

Motorola's ASTRO 25 IP Platform



Digital, coordinated, and integrated communications

Project 25 Standards



P25 is the standard for digital public safety networks

Project 25 Standards



Interoperability with equipment from multiple vendors

Project 25 Standards

- Public safety standard for interoperability
- New capabilities with digital operation
- Meets FCC (12.5 kHz) narrowband requirements
- Choice of multiple equipment manufacturers



Everything Is Becoming Digital



Digital



Digital



Digital



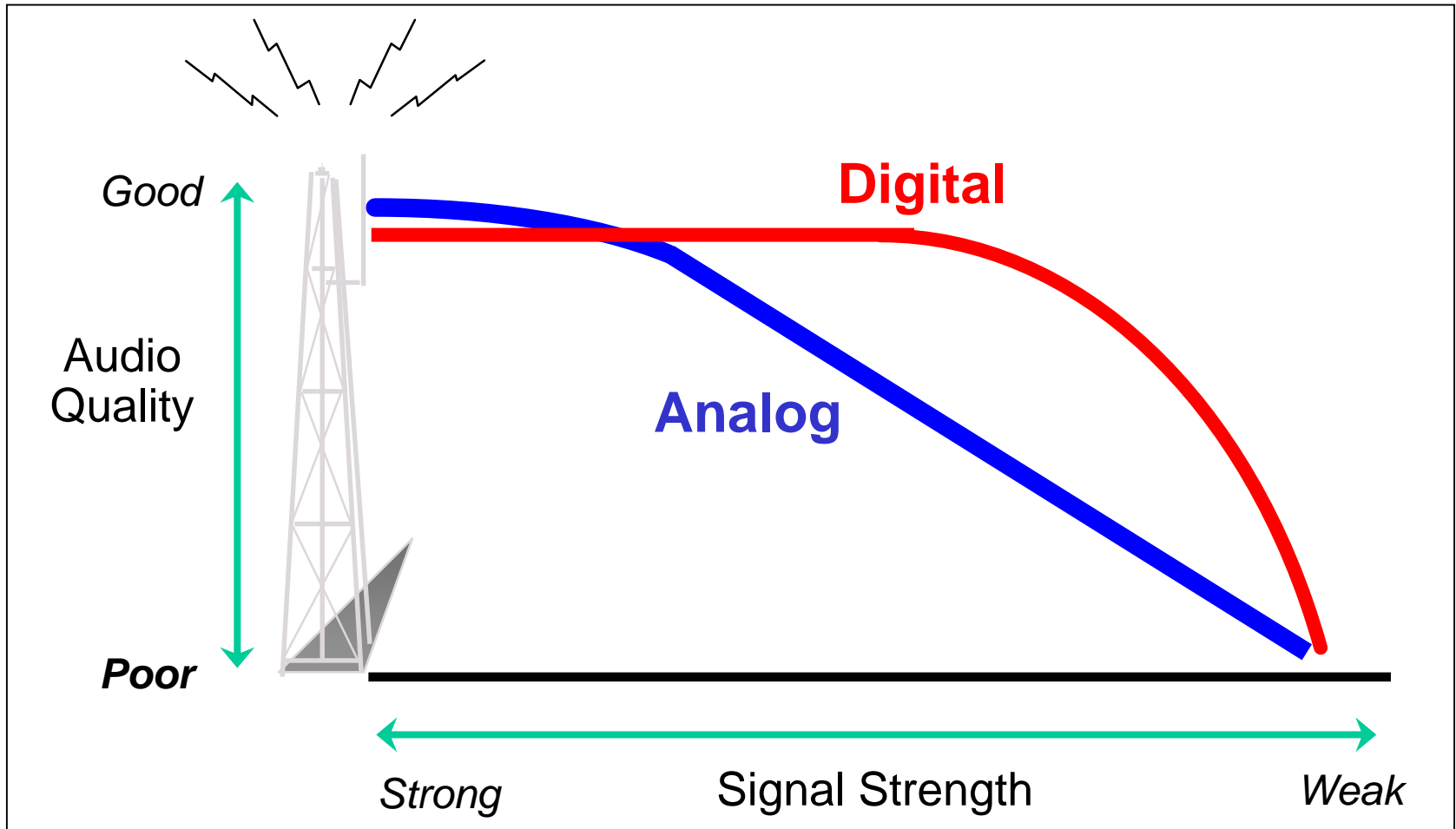
Digital

Why Digital Radio?



