DHS Science and Technology Directorate
Apex Technology Engines — *"Powering Open Innovation"*

Apex Technology Engine Overview

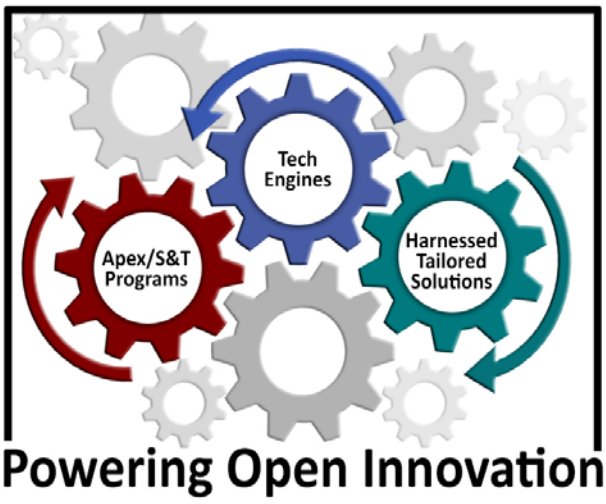
Apex Technology Engine Teams (Engines) represent a new approach to realizing the Science and Technology Directorate (S&T) Visionary Goals by powering open innovation. The Engines harness subject matter expertise and capabilities across the Department of Homeland Security (DHS), leveraging technological, scientific, industrial, and academic communities to provide continuous support to the dynamic needs of the DHS component agencies.

The Engines identify and share subject matter expertise, technical solutions and tools, best practices, lessons learned, and reusable products and solutions on behalf of Apex and other S&T projects. Teaming and collaboration to leverage knowledge from the DHS enterprise and external stakeholders are core components of the Engine approach.

Technology Engine Goals

Services, solutions, access to subject matter experts, and knowledge will be applied and repurposed across multiple projects, realizing cost savings compared with previous S&T approaches. Over time, the Engines' collective experience and awareness of emerging technology trends will result in a robust knowledge base and network to continually serve the dynamic needs of S&T and the DHS enterprise. The objectives of the Engines are to:

- Increase return on investment by benefiting multiple Apex projects
- Reduce redundancy of multiple Apex-only solutions
- Accelerate impact of Apex and other S&T projects
- Increase agility by adjusting to changing Apex needs.



Apex Technology Engine Offerings

The dynamic nature of challenges facing DHS and S&T, combined with the fast pace of technology, requires that specific Engines be established, matured, and retired based on Apex and other S&T program needs. Initial Engines are:

Behavioral, Economic, and Social Science Engine (BESS-E)
Provides analysis of the social and behavioral implications of new technologies, programs, and policies to support their research, implementation, and diffusion. An example capability is providing an organizational assessment to determine how a new technology should be presented and transitioned to a client.

Communication and Networking (CN-E)
Provides integrated communications and networking solutions that ensure operability and interoperability across all network platforms to ensure the efficient and effective exchange of voice, video, and data information. An example capability is informing solutions that provision wireless broadband services in remote locations lacking public safety wireless coverage.

Data Analytics Engine (DA-E)
Provides expertise and tools for projects to leverage emerging storage, security, computation, and analytics technologies to create information and rapidly convert data to decisions for homeland security systems, missions, and operations. An example capability is transforming data/language into trending and forecasting information.

Identity Access and Management (IDAM-E)
Provides the capability to deliver individuals and systems a digital identity, credentials, authentication, and authorization to allow the right people to securely access the right data at the right time. An example capability is limiting access of data and tools to approved users with "need to know."

Manufacturing Engine (M-E)
Provides expertise to inform efficient transition from project conception to full-scale manufacturing. (Note: M-E capabilities are currently being defined.)

Modeling and Simulation Engine (MS-E)
Provides expertise and a repository for mission-based models as well as modeling and simulation tools. An example capability is providing situational awareness of modeling and simulation trends and advances supported by industry, academia, and government collaboration.

Situational Awareness and Decision Support (SANDS-E)
Provides Apex and other S&T projects with assured, secure access to databases, knowledge bases, modeling and simulation tools, and shared situational awareness products. An example capability is providing visualizations that can ingest essential information for 2-D and/or 3-D display.

Homeland Security
Science and Technology

To learn more about Apex Technology Engines, contact technologyengines@hq.dhs.gov

2015-06-18