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**Exhibit R-1, RDT&E Programs**  
**Defense Threat Reduction Agency**  
**Fiscal Year (FY) 2019 Budget Estimates**

**Appropriation: RDT&E, Defense-Wide**

**Date: February 2018**

**OVERVIEW**

The Defense Threat Reduction Agency (DTRA) supports the nation's only Research, Development, Test & Evaluation (RDT&E) program focused specifically on combating and countering the threats posed by weapons of mass destruction (WMD), improvised explosive devices (IEDs), and asymmetric techniques, tactics, and procedures. These threats present immediate, persistent, and evolving risks for our nation's security. Mitigating these risks is a primary DoD priority, and the mission of DTRA. The Agency accomplishes this mission by safeguarding the United States and its allies from WMD, IEDs, and other improvised threats, by integrating, synchronizing, and providing responsive expertise, technologies, and capabilities.

The RDT&E budget funds research and capability development activities supporting efforts across the spectrum of chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) mission space. These efforts meet critical requirements in addressing strategic, operational, and technical challenges associated with WMD surveillance, detection, defeat, prevention, nonproliferation, counterproliferation, consequence management, and monitoring and verification.

The RDT&E portfolio addresses threat-specific technology development as well as number of enabling capabilities. These enabling capabilities include a Basic Research initiative that balances the imperatives of unconstrained exploration, discovery, and experimentation with near- and mid-term priorities arising because of continuously evolving threat environments. This portfolio seeks to facilitate innovative solutions and revolutionary technologies that transition to cost effective threat reduction and defeat capabilities. These enablers also include cutting-edge information science, advanced analytic, and modeling and simulation capabilities, while providing operational, near real-time decision support and technical integration. The RDT&E portfolio also supports end-to-end test event planning, management, safe execution, and results analysis supporting DoD, federal agencies, and friendly nations' programs to counter WMD proliferation and IEDs.

The nuclear technology development portfolio focuses on researching, developing, and demonstrating technologies that support a safe, secure, and effective U.S. nuclear deterrent and prevent nuclear or radiological attacks against the U.S. or its allies. This portfolio addresses nuclear weapons effects for targeting, consequences of execution, and survivability through the development of specific technical capabilities, to include improved modeling and information sharing tools. It also develops survivability standards and technology, and conducts relevant testing activities. Detection and post-detonation nuclear forensics remain significant challenges to security, driving investments in detecting, characterizing and monitoring nuclear and radiological threats and attributing nuclear explosions.

A portfolio focused on countering WMD and improvised threat technologies seeks to develop, demonstrate, and transition innovative technologies and capabilities to actively counter the full spectrum of CBRNE threats. These efforts range from applied research through integration and demonstration of capabilities for specific combat support needs. Specific areas of emphasis include weapons effects and planning, target sensing and characterization technologies, and agent defeat. This portfolio develops the innovative technologies to support WMD sensing and intelligence, surveillance and reconnaissance (ISR) capabilities. This portfolio also integrates many capabilities to address the challenges of characterization and defeat of hardened, deeply-buried targets.

DTRA continually assesses the total RDT&E program with respect to strategic direction, new and emerging requirements, and the current and future threat environment and optimizes it to address requirements while mitigating appropriate risk. This submission focuses on addressing increasing demands for combatant command-specific support to the warfighter; increasing investment in maintaining our organic test infrastructure; continued efforts to leverage collaborative partnerships, particularly with respect to innovative capabilities; and the continued need to balance technical advancement, existing and emerging requirements, and the resources available to meet these challenges. This submission incorporates the request for research and development resources for the Joint Improvised-Threat Defeat Organization previously requested through the Joint Improvised-Threat Defeat Fund appropriation.

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