Digital radios mean better coverage

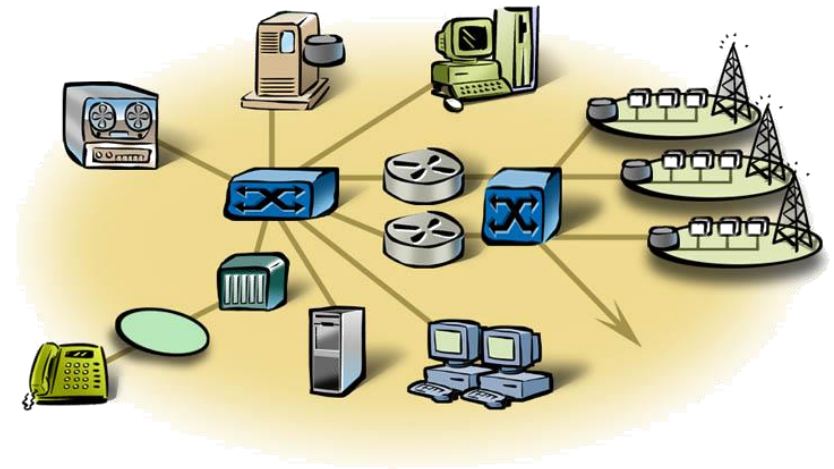
Improved Audio Quality



Digital radios mean better coverage

Motorola's ASTRO 25 IP Platform

- Mission critical IP architecture
- Optimized for public safety operation
- Security of a critical network



RF sites and consoles connect to the IP core

Mission Critical Communications

COVERAGE

County defined



SPECTRUM

Clear channels
Dedicated spectrum



CONTROL

County control for
day-to-day and
emergency operation



CAPABILITY

Performance
Interoperability

RELIABILITY

Redundant design
Local service

SECURITY

Encryption
Authentication
Firewalls



Network Security

Information Assurance (IA)

- Antivirus
- Authentication
- OS Hardening
- Perimeter Security
- Event Logging
- Router Encryption
- MAC Port Security
- Back-up and Recovery
- Voice Confidentiality

Hackers can threaten IP radio networks



Radio Network Security Requirements

Ongoing Security Management

- Planning & Integration
- Anti-virus pre-test
- 24x7 Security Management
- Emergency Response



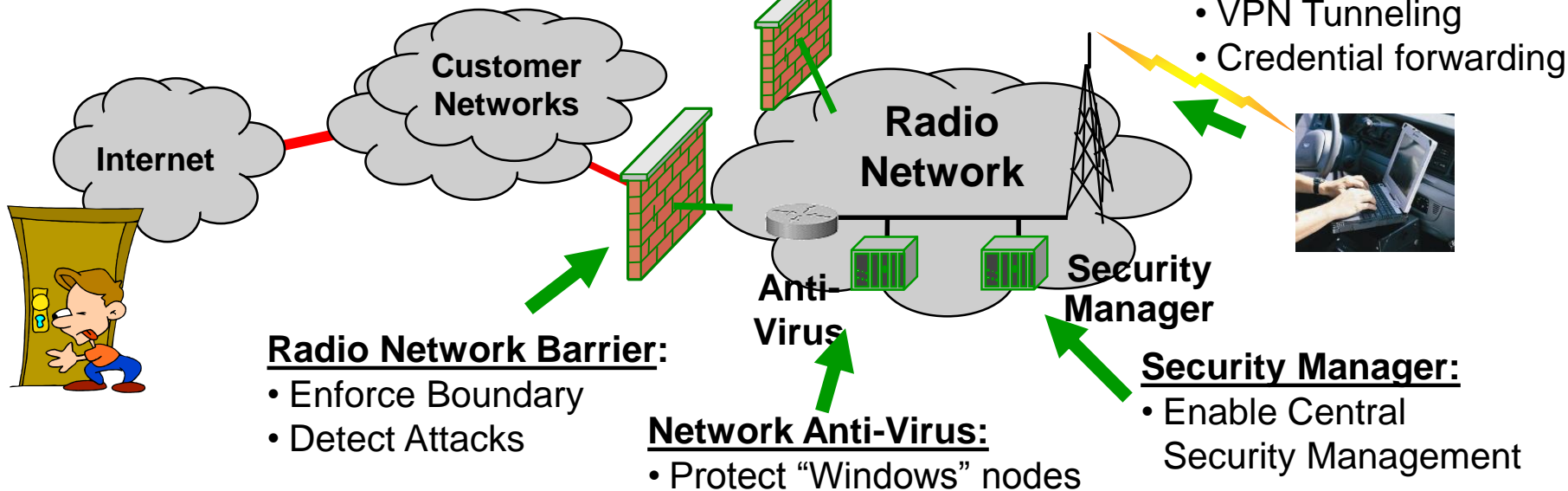
Remote Technician

Service Interface Barrier

- Authenticate service users
- Anti-Virus for service users

Mobile Data:

