Homeland Security

Science and Technology

DHS Interoperability Initiatives

Background

Emergency responders—police officers, firefighters, and emergency medical service personnel—need to exchange voice and data communications across disciplines and jurisdictions to successfully respond to day-to-day incidents and large-scale emergencies. Many people assume that emergency response agencies across the Nation are already interoperable. In actuality, emergency responders often cannot talk to some parts of their own agencies—let alone communicate to agencies in neighboring cities, counties, or states. Interoperability is a complex, multidimensional challenge involving cultural, technological, and financial factors. The U.S. Department of Homeland Security is addressing capability gaps through the Science and Technology Directorate's Office for Interoperability and Compatibility (OIC) and the Directorate for National Protection and Programs' Office of Emergency Communications (OEC). Through these programs, DHS is leading initiatives and providing tools that help local, tribal, state, and Federal emergency response agencies to accelerate interoperable communications progress.

Technology Demonstration Projects

- Through its Multi-Band Radio (MBR) project, OIC demonstrates a portable radio that allows emergency responders across all levels of government to communicate with partner agencies regardless of radio band. Equal in cost, size, and weight of existing portable radios, MBR provides emergency responders with cutting-edge communications capabilities.

- To connect radio systems, emergency responders rely on bridging devices. Computer networks are increasingly being used to transmit voice communications among radio systems. This is done using a technology known as Voice over Internet Protocol (VoIP). OIC is working with emergency responders and the National Institute of Standards and Technology (NIST) to define a common connection for bridging devices that use VoIP. This allows one vendor's bridge to pass a voice call to another vendor's bridge.

- Through the vocoder testing project, OIC is working with the International Association of Fire Chiefs and NIST to understand how background noise affects voice audio, and to determine what technology improvements are needed to overcome background noise issues.

- Emergency responders use two-way radios to communicate in their daily operations. Through the Radio Over Wireless Broadband project, OIC is working with industry and local governments to figure out how to connect these existing radio systems with emerging technologies, such as laptops and smart phones.

Interoperability Tools

- DHS is committed to developing tools—frameworks, methodologies, templates, and guidance documents—that successfully meet the needs of end users. Tools are based on lessons learned and best practices from the field. Jurisdictions across the Nation are using DHS interoperability tools to track progress, establish governance agreements, apply for grant funding, advance regional technology, map assets, and develop statewide interoperability plans. The complete set of interoperability tools is available on the SAFECOM Web site (www.safecomprogram.gov).

Interoperability Planning & Technical Assistance

- In April 2008, DHS approved Statewide Communication Interoperability Plans (SCIPs) for all 56 states and territories. The SCIPs are locally-driven, multi-jurisdictional, and multi-disciplinary plans to enhance interoperability of emergency communications. To assist states and territories as they navigate the statewide planning process and to ensure they include essential components in their plans, OEC developed criteria for SCIPs. Through its Interoperable Communications Technical Assistance Program, OEC provided states with hands-on assistance in developing and implementing these plans.

- To improve cross border interoperability, OEC is leading several initiatives in coordination with the U.S. Department of State, the National Telecommunications and Information Administration, the Federal Communications Commission, and local, tribal, state, and Federal partners.

- more -

DHS Interoperability Initiatives Continued

Standards Acceleration & Requirements Alignment

- OIC, OEC and NIST are working closely with practitioners, industry, and other government agencies to advance the Project 25 (P25) suite of standards. These standards allow radios and other system components to work together regardless of manufacturer. The first group of P25 standards—the Common Air Interface and the Inter-RF Subsystem Interface (ISSI)—are crucial for interoperability among P25 systems. A P25 Compliance Assessment Program ensures that voice communications products advertised by manufacturers as compliant with P25 standards actually are compliant.

- OIC is working with Federal partners, standards organizations, and the emergency management community to accelerate the development of data messaging standards. These standards enable emergency responders to seamlessly exchange data—such as alerts, maps, video, situational reports—across different systems.

- To ensure that technology innovations align with the needs of emergency responders, DHS developed the first-ever Public Safety Statement of Requirements (SoR). Created with practitioner input, the SoR defines the operational and functional requirements for crucial voice and data communications in day-to-day, task force, and mutual aid operations.

National Interoperability Assessments

- In 2006, DHS published results of the first-ever National Interoperability Baseline Survey, which assessed interoperability capabilities among emergency response agencies nationwide. By providing a clear representation of national capacities and vulnerabilities, the survey findings helped emergency response leaders and elected officials make informed decisions about strategies for improving interoperability and target resources to the areas of greatest need.

- OEC is building upon the National Interoperability Baseline Survey in developing a National Communications Capabilities Report (NCCR). To be released in 2008, this Report will provide an understanding of public safety communications capabilities needed and in use, as well as a framework for evaluating emergency communications capabilities across all levels of government.

- OEC's National Emergency Communications Plan (NECP), released in 2008, establishes a national strategy to address emergency communications gaps and capabilities. The NECP draws upon practitioner input and data gleaned from the NCCR, SCIPs, after action reports, and other national assessments to establish goals, objectives, and initiatives that will advance communications operability, interoperability, and continuity of emergency communications nationwide.

Federal Partnerships

- The Federal Partnership for Interoperable Communications user group represents the Federal emergency communications wireless network community. This group serves as a forum for local, tribal, state, and Federal users to collaboratively address interoperability issues, coordinate activities, and identify common solutions to challenges.

- As Administrator of the Emergency Communications Preparedness Center (ECPC), OEC is strengthening interoperability among Federal agencies by cataloging interoperability programs which will provide the foundation for the ECPC clearinghouse.

Grant Guidance

- Grant funding provides states, territories, local, and tribal governments with the resources to carry out interoperable emergency communications initiatives. By coordinating policy with DHS and other Federal agency interoperable communications-related grant programs, OEC will maximize the Federal government's return on emergency response communications-related grant dollars by aligning them with the strategic goals and objectives set in the NECP.

- In 2008, OEC collaborated with the Federal Emergency Management Agency Grant Programs Directorate on the development of the first Interoperable Emergency Communications Grant Program (IECGP) Grant Guidance and Application Kit. States and territories will receive almost $50 million in grants in fiscal year 2008, to fund planning, training, and exercises initiatives to improve interoperable emergency communications. In addition, a $20 million supplemental grant will be awarded to the state of Mississippi to implement an interoperable communication system in conjunction with local stakeholders.