

Lack of communications interoperability has become an urgent problem affecting every level of government—as well as citizen trust in government. The basic problem is that when different first responder organizations convene at an incident scene, they often cannot communicate directly because their radios operate over different frequencies and use different techniques.

Effective emergency response requires the flexibility to use any communications device: existing analog or digital radios, new Project 25 (P25) radios, Push-to-Talk (PTT) devices, regular phones, cell phones, IP phones, and PCs and laptops.

Communications Interoperability: Vital for Public Safety

Radio interoperability means that public safety personnel can talk directly to each other—without a dispatcher—through any type of radio device, including UHF, VHF, and 700 and 800 MHz. Interoperability is essential for situational awareness and a unified chain of command. But radio interoperability alone is not enough because some members of the chain of command likely will be outside the radio range when an incident occurs. Therefore, addressing the challenge requires reframing it—from radio interoperability to more general communications interoperability among radios, phones, and PCs and laptops.

A proven solution for communications interoperability is to send radio traffic over the government's existing IP network, just like any other kind of voice, video, or data traffic. With an IP-based approach to interoperability, first responders, commanders, and government executives can join radio talk groups using any type of communications device: radio, phone, or other device.

The integrated Cisco® IP Interoperability and Collaboration System (IPICS) and Raytheon JPS ACU-2000 IP solution delivers this capability today by creating a “network of networks.” For example, the integrated solution can link county A's P25 800-MHz network over the IP network to the state police department's P25 700-MHz network, county B's analog VHF network, the local university's analog UHF network, and the public switched telephone network (PSTN) and cellular networks (Figure 1).

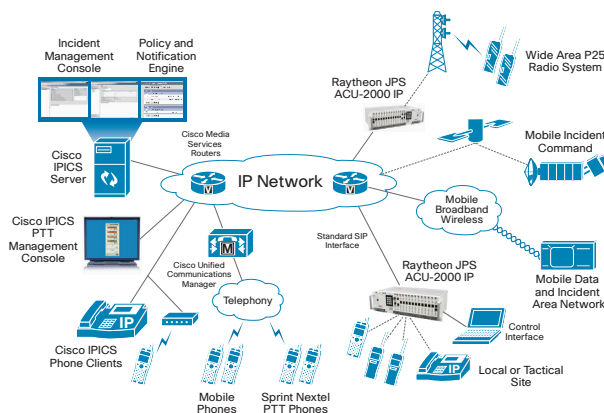
Built upon an open-standard IP interface between the Raytheon JPS ACU-2000 IP and Cisco IPICS, the solution extends the reach and functions of existing and new radio

systems and gives local, state, and federal public safety organizations the freedom to choose and manage their own radio systems, from any vendor.

The Cisco IPICS and Raytheon JPS ACU-2000 IP integrated solution helps public safety agencies to:

- Efficiently interoperate among P25 radios, non-P25 radios, and communications systems other than radios
- Continue using their existing radio systems as they gradually replace them with newer technologies
- Achieve transparent, local area interoperability with best in class radio interface and easy, real-time configuration capabilities
- Provide rapidly deployable communications interoperability for tactical or mobile command and control
- Attain flexible, scalable, and reliable wide-area interoperability with an open-standards IP-based solution; users can communicate with whatever device they have from wherever they are
- Rapidly inform and assemble the response team with integrated, interactive notification capabilities

Figure 1 Cisco IPICS and Raytheon JPS ACU-2000 IP Solution



Benefits for public safety organizations include the following:

- Improved public safety communications and response
 - Unified chain of command and control
 - Faster incident response
 - Improved coordination across agencies

- Any-to-any secure communications interoperability
 - Access to radio communications from mobile phones, landline phones, IP phones, and desktop PCs from any location
 - Resilient and scalable network solution
- IP interoperability for radios, networks, and systems
 - Ability to communicate between analog and digital, P25 and non-P25, and conventional and trunked radio systems
 - Graceful migration: Public safety agencies can continue using their existing radio systems as they gradually replace them with new technologies
- System of systems capabilities incorporating:
 - Telephony, cellular, and satellite networks
 - Notification and messaging services
 - Broadband wireless mesh
- Secure control, ownership, and governance of resources for each agency, department, and jurisdiction
- Rapidly deployable
- Lower operating costs

Why Raytheon JPS and Cisco?

Raytheon JPS is the industry leader in radio interoperability technology. Cisco is the leader in public safety networking providing the greatest breadth and depth of public safety solutions for voice, video, data, mobility and security using open standards and proven integrated IP networking.

Together Raytheon JPS and Cisco are delivering one of the best open-standards, radio and IP interoperability solution in the industry.

The comprehensive interoperability solution from Cisco and Raytheon JPS provides a platform to achieve local and wide-area interoperability across radio networks, IP networks, telephony, cellular, broadband mobile wireless networks, satellite networks and more using open IP standards such as Session Initiation Protocol (SIP). Now, with this collaborative solution, achieved by integrating the ACU-2000 IP with Cisco IPICS through a standard SIP interface, public safety agencies can flexibly enable new levels of communications and interoperability to support tactical and wide-area interoperable communications.

For more information, please visit:

<http://www.cisco.com/go/ipicssolution>.