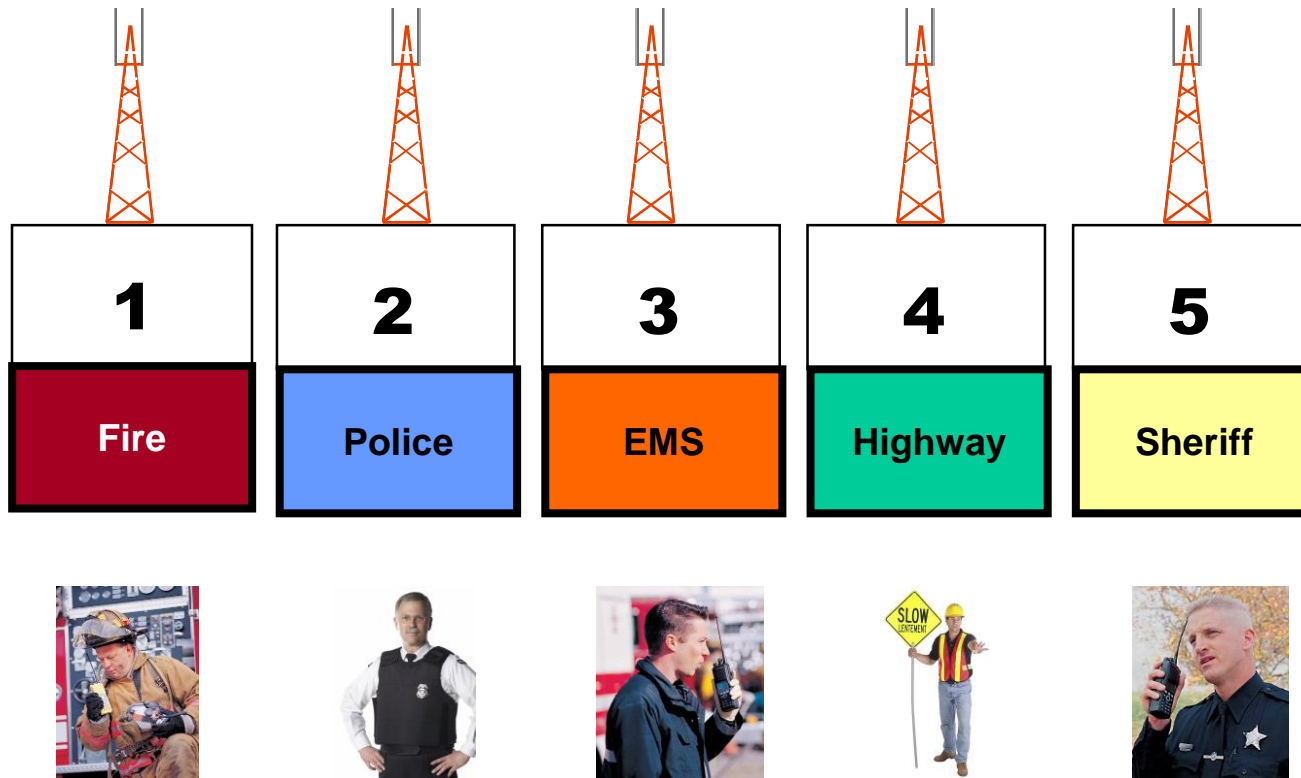
- VPN Tunneling
- Credential forwarding



Protection from threats inside and outside the network

