DHS Science and Technology Directorate

S&T Apex—An Overview of What an Apex is and How it Works

What are Apex Programs?

Apex Programs represent a change in the way the Science and Technology Directorate (S&T) manages research and development (R&D) programs and projects.

A collection of S&T projects, Apex Programs represent one or more paths toward achieving an increased or improved capability for the Homeland Security Enterprise (HSE). Resulting from a visionary goals, an S&T strategic priority, or an external stakeholder's operational need, Apex Programs take the next steps towards implementing solutions to improve the security and resilience of our nation.

The following Apex programs look strategically at the nation's security and address future challenges while continuing to support today's operational needs.

Air Entry/Exit Re-Engineering (AEER)

The AEER program was developed in partnership with U.S. Customs and Border Protection, to efficiently screen travelers entering the United States and to confirm the departure of non-U.S. citizens. AEER determines how to use new technologies and processes to expedite screening by evaluating current commercial biometric technologies to support air entry and emerging exit applications.

Border Situational Awareness (BSA)

The BSA program will enable the HSE to achieve increased border situational awareness. The goal of the Apex BSA program is to improve border situational awareness by establishing an enterprise capability to 1) access more data sources, 2) make available decision support tools, and 3) share that actionable information and intelligence with partner law enforcement agencies.

Real-Time Biothreat Awareness

The Real-time Biothreat Awareness program aims to provide timely information to multiple authorities, enabling a collaborative and effective response that ultimately minimizes the impacts of a biological incident. Through this program, S&T will help authorities better prepare for incidents in which biological material is released.

Relational, Adaptive Processing of Information and Display (RAPID)

The RAPID program will save lives, reduce property losses, and enhance community resilience to disruptive events such as floods. With support from S&T, the Federal Emergency Management Agency will be able to 1) leverage existing data sources, 2) enhance collaboration and coordination, 3) identify indicators of community resilience, 4) empower communities with a decision support tool, and 5) enable faster speed-to-decision in the operational theater.

Next Generation Cyber Infrastructure

The Next Generation Cyber Infrastructure program will addresses the challenges facing our nation's critical infrastructure sectors, enabling infrastructure to operate effectively, even in the face of sophisticated, targeted cyberattacks. The program seeks to provide technologies and tools to protect critical systems and networks.

Aviation Checkpoint Screening at Speed (ACSAS)

The Aviation Checkpoint Screening at Speed program seeks to create an almost-invisible checkpoint by integrating imaging, trace detection, X-ray technologies, and software systems. S&T is working with the Transportation Security Administration, Department of Energy national laboratories, universities, and industry on this program. The goal is to reduce invasiveness and inconvenience to passengers while increasing capability to respond to evolving threats.

Next Generation First Responder (NGFR)

The NGFR program seeks to develop a scalable and modular ensemble that includes an enhanced duty uniform, personal protective equipment, wearable computing and sensing technology, and robust voice and data communication networks. NGFR will harness the best existing and emerging technologies and integrate them in a well-defined and standards-based open architecture.