

# DHS Science and Technology Directorate

## HSARPA Cyber Security Division:

### *Securing Your Cyber Future*

#### **Leading Development of Next-Gen Cybersecurity**

Cyber-threats are constantly changing. As a result, the federal government must lead the way in the development of next-generation cybersecurity solutions.

The Homeland Security Advanced Research Projects Agency's (HSARPA) Cyber Security Division (CSD) enables and supports research and development (R&D), testing, evaluation and transition of advanced cybersecurity and information assurance technologies. CSD's mission is to enhance the security and resilience of the nation's critical information infrastructure and the internet by developing and delivering new technologies, tools and techniques to enable DHS and the U.S. to defend, mitigate and secure current and future systems, networks and infrastructure against cyberattacks; conduct and support technology transition; and lead and coordinate the development of cutting-edge solutions by innovators in the public and private R&D community.

#### **CSD's R&D Portfolio**

CSD's work is focused on various programmatic areas, many of which comprise multiple projects targeting specific aspects of the broader program, such as:

**Cyber for Critical Infrastructure**—Securing the country's electrical grid, oil and gas refineries, and pipelines; and enhancing the security and resilience of critical infrastructure systems.

**Cyber Physical Systems**—Ensuring cyber physical systems and Internet of Things (IoT) security are addressed before widely deploying new connected devices.

**Cybersecurity Outreach**—Fostering training and education programs critical to the needs of the cybersecurity workforce of the future.

**Cybersecurity Research Infrastructure**—Coordinating and developing real-world data and information-sharing capabilities, tools, models and methodologies through the Information Marketplace for Policy and Analysis of Cyber-Risk and Trust (IMPACT) program and supporting the Defense Technology Experimental Research (DETER) testbed.

**Human Aspects of Cybersecurity**—Developing approaches to detect and mitigate insider threats and supporting research into the business, legal, technical and behavioral aspects of the economics of cyber threats, vulnerabilities and controls.

**Identity Management and Data Privacy**—Providing the identity and privacy R&D expertise, architectures and technologies needed to enhance the security and trustworthiness of systems.

**Cybersecurity for Law Enforcement**—Developing new cyber forensic analysis tools and investigative techniques to help law enforcement officers and forensic examiners address cyber-related crimes.

**Mobile Security**—Developing innovative secure mobility for government and industry mission use and ensuring security for devices, apps and network infrastructure.

**Network Systems Security**—Developing technologies to mitigate distributed denial of service attacks and security implications of cloud computing, and researching attack modeling so critical infrastructure owners and operators can predict the effects of cyberattacks on systems.

**Next Generation Cyber Infrastructure Apex**—Addressing the cybersecurity issues of the financial services sector.

**Software Assurance**—Developing tools, techniques and environments to analyze software and address programming flaws and vulnerabilities.

**Transition to Practice**—Transitioning federally funded cybersecurity technologies into broader use and creating an efficient transition process that has a lasting impact on the R&D community and the nation's critical infrastructure.

#### **Preparing for Emerging Cyber Threats**

As new cyber threats emerge, CSD will be at the forefront of the R&D community to protect data privacy, maintain economic and national security, and empower citizens to control their digital security.



**Homeland  
Security**

Science and Technology

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