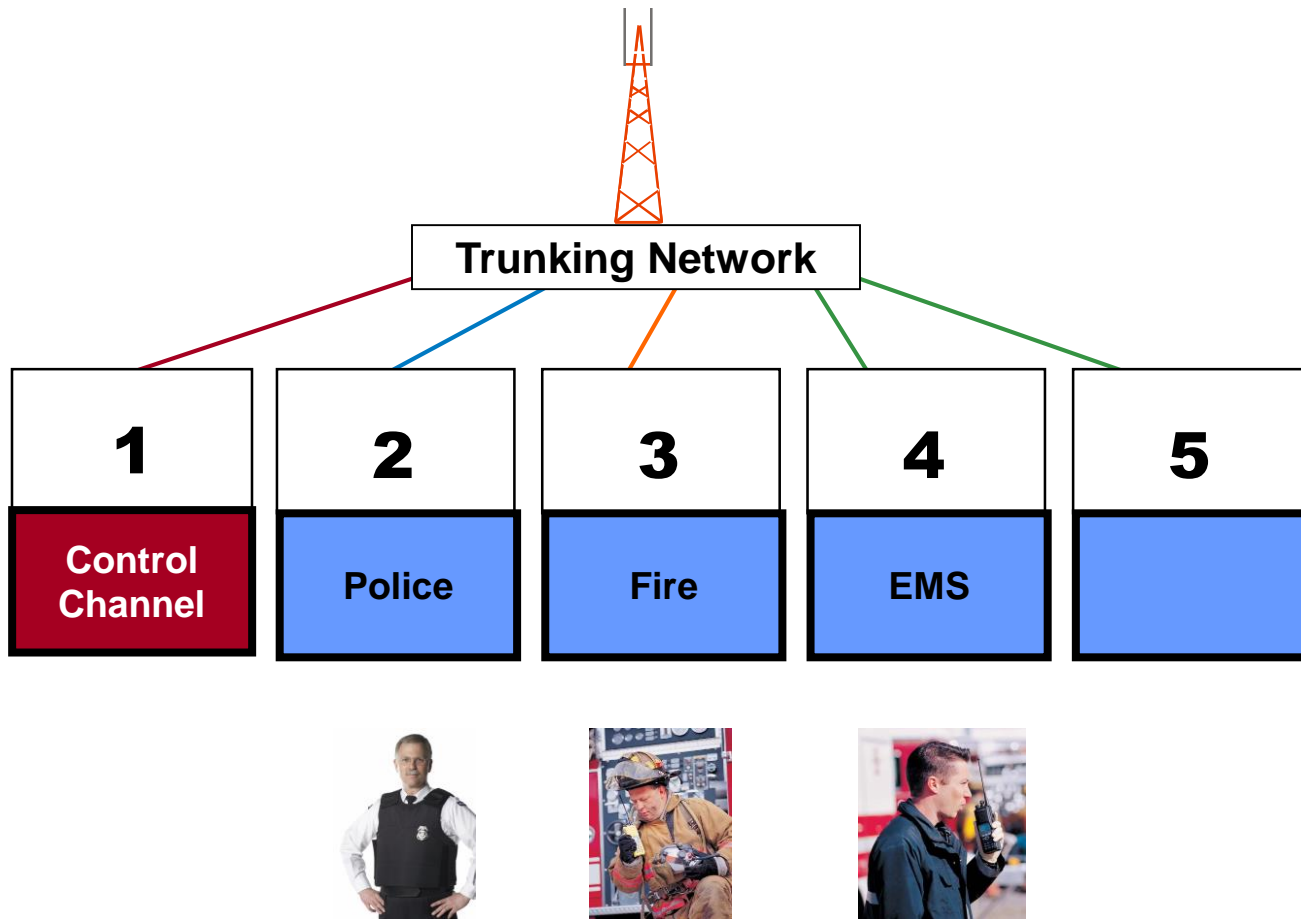


ASTRO 25 Conventional Network



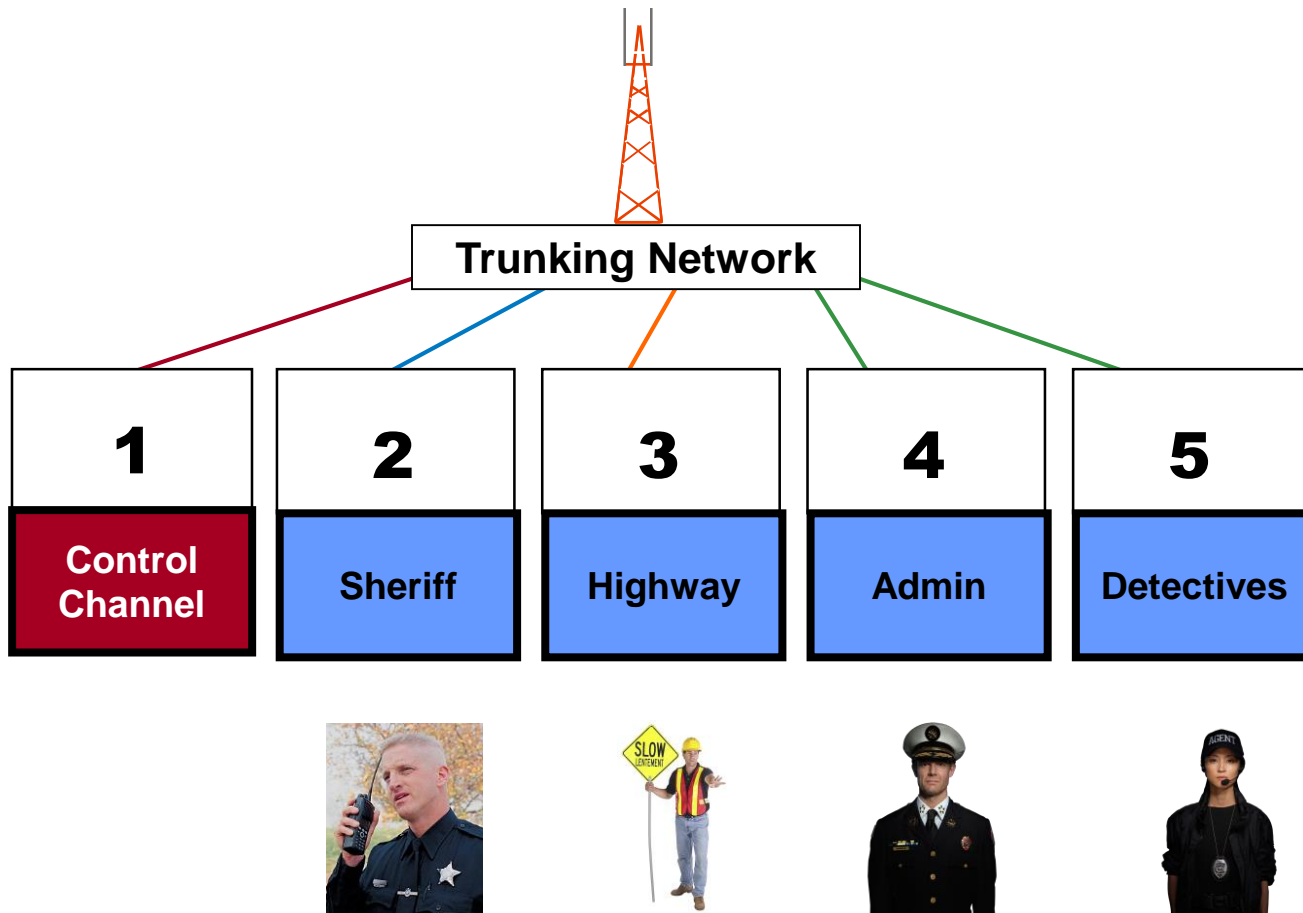
Individual channels for each department

