



## P25 ISSI Plus IP Interoperability: Build a “Network of Networks”

Public safety agencies can solve the interoperability challenge with an integrated P25 Inter-RF Sub-System Interface (ISSI) and IP interoperability solution from Cisco®, EADS, and Raytheon JPS.

### **P25: Interoperability Beyond the Air Interface**

The lack of interoperability between radio networks is an urgent challenge for public safety because it hinders coordinated response and a unified chain of command. To address the challenge, many agencies have focused exclusively on replacing or upgrading their radio systems with radio systems based on the Project 25 (P25) family of open standards.

The P25 radio interface is a good start for interoperability, but complementary technologies are needed to meet important requirements that the P25 radio interface does not address:

- Feature transparency and roaming across different agencies' P25 systems
- Interoperability between P25 and non-P25 radio systems, including analog, conventional digital, and trunked digital: Universal interoperability is essential because most agencies will not use P25 radio systems exclusively for many years because of funding cycles and deployment timeframes.
- Support for communications devices other than radios: Personnel who are out of radio range or not equipped with radios might need to use phones, IP phones, cell phones, personal digital assistants, or PCs and laptops.

### **Solution: Network of Networks Enabled by P25 ISSI**

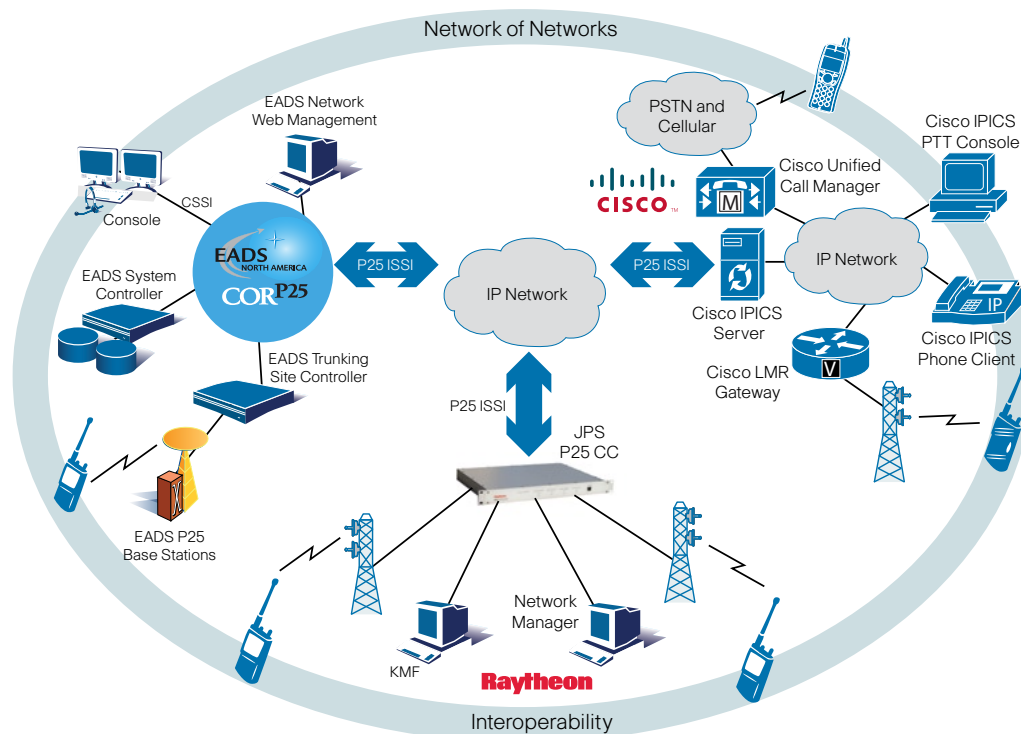
At APCO, Cisco, EADS, and Raytheon JPS are showcasing an interoperability solution that works today: creation of a “network of networks” that connects all P25 and non-25 networks. A network of networks can link county A's P25 800-MHz network to the state police department's P25 700-MHz network, county B's analog VHF network, and the local university's analog UHF network.

The P25 ISSI has an important function in the solution because it enables P25-compliant systems to communicate over IP networks, and supports feature transparency and roaming. P25 ISSI does not, however, directly connect non-P25 systems to P25 systems or non-P25 systems to each other. Nor does it support the myriad devices other than radios, such as phones and laptops, that public safety personnel might use when in the office or out of radio range.

The solution, shown at APCO, from Cisco, EADS, and Raytheon JPS, leverages P25 ISSI and interoperability to succeed in building a network of networks by:

- Connecting P25 systems with the P25 ISSI from EADS and Raytheon JPS
- Connecting P25 to non-P25 systems and non-P25 systems to each other with an IP interoperability solution from Cisco
- Extending access to the radio networks to phones, cell phones, IP phones, and PCs with the Cisco IPICS PMC Client Software (Cisco IP Interoperability and Collaboration System [IPICS] Push-to-Talk Management Center [PMC]; Figure 1)

Figure 1 Connecting P25 and Non-P25 Networks in Any Combination



By combining P25 ISSI radio networks from EADS and Raytheon JPS with Cisco IPICS, the solution helps enable simple, cost-effective, and comprehensive communications interoperability. Its major capabilities include:

- Radio interoperability: Personnel can join talk groups using any existing or new radio system, solving the immediate need for radio interoperability.
- Extension of the radio networks to any location with a phone or Internet connection: Pre-authorized personnel can access the radio network using a landline phone, cell phone, IP phone, or PC or laptop with the Cisco IPICS PMC Client Software, giving agencies the flexibility to provide office personnel or storefront operations with laptops or IP phones instead of more expensive radios.
- P25 feature transparency: The P25 ISSI supports talk-group calls, end-to-end encryption, emergency calls, Push-to-Talk (PTT), talk-group (TG) ID, and unit-to-unit private calls across systems.
- Roaming: Visitors who are roaming on another agency's system can access their home talk group if the visitors and visited system use the same frequency band or if visitors use multiband radios.
- Enhanced control: Each system operator can control which channels, talk groups, or radios to share with other systems over the P25 ISSI.

## Start Today

An effective interoperability plan requires two actions. First, when purchasing a new radio infrastructure, it requires networks that can or will soon support the P25 ISSI, such as those offered by EADS and Raytheon JPS. And second, deploy Cisco IPICS today to create a network of networks (both P25, non-P25, PC, phones, and cell phones) and establish the foundation to take full advantage of P25 ISSI as it is deployed.

For more information about Cisco IPICS solutions, visit

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

For more information about EADS North America, visit <http://www.eads-ps.com>.

For more information about Raytheon, visit <http://www.raytheon.com/jps>.



### Americas Headquarters

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
[www.cisco.com](http://www.cisco.com)  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883

### Asia Pacific Headquarters

Cisco Systems, Inc.  
168 Robinson Road  
#28-01 Capital Tower  
Singapore 068912  
[www.cisco.com](http://www.cisco.com)  
Tel: +65 6317 7777  
Fax: +65 6317 7799

### Europe Headquarters

Cisco Systems International BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
[www-europe.cisco.com](http://www-europe.cisco.com)  
Tel: +31 0 800 020 0791  
Fax: +31 0 20 357 1100

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