

DHS SCIENCE AND TECHNOLOGY

S&T Overview



**Homeland
Security**

Science and Technology

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International Partnerships

Science and Technology Directorate

S&T MISSION

Enable effective, efficient and secure operations across all homeland security missions by applying scientific, engineering, analytic and innovative approaches to deliver timely solutions and support departmental acquisitions.

DHS FIVE MISSION AREAS



S&T in Brief

- **~ 1,200 personnel**
 - Federal, Contractor, IPAs, highly technical staff
- **Laboratories**
 - 5 internal Labs, 2 Federally Funded R&D Centers, access to DOE Labs
- **Centers of Excellence**
 - Network of university-based COEs
 - Multidisciplinary research and education in homeland security-related fields
- **Collaborates across sectors to develop, leverage, transition capabilities**
 - Components, State/Local, Interagency, International, Private Sector, Academia
- **Supports DHS, Components and HSE requirements**
 - Key technical and analytical capacity in major threat areas
 - Innovative approaches to problem solving and affordable, viable solutions
- **Establish enduring capability in homeland security science and technology**
 - Prepare future generations to meet homeland security challenges



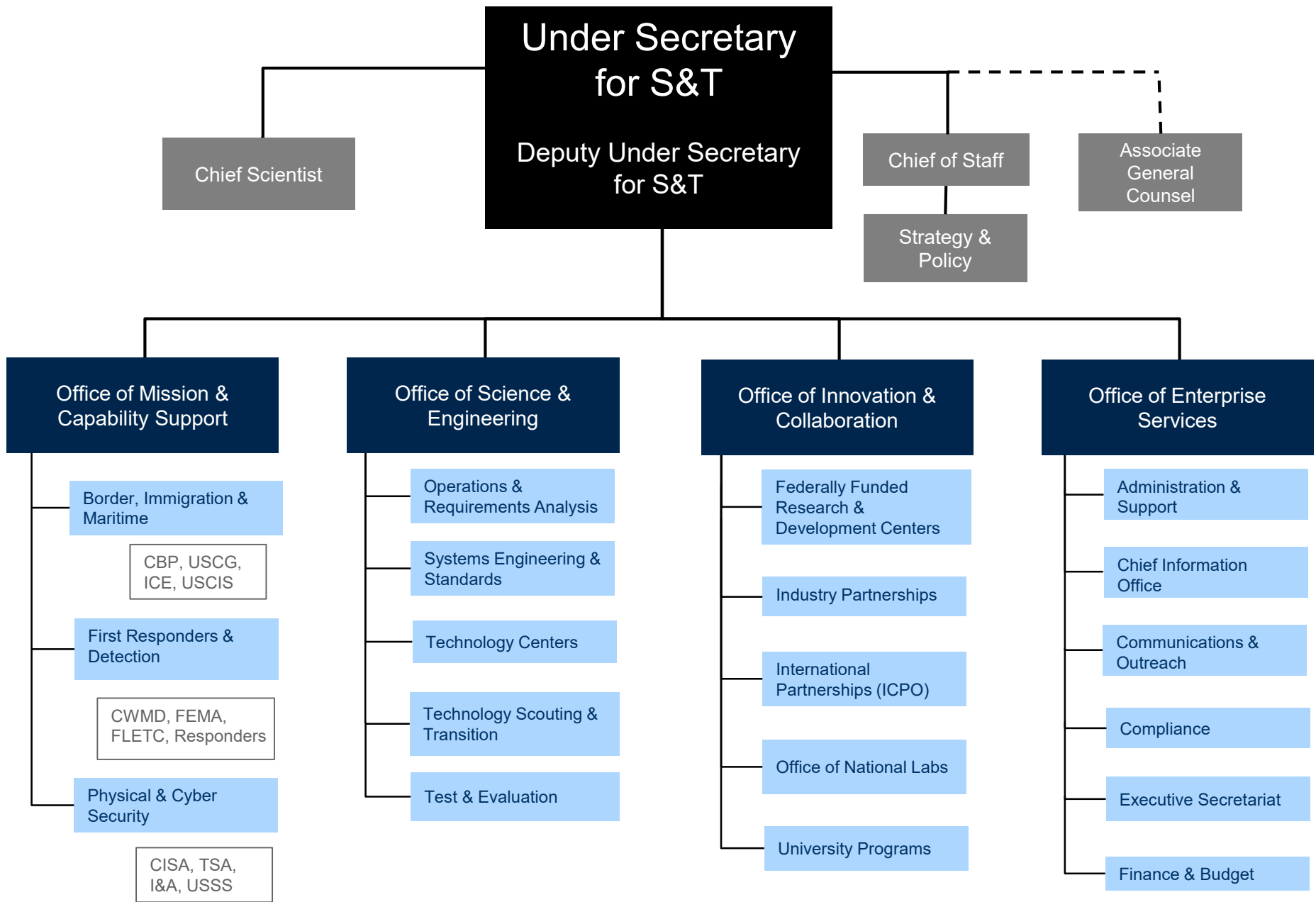
Homeland
Security

Science and Technology

CHAMPS

TRANSPARENCY • ACCOUNTABILITY • FLEXIBILITY • VISIBILITY

- C**omponent/Customer Driven
- H**omeland Security Enterprise Focused
- A**gile and Responsive
- M**ake Use of Existing Technologies
- P**lan for Transfer/Commercialization
- S**cientific and Engineering Excellence

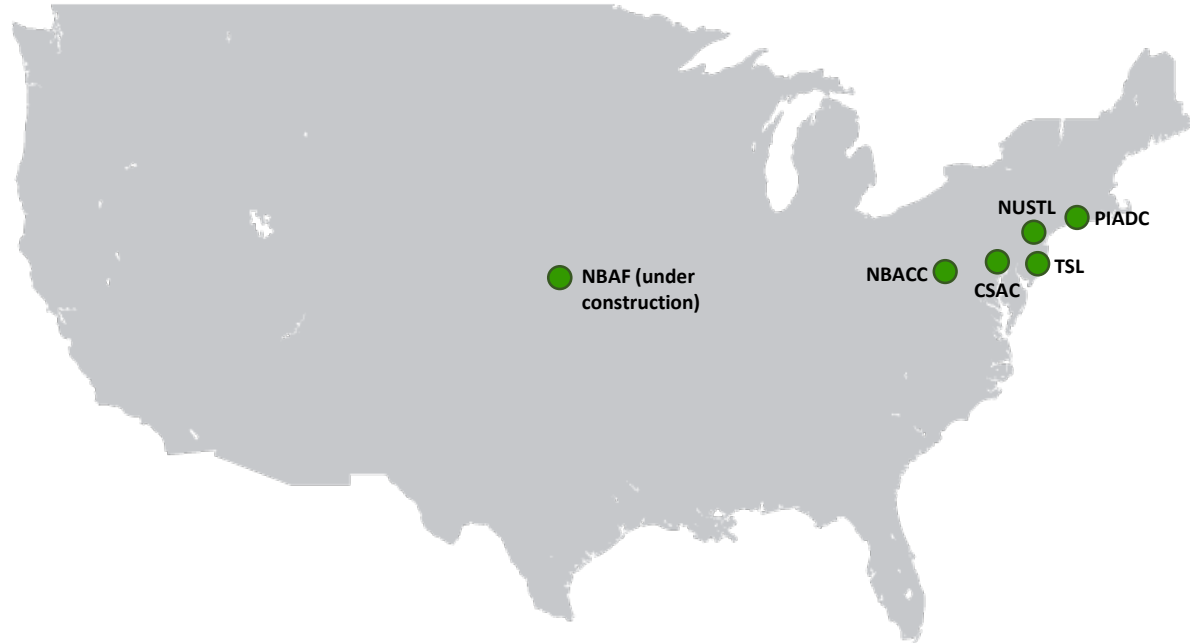


DHS S&T NATIONAL LABORATORIES



Our laboratories provide specialized technical expertise and world-class research facilities to DHS and other partners.

CSAC	Chemical Security Analysis Center
NUSTL	National Urban Security Technology Laboratory
NBACC	National Biodefense Analysis and Countermeasures Center
NBAF	National Bio and Agro-Defense Facility
PIADC	Plum Island Animal Disease Center
TSL	Transportation Security Laboratory



DHS SCIENCE AND TECHNOLOGY CENTERS OF EXCELLENCE (COE) ■

Our COE network is an extended consortium of hundreds of universities conducting groundbreaking research to address homeland security challenges.