ASTRO 25 Trunked Network



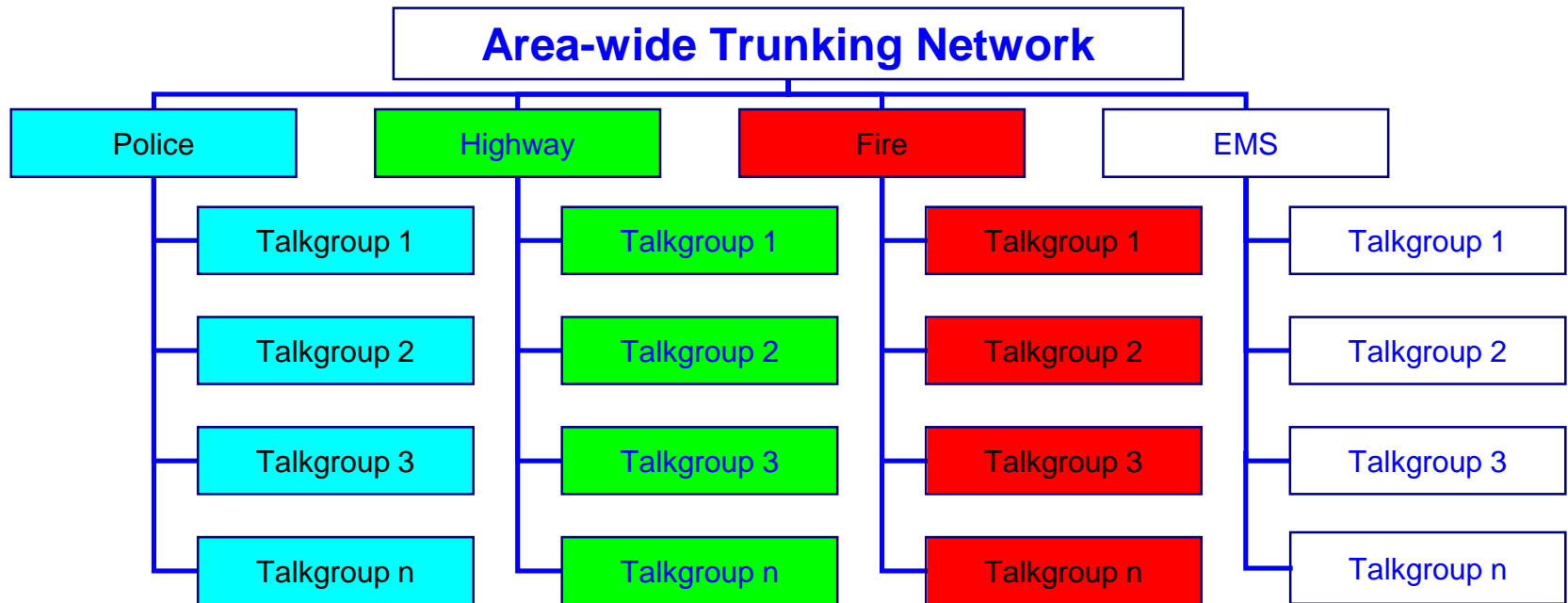
Shared network with all local or regional agencies

