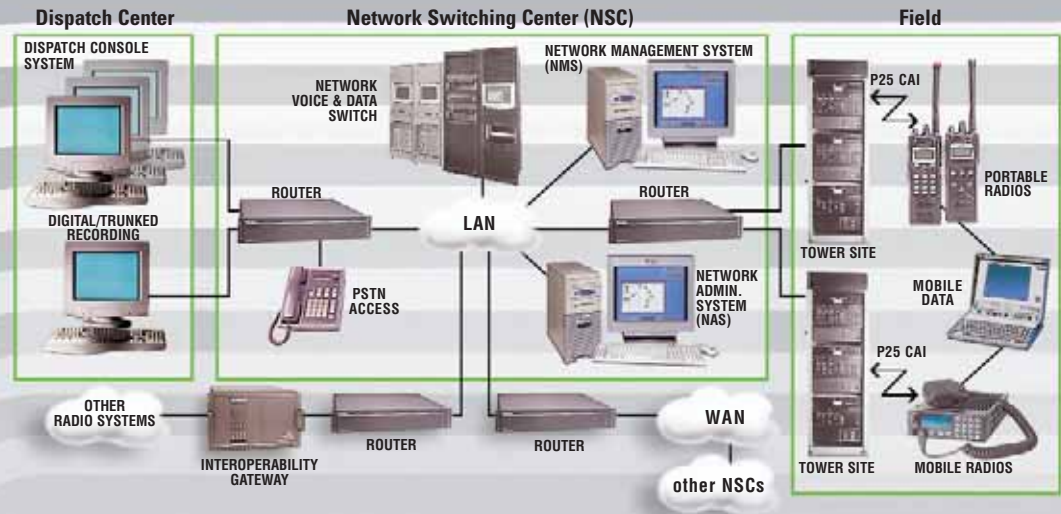


# EXPANDING DIGITAL COMMUNICATIONS

*P25<sup>IP</sup> provides trunked or conventional digital communications with industry-leading Internet Protocol (IP) architecture for public safety, federal, utility and transit market users who require Project 25 interoperability.*

**P25<sup>IP</sup>**  
A VIDA Network System

**P25<sup>IP</sup>:  
Expanding Digital  
Communications**  
P25<sup>IP</sup> offers a range of rugged,  
standards-based, software-defined  
radio, dispatch, network and net-  
work management equipment.



## Exceeding the Standards, Meeting Federal Mandates

As shown in the comparison chart (below, right) M/A-COM's P25<sup>IP</sup> exceeds Project 25 standards and delivers more trunked and conventional features by leveraging the power of the Internet Protocol (IP). And these same P25<sup>IP</sup> network solutions meet the National Telecommunications and Information Administration (NTIA) mandates for narrowband operation in VHF and UHF frequencies, as well as Department of Defense mandates for Project 25 compliance.

### Interoperability with Legacy Systems

P25<sup>IP</sup> uses M/A-COM's NetworkFirst interoperability solution for unsurpassed network-based interoperability with existing radio systems. Through the use of industry-standard interfaces, instantaneous interoperability – even with other vendor's radio equipment – can be established between agencies operating with disparate radio systems, technologies and radio frequencies. M/A-COM's IP-based infrastructure is also compatible with other vendor's IP-based consoles, data applications and ancillary equipment.

### Software-defined Radios Add Flexibility

Because P25<sup>IP</sup> radios are defined by software rather than hardware, it is easy to:

- Add or reconfigure radios and other

equipment over the life of the system

- Update or change radio features and user profiles over-the-air
- Support multiple operating modes, including: P25<sup>IP</sup> digital operation, conventional analog FM, and EDACS/ProVoice

### High Reliability

All P25<sup>IP</sup> systems and components meet the high standards of reliability required for mission-critical performance. These systems are designed to be highly fault tolerant through the use of:

- Optional "high availability" voice and data servers that provide redundant hot-standby capability for critical system infrastructure
- Modular station design which allows easy troubleshooting and repair
- Critical database back ups at each site, allowing uninterrupted local communications even if IP links are disrupted
- Forward-error-correction (FEC) that maintains digital voice levels at the highest quality, even in rural areas or difficult terrain.