ADAC	Arctic Domain Awareness Center
ALERT	Center for Awareness and Localization of Explosives-Related Threats
BTI	Center for Borders, Trade and Immigration Research
CIRI	Critical Infrastructure Resilience Institute
CRC	Coastal Resilience Center of Excellence
MSC	Maritime Security Center
CBTS	Cross-Border Threat Screening and Supply chain Defense
CAOE	Center for Accelerating Operational Efficiency
CINA	Criminal Investigations and Network Analysis Center



DEPARTMENT OF ENERGY (DOE) NATIONAL LABORATORIES



The DOE National Laboratories contribute a rich arsenal of facilities, experts and capabilities that actively support the homeland security community.

ANL	Argonne National Laboratory
BNL	Brookhaven National Laboratory
INL	Idaho National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LLNL	Lawrence Livermore National Laboratory
LANL	Los Alamos National Laboratory
NREL	National Renewable Energy Laboratory
ORNL	Oak Ridge National Laboratory
PNNL	Pacific Northwest National Laboratory
SNL	Sandia National Laboratories
SRNL	Savannah River National Laboratory



DHS S&T FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS (FFRDCs)

The FFRDCs meet special long-term research or development needs that cannot be met as effectively by existing in-house or contractor resources.

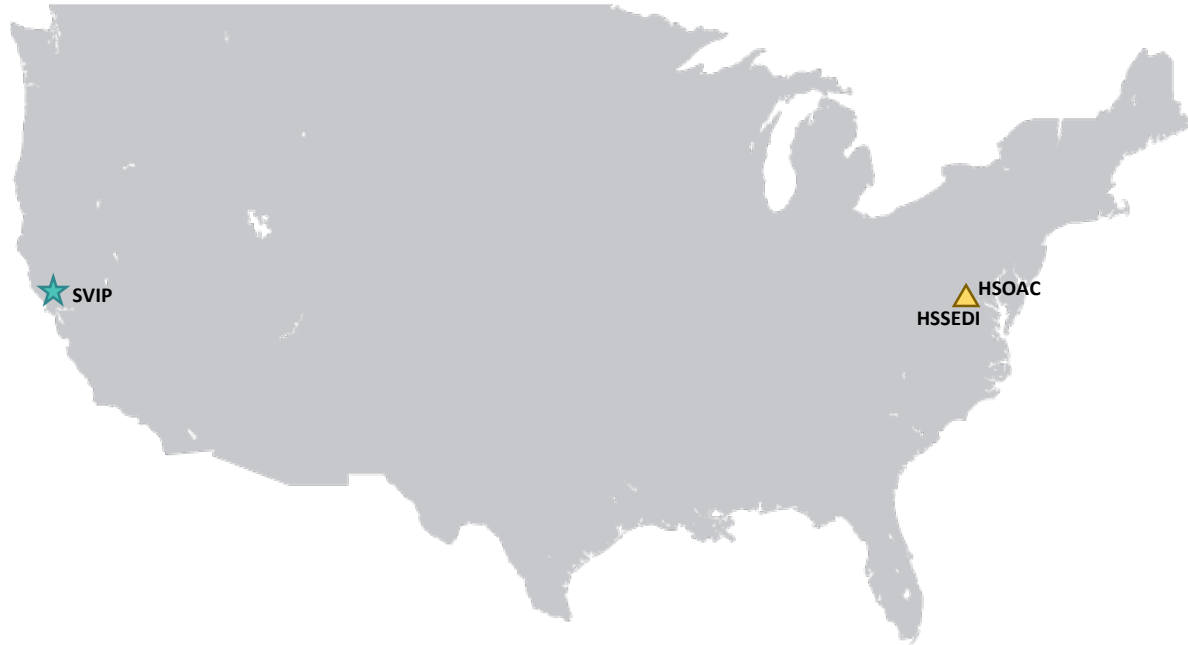
Homeland Security Systems Engineering and Development Institute (HSSEDI)

Homeland Security Operational Analysis Center (HSOAC)