ASTRO 25 Trunked Network



Better efficiency with fewer busies

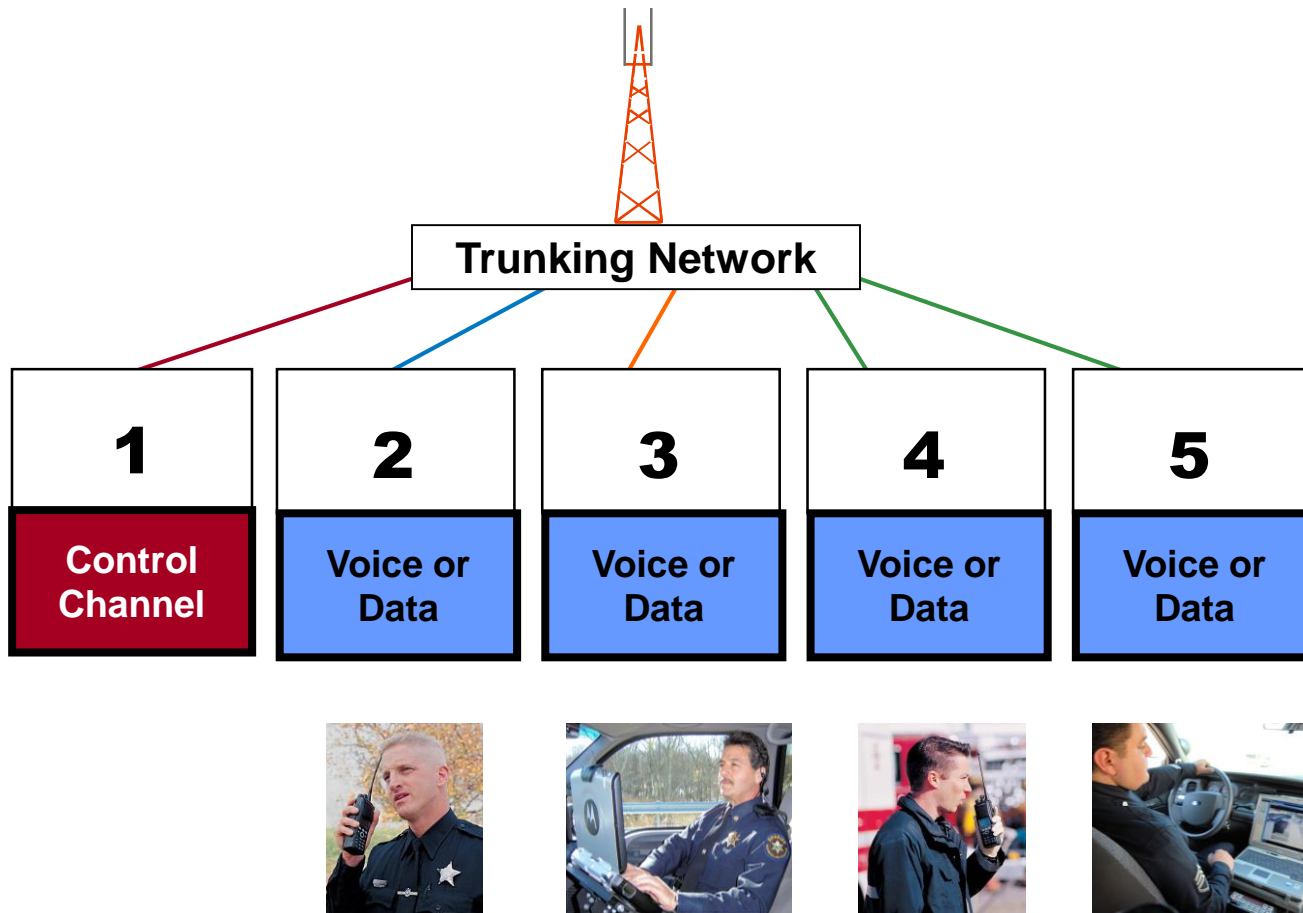
ASTRO 25 Trunked Network



Dozens of talkgroups with a few channels



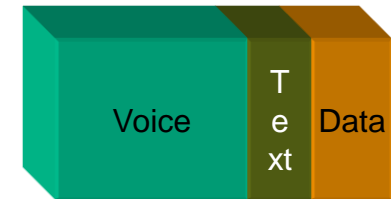
ASTRO 25 Trunked Network



Voice and data are integrated with ASTRO 25

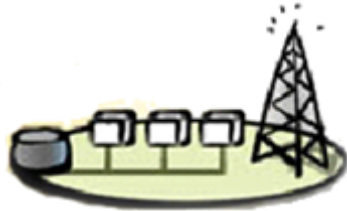
ASTRO 25 Integrated Voice and Data

- Integrated with trunked network
- Data speed of 9.6 kbps
- Enables the following applications:
 - Over-the-air radio programming
 - Optional - GPS location
 - NYSPIN inquiry capability
 - Text messaging service



Voice and data in one radio

Programming Over P25 (POP25)



ASTRO 25
Network

- Increases user productivity
- Reduces total cost of ownership
- Communications maintained during programming



Radio software is updated over-the-air

ASTRO 25 GPS Location



- Enhanced fleet security and safety
- Improved efficiency and response times
- Better resource management and allocation

