DHS Science and Technology Directorate
Virtual USA®

First responders need quick access to information from multiple partners

In an emergency, first responders must be able to quickly and easily access relevant, reliable, and up-to-date information from multiple partners, including state and local agencies. Many of these partners use multiple systems and technologies that, due to proprietary architectures and data formats, do not allow for the exchange of essential information during a crisis.

Solutions built on guiding principles

Recognizing these challenges, the U.S. Department of Homeland Security Science and Technology Directorate (S&T) works with local, state, and federal organizations responsible for hometown security to address these barriers. The result is Virtual USA® (vUSA), an S&T program that demonstrates best practices for incident management information sharing (IMIS) across the first responder community. Four guiding principles served as a foundation for the creation of vUSA: improving sharing and collaboration at all government levels, building on existing investments, maintaining data rights and ownership, and partnering to ensure resilience.

Adhering to these principles, vUSA is focused on standardizing operational and technical processes, cultivating industry standards, sharing lessons-learned and best practices, and supporting research and development to implement various tools for information sharing and voice and data interoperability.

A history of success

To demonstrate the vUSA program's core principles, S&T developed an initial operational capability called the Virtual Library. A web-based sharing platform, the Virtual Library is a catalog of data feeds managed by data owners and can be displayed on an organization's own map. The Virtual Library enables first responders to access and share critical data layers including power outages, road closures, traffic incidents, hospital and shelter statuses, and other data in a geospatial context.

S&T conducted regional pilots of the Virtual Library across the country, from 2005 to 2012. These pilots were used to develop and validate capabilities and expose a new generation of needs and requirements for S&T, practitioners, and partners to consider. S&T has created additional tools that complement the Virtual Library and support new vUSA activities to further address critical governance and operational issues.

These activities include the S&T Capacity Building Webinar Series, routine engagement of the First Responder Resources Group, and support of large-scale exercises for regional planning organizations such as the Central U.S. Earthquake Consortium (CUSEC).

Figure 1: Using the Mission Ready Package (MRP) GeoSearch Tool, Emergency Managers in the CUSEC region quickly query areas on a map to find MRP packages to make seamless, actionable decisions.

In 2013, vUSA demonstrated its unique value during the Canada-U.S. Enhanced Resiliency Experiment II, which tested interoperable data sharing at the international level, connecting U.S.-based local, state and federal assets with partner agencies in Canada.

Next Steps for vUSA

S&T is working with several partners to continue vUSA's evolution. On a national scale, the National Information Sharing Consortium (NISC) is expanding upon vUSA tools that support operational workflows and maximize access to relevant stakeholder data. While S&T will phase out the initial Virtual Library platform, the NISC will convey its capabilities through a multi-tool environment that will include Esri's ArcGIS Online, a mapping platform used to create interactive web maps and apps. Regionally, S&T has transitioned the Virtual Library as an operational capability used by the state and local jurisdictions that comprise the National Capital Region.

Finally, the vUSA program plays a critical role to ensure first responder engagement shapes the national strategy for information sharing. S&T serves as a key partner with the White House Information Sharing and Access Interagency Policy Committee (ISA IPC) and the Program Manager Information Sharing Environment (PM-ISE), which is responsible for advancing information sharing across the nation. The ISA IPC and the PM-ISE created the IMIS Subcommittee, co-chaired by S&T and the NISC, to fulfill this important mission.