



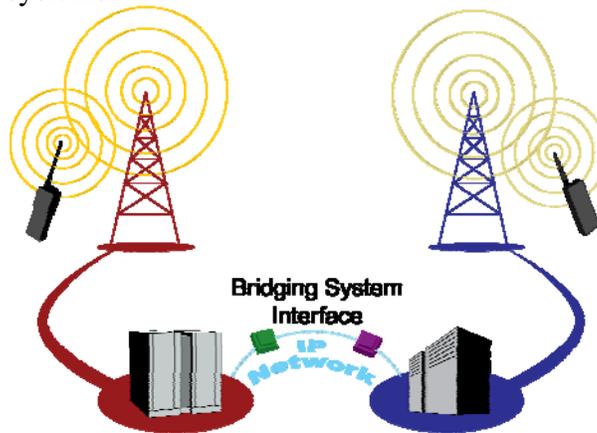
Voice over Internet Protocol Specifications

Background

The Nation's emergency responders traditionally have used two-way radios—known as Land Mobile Radios (LMRs)—to communicate with each other when responding to both day-to-day incidents and large-scale emergencies. However, even the most powerful of these radios are often not interoperable with each other because they broadcast in different frequency bands. The addition of digital radio technology has exacerbated this problem since digital radio uses various incompatible, proprietary protocols. To connect radio systems, emergency responders rely on bridging solutions, which increasingly are utilizing Internet Protocol-based connections to transmit voice communications across radio systems. This technology is known as Voice over Internet Protocol (VoIP). Although VoIP is based on standards, the technology lacks a single standard adopted by all manufacturers. As a result, there is no guarantee that one manufacturer's VoIP-based equipment will successfully interface with another's, even though they may both use standards.

Bridging the Compatibility Gap

To address these compatibility gaps, the Department of Homeland Security's (DHS) Science and Technology Directorate is assisting the development of VoIP specifications in partnership with the Public Safety VoIP Working Group, comprised of emergency responders, industry representatives, and the National Institute of Standards and Technology's Office of Law Enforcement Standards. Each VoIP specification will identify the standards and settings necessary for VoIP-based devices to connect with one another—reducing costs for system design and installation. Bridging systems with interfaces built to these specifications will help one emergency response agency seamlessly connect its radio system to another agency's system over a network—regardless of manufacturer. The Bridging Systems Interface (BSI) is the first interface that the Public Safety VoIP Working Group has developed and tested. When implemented into bridging equipment, the BSI will provide a common, efficient connection point between disparate VoIP-based radio systems.



The current BSI specification meets a core set of requirement prioritized by emergency responders and provides connectivity among radio systems. The Public Safety VoIP Working Group is working on an enhanced specification for the BSI that will provide additional prioritized features. The Working Group will address additional areas of emergency response VoIP technology for which no specifications exist.