Location information on a secure, private network

ASTRO 25 Text Messaging

- Receive silent dispatch messages
- Query external databases
- Text to other devices
- Control of security cameras from portable radios



Connectivity and messaging to / from public networks

Motorola's ASTRO 25 IP Platform



Mission critical communications for public safety users

END

- Extra Slides below – Time Permitting



ASTRO 25 Express

- **P25 Phase 1 voice solution**
- **Single Site Only**
- **G-Series Controller & Stations**
 - **18 Channels**
- **CSS for configuration**
- **Basic Information Assurance**
- **Wireless Console**
- **GenWatch3 for Network Management**
 - **Over the Air (control channel) monitoring and performance reports**
- **No HPD, no IV&D, no MOSCAD, no Simulcast, or no Interconnect**
- **Ships pre-racked from factory**



Introducing ASTRO 25 Express

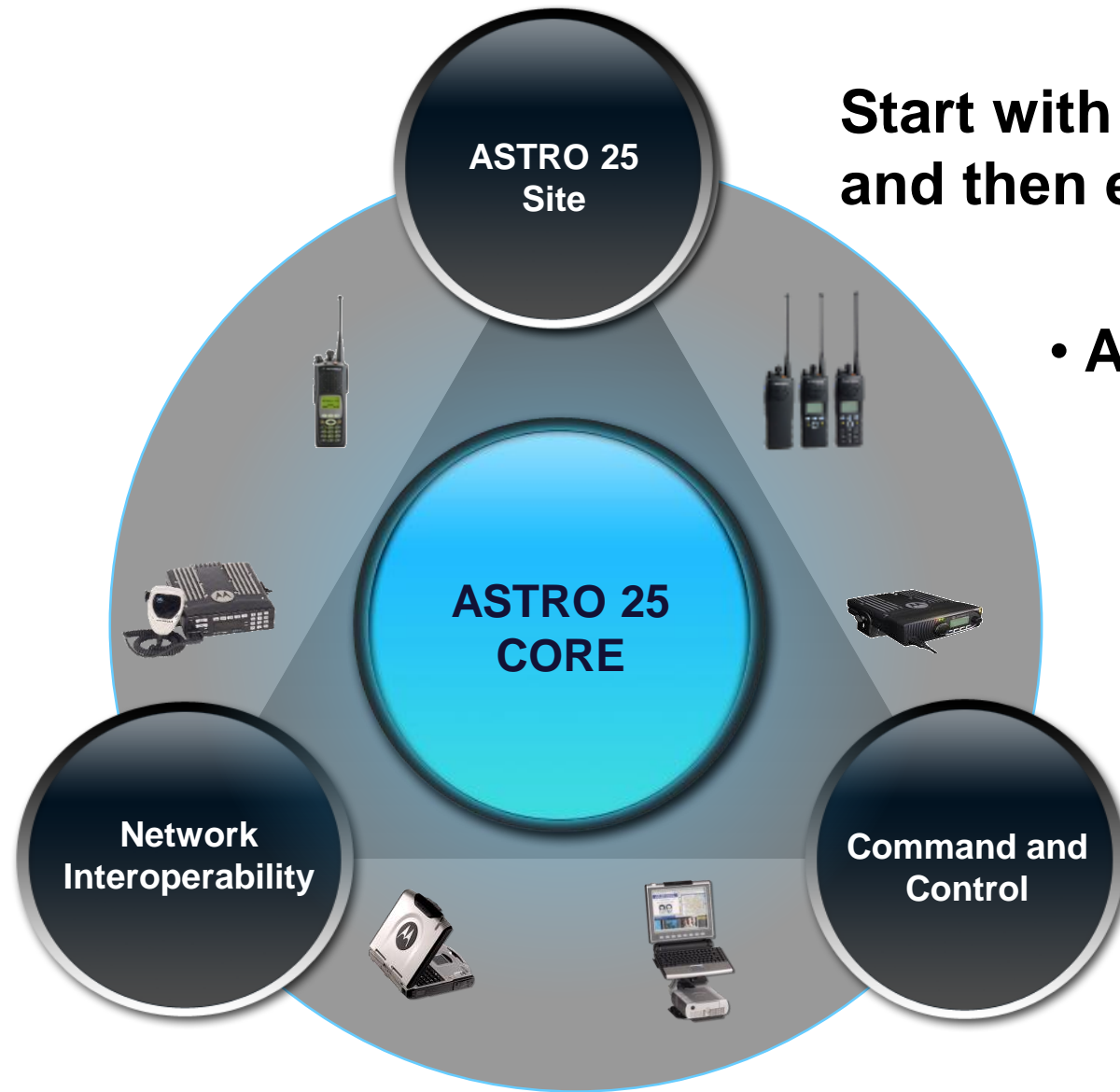
ASTRO 25
Express



A **cost-effective,**
single site P25 voice system
rapidly delivered and deployed
with the capability to grow
within the ASTRO 25 portfolio
your needs change

ASTRO 25 Express

**Start with an ASTRO 25 Express,
and then expand as desired...**



- **Add an ASTRO 25 core**
 - Network Management
 - Multi-Site capability
 - Connect to other cores
- **Add Data & Apps**
- **Add Consoles**
- **Add ISSI**

Industry Leading P25 Products

1st Generation



ASTRO Saber
ASTRO Spectra



ASTRO Spectra

2nd Generation



XTS 3000
XTS 3500
ASTRO Spectra +



ASTRO Spectra +

3rd Generation



XTS 5000
XTS 2500
XTS 1500



XTL 5000
XTL 2500
XTL 1500

4th Generation



APX 7000



APX 7500

Introducing APX!



