sensor System (DAPSS) enhanced yield detection/discrimination capability. - Develop a chemical/biological virtual laboratory model for support of foreign weapons program analysis. - Collect data and then develop an evaporative cooling analytical validation and verification model for support of the UTAS thermal analysis capability. - Demonstrate an initial thermal process model interface for UTAS. - Provide target characterization training for the UGF and WMD target defeat communities. ***FY 2015 Plans:*** - Deliver Find Characterize and Assess (FCA) detection and characterization on-node data fusion algorithm improvements in support of near-real time target update capabilities. - Deliver FCA/UTAS tool suite interface improvement for near real time support of IC target characterization and assessment. - Develop Adversarial Route Analysis Tool (ARAT) with Global Expansion for support of counter-WMD intelligence analysis. - Develop Full Operational Capability for UTAS thermal process modeling capability in support of IC target analysis. - Develop FCA detection and characterization hardware and software to support near-real time target update capabilities.			
Accomplishments/Planned Programs Subtotals	26.865	28.141	53.850

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Government and industrial performers are assessed and selected based upon a “best fit for task” criteria. DoD Services Laboratories, DoE National Laboratories, and specialized university laboratories are common government awardees.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Defense Threat Reduction Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603160BR / *Counterproliferation Initiatives - Proliferation, Prevention and Defeat*	**Project (Number/Name)** RT / *Target Assessment Technologies*

E. Performance Metrics

By the end of FY 2014, increase WMD target characterization capability through successful incorporation of WMD systems and process characterization modeling and assessment capabilities into the UTAS functionality.
By the end of FY 2014, demonstrate improvements to UTAS by incorporating functionality to handle a broader range of WMD-related equipment.
By the end of FY 2014, demonstrate improved sensor-on-node data fusion capability.
By the end of FY 2014, improve DoD's ability to analyze adversary WMD development capability through C-WAC modeling and analysis.
By the end of FY 2015, deliver a thermal predictive process model interface.
for underground facility forced and evaporative air cooled systems.
By the end of FY 2015, demonstrate improved compact, low power integrated.
sensor-on-node seismic & acoustic system with an operating prototype
By the end of FY 2015, deliver a virtual laboratory chemical, biological,
and radiological models to analyze adversary WMD capabilities.