P25 New Products and Services for APCO 2018

Presented by:
PTIG - The Project 25 Technology Interest Group
www.project25.org

Monday August 6th 2:00-3:00 PM
Veronese 2401 AB 2501 AB Level 2

Project 25 Technology Interest Group (PTIG)

What do we do?:

- Provide a forum for users and manufacturers
- Manage education and training on Project 25
- Create and distribute Project 25 information
- Support the TIA standards process
- Offer Users access to the standards process without the rigor of TIA membership
- Maintain a “neutral ground” among the competing manufacturers and providers

And...

- Present Classroom Training and Panels such as THIS SESSION.
PROJECT 25 TECHNOLOGY INTEREST GROUP

**Founding Members**

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OUR MEMBER ORGANIZATIONS AS APCO EXHIBITORS SAY:

THANK YOU
Panel Participants

- **Steve Nichols**, Director, Project 25 Technology Interest Group (PTIG)
- **Dominick Arcuri**, Subject Matter Expert, Televate
- **Scott Wright**, Telecommunications Engineer, Connecticut Department of Emergency Service and Public Protection
- **Neil Horden**, Chief Consultant, Federal Engineering
- **Cheryl Giggetts**, Principal Consultant, CTA Consultants

Agenda

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New P25 Mobile Radios, Portable Radios, Smartphones, and Pagers

Presented by:
PTIG - The Project 25 Technology Interest Group
www.project25.org

What is New
• Radio grade handset with ultra-tough communications hardware
• Glove friendly tactile buttons programmable for public safety applications
• Enabling real-time information, coordination and collaboration across State and Local Agencies

P25 Interoperability solution
• Seamless interoperability between LMR and Band Class 14
  Supports over-the-top PoC or carrier integrated PoC applications

Benefits to Public Safety
• Allows P25 users to seamlessly communicate with Cellular users
• Optimize use of public safety applications for use by Police Officers in the field
• Reliable, scalable mobile networks, along with various options for connectivity and interoperability, off-network and in rural areas

JVCKENWOOD
Ultra Rugged PS-LTE Smartphone

https://www.efjohnson.com  Booth 715
VM7000 P25 Mobile Radio

What is New
- All-Band Multi deck Mobile
- Simultaneously receive and transmit up to four bands
- Includes enhanced vehicular repeater integration

P25 Interoperability solution
- Interoperates with up to four P25 systems simultaneously
  - ATLAS® P25, Astro® 25, VIDA® P25
  - Mixed protocol operation (P25 Phase 1 & 2)

Benefits to Public Safety
- Select and unselect speaker audio control similar to dispatch control (multiple simultaneous conversations)
- Allows public safety user to roam to and operate on secondary systems while simultaneously connected to the primary dispatch

Harris UnifyVehicle - P25 Converged Mobile Radio

What is New
- P25 mobile with Wi-Fi (2.4GHz & 5GHz) and LTE capability coming soon