A Radio like no other!



Positioning – APX versus XTS/XTL



Dual-sided design – dual displays, dual speakers & dual microphones



Intelligent Lighting –radio status information with multiple colors



Improved Ergonomics – PTT , Side Buttons & Keypad



Mobile (APX 7500)



Accessories

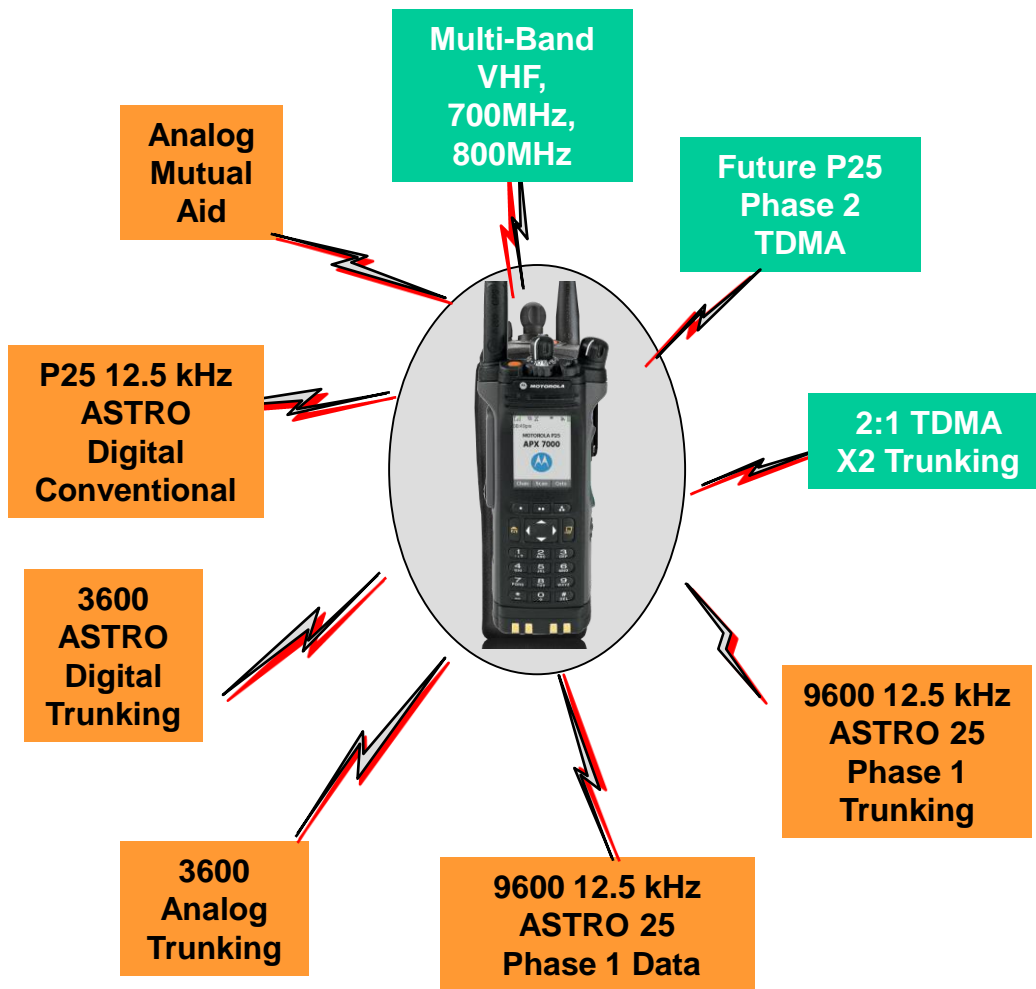


Positioning APX



- APX reinforces the Subscriber portfolio with market leading features.
- APX is not a replacement for XTS/XTL Product Line.
- For High Tier Users who need TDMA for Spectrum Efficiency and/or Multiband Capability.

Highest Level of Interoperability



- Provide the migration path from FDMA to TDMA technology.
- Migration to P25 Phase 2 TDMA.
- Backwards compatible with existing P25 and Motorola legacy (SN/SZ Systems).
- Multiple RF Bands provide highest level of interoperability.