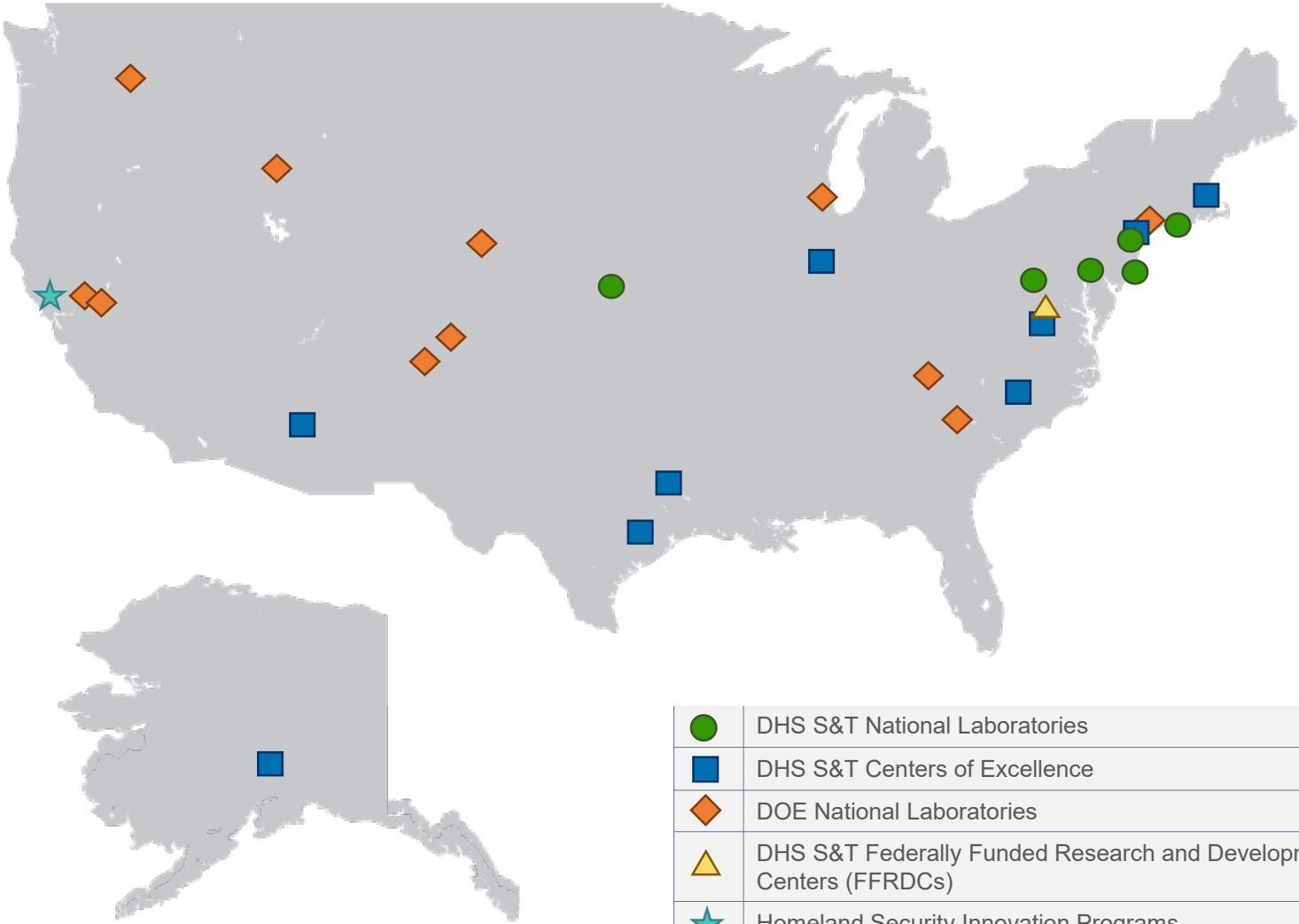
HOMELAND SECURITY INNOVATION PROGRAMS

Created by DHS to establish a presence on the West Coast to cultivate relationships with technology innovators.

Silicon Valley Innovation Program (SVIP)



S&T NETWORK – U.S.