### Security Maintained at All Levels

Security is built into every level of the P25<sup>IP</sup> network. In addition to end-to-end P25 over-the-air voice and data encryption using either the Federal Government's latest

encryption algorithm (AES) or P25-compliant DES, M/A-COM's P25<sup>IP</sup> provides network security by further encrypting IP backbone transmissions. Finally, M/A-COM can provide additional security to the radio system by validating all radios on the system and/or by requiring password protection for subscriber unit personality programming.

### Transition at Your Own Pace

P25<sup>IP</sup> lets you transition at your own pace by allowing legacy analog voice and digital technologies to work together seamlessly. For example, the network infrastructure transparently allows a rescue worker using an analog radio to talk with a user on a P25<sup>IP</sup> digital radio throughout the entire coverage area. And because P25<sup>IP</sup> is compatible with industry-standard IP-based products, your current radio investment is protected for the future.

### Lower Cost of Ownership

P25<sup>IP</sup> inherently provides low Total Ownership Cost (TOC) through:

- Combining two radios in one (voice and data)
- Graceful migration from legacy systems
- The use of industry proven, high volume COTS equipment,
- Over-the-air re-programmability
- High reliability

### Standards-Based for Connectivity

Our use of standard protocols and interfaces goes far beyond the norm in the land mobile radio (LMR) industry. The P25<sup>IP</sup> network facilitates the integration of off-the-shelf mobile IP applications by providing industry-standard connectivity. Additionally, P25<sup>IP</sup> mobile radios provide a standard RS-232 serial interface for connecting to portable PCs and other third-party devices.

### Integrated Voice and Data

Integrated voice and data eliminates the need for separate voice and data networks, significantly reducing overall network equipment cost. In addition, integrated voice and data supports GPS data, allowing you to monitor the location of vehicles in real time from a dispatch center.

### Rugged and Field Proven

The P25<sup>IP</sup> lineup of software-based radios and system components provides highly reliable, rugged and field-proven equipment that includes:

- Portables
- Mobiles
- Desktop Stations
- Base Stations/Controllers
- Network Management System (NMS)
- P25<sup>IP</sup> Voice and Data Switch
- Interoperability Gateway

### It's the VIDA Network that Makes the Difference

As either a stand-alone system or fully integrated element of a VIDA Network, P25<sup>IP</sup> delivers:

- Project 25 Common Air Interface (CAI)
- Conventional or trunked channel access and control
- Full interoperability for cross-agency communication
- Integrated Voice and Data — one radio, one infrastructure
- End-to-End IP Addressing
- Encrypted Voice (DES and AES)
- Enhanced digital features including roaming and mobility management
- P25 OTAR (Over-The-Air-Rekeying)
- SNMP-based network management

## FEATURE COMPARISON

DESIRED FEATURE	P25 <sup>IP</sup>	Conventional P25	Trunked P25
P25 Clear Voice	✓	✓	✓
– User ID	✓	✓	✓
– Individual Call	✓	✓	✓
P25 Encryption	✓	✓	✓
P25 OTAR	✓	✓	✓
P25 Packet Data	✓	✓	✓
Roaming	✓	—	✓
Registration	✓	—	✓
End-to-End IP	✓	—	—
Console choice	✓	—	—
Analog Migration	✓	—	—

## **P25<sup>IP</sup>** A VIDA Network System

As either a stand-alone system or fully integrated element of a VIDA Network, P25<sup>IP</sup> provides IP-based trunked or conventional digital communications for public safety, federal, utility and transit market users requiring Project 25 interoperability and DoD narrowband VHF/UHF operation. Contact your M/A-COM representative to learn more about P25<sup>IP</sup> and other VIDA Network systems and applications.

### **M/A-COM, INC.**

1011 PAWTUCKET BOULEVARD  
LOWELL, MASSACHUSETTS 01853 U.S.A.  
PHONE: 1 800 528 7711  
FAX: 1 800 833 7592  
[www.macom-wireless.com](http://www.macom-wireless.com)



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