●	DHS S&T National Laboratories
■	DHS S&T Centers of Excellence
◇	DOE National Laboratories
▲	DHS S&T Federally Funded Research and Development Centers (FFRDCs)
★	Homeland Security Innovation Programs

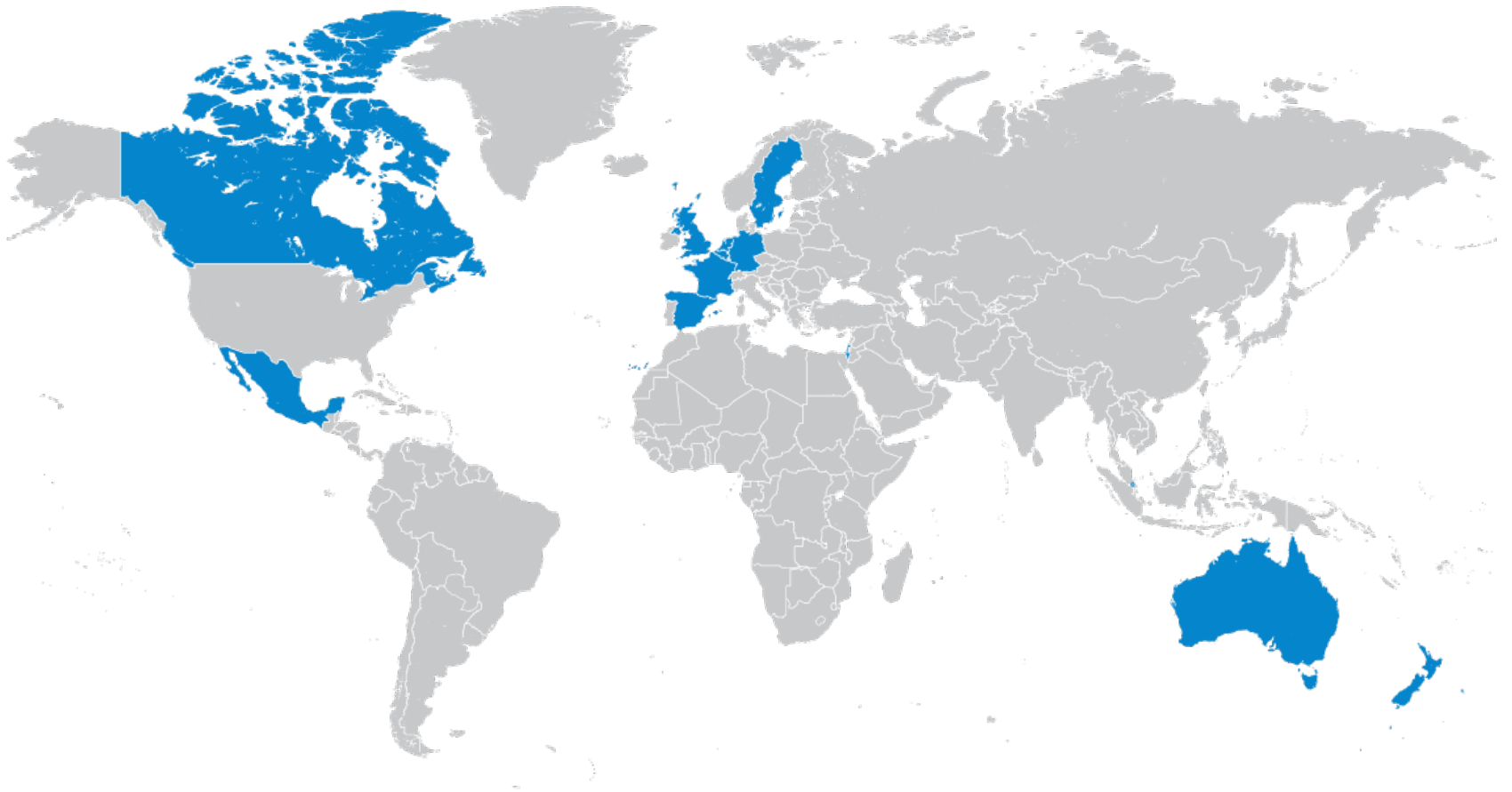
INTERNATIONAL PARTNERSHIPS

S&T develops partnerships with foreign governments and international organizations to enhance scientific and technical knowledge for the global Homeland Security Enterprise.

Australia
Canada
France
Germany
Israel

Mexico
Netherlands
New Zealand
Singapore
Spain

Sweden
United Kingdom
European Commission



Statutory Authority

Promoting Antiterrorism Through International Cooperation Act Public Law 110-53

S&T statute is modeled after DOD R&D international authorities, providing ICPO the authority to:

- ❖ Coordinate with the Office of International Affairs and other Federal Agencies to determine strategic international engagement priorities for DHS
- ❖ Develop legal mechanisms, in coordination with DoS, DoE, DoD, and other federal agencies to support international cooperative activities.
- ❖ Facilitate the development and implementation of international activities to allow for the exchange of staff, funding, and equipment; including outlining provisions for sharing intellectual property, export controls, and classified information
- ❖ Identify new partnership and industry engagement opportunities to further the HSE mission.



H. R. 1—240

TITLE XIX—INTERNATIONAL COOPERATION ON ANTITERRORISM TECHNOLOGIES

SEC. 1901. PROMOTING ANTITERRORISM CAPABILITIES THROUGH INTERNATIONAL COOPERATION.

(a) FINDINGS.—Congress finds the following:

(1) The development and implementation of technology is critical to combating terrorism and other high consequence events and implementing a comprehensive homeland security strategy.

(2) The United States and its allies in the global war on terrorism share a common interest in facilitating research, development, testing, and evaluation of equipment, capabilities, technologies, and services that will aid in detecting, preventing, responding to, recovering from, and mitigating against acts of terrorism.

(3) Certain United States allies in the global war on terrorism, including Israel, the United Kingdom, Canada, Australia, and Singapore have extensive experience with, and technological expertise in, homeland security.

(4) The United States and certain of its allies in the global war on terrorism have a history of successful collaboration in developing mutually beneficial equipment, capabilities, technologies, and services in the areas of defense, agriculture, and telecommunications.

(5) The United States and its allies in the global war on terrorism will mutually benefit from the sharing of technological expertise to combat domestic and international terrorism.

(6) The establishment of an office to facilitate and support cooperative endeavors between and among government agencies, for-profit business entities, academic institutions, and non-profit entities of the United States and its allies will safeguard lives and property worldwide against acts of terrorism and other high consequence events.

(b) PROMOTING ANTITERRORISM THROUGH INTERNATIONAL COOPERATION ACT.—

(1) IN GENERAL.—Title III of the Homeland Security Act of 2002 (6 U.S.C. 181 et seq.) is amended by adding after section 316, as added by section 1101 of this Act, the following:

“SEC. 317. PROMOTING ANTITERRORISM THROUGH INTERNATIONAL COOPERATION PROGRAM.

“(a) DEFINITIONS.—In this section:

“(1) DIRECTOR.—The term ‘Director’ means the Director selected under subsection (b)(2).

“(2) INTERNATIONAL COOPERATIVE ACTIVITY.—The term ‘international cooperative activity’ includes—

“(A) coordinated research projects, joint research projects, or joint ventures;

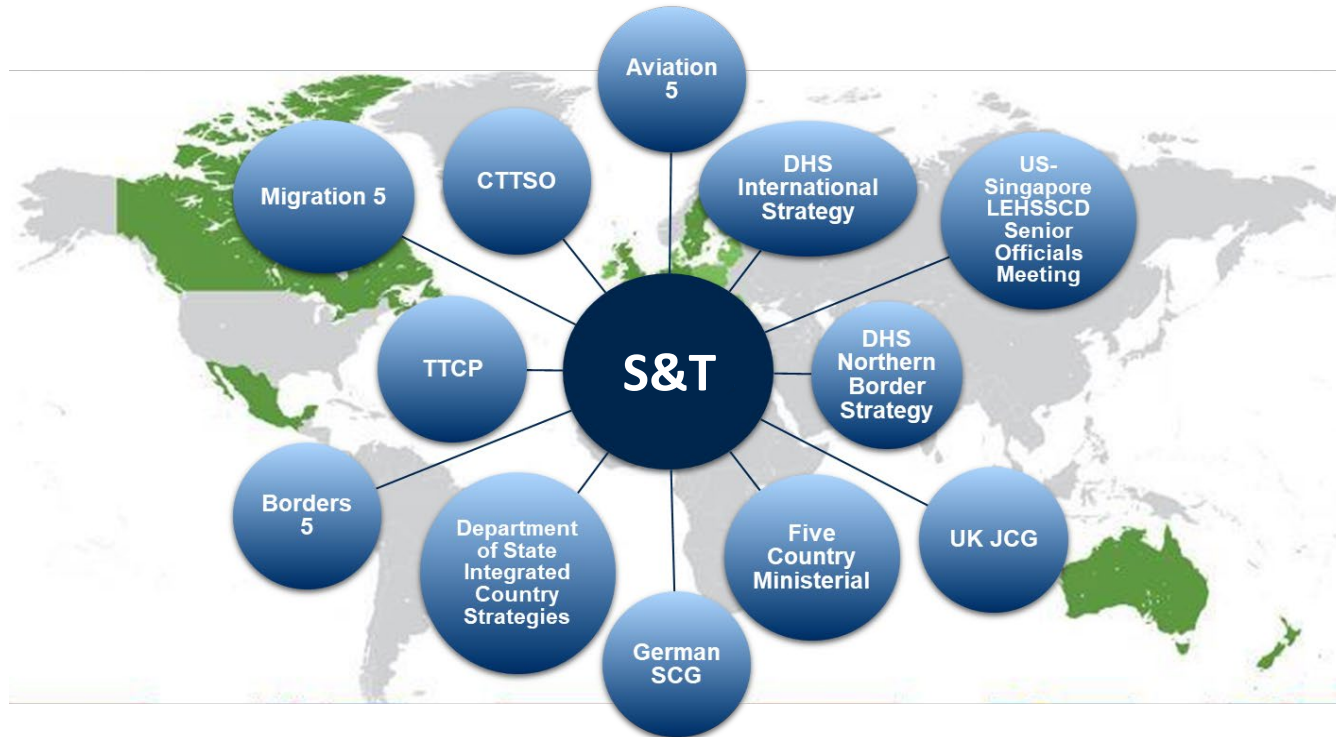
“(B) joint studies or technical demonstrations;

“(C) coordinated field exercises, scientific seminars, conferences, symposia, and workshops;

“(D) training of scientists and engineers;

International Partnerships

Outcomes and Impact



Common Objectives

EXPEDITE RESULTS TO OPERATIONS AND POLICY

- Accelerate RDT&E coordination and utilization of results/best practices
- Fast-track governments' response to emerging global threats
- Harness industry solutions

ENHANCE CAPACITY FOR TECHNOLOGY FORESIGHTING

- Leverage technology, research, and expertise to address long term technology needs
- Empower RDT&E decision makers

CATALYZE NEW TECHNICAL NETWORKS

- Measure (1) Cost Avoidance, (2) Accelerated Schedules, (3) Innovative Solutions, (4) Peer Validation
- Support frequent, transparent interactions to enhance working relationships among all partners

Doing Business with S&T

S&T seeks to engage innovators and a wide variety of performers to develop science and technology solutions that address real-world threats and hazards.

- **Silicon Valley Innovation Program** – engages technology innovators and investors to solve pressing homeland security challenges
- **S&T's Long Range Broad Agency Announcements** - open invitation to scientific and technical communities to fund pioneering R&D projects
- **S&T's Small Business Innovation Research Program** - awards funds to small businesses to quickly commercialize and deliver operational prototypes
- **Prize Competitions** - incentivizes non-traditional performers to propose innovative solutions
- **SAFETY Act** – offers important legal liability protections for providers of Qualified Anti-Terrorism Technologies
- **Transition to Practice Program** – helps federal laboratories and research centers transition promising solutions for commercialization

Engage With Us!



WEBSITE

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PERISCOPE

www.periscope.tv/dhsscitech/



YOUTUBE

youtube.com/dhsscitech

S&T Collaborations - Examples

- **Team Awareness Kit (TAK)**, a mobile, tactical, situational awareness tool works off a cell phone to support boots on the ground during government border security operations, disaster response and criminal investigations. During Hurricane Florence: tracked response assets, identified hazards and people in need of rescue, established keep-out zones, facilitated sharing maps and video feeds for search and rescue operations. (FEMA, CBP, DOJ, DoD)
- **ADCIRC**, an online modeling and simulation tool, predicts coastal storm surge and flooding and uses wind models to inform where best to position resources, rescue craft and personnel as hurricanes approach. Informs flood risk mapping for pre-storm planning, post-storm damage assessments and coastal infrastructure design. (FEMA, USCG, National Hurricane Center, NOAA)
- **Rapid DNA** performs rapid, low-cost, DNA-based family relationship verification to improve immigration efficiency for legal kinship applicants, reduce fraud, identify mass casualty victims, reunite families, and conduct DNA watch list checks. Confirms kinship with 99.5% success rate within 90 minutes. Available for purchase. (CBP, FEMA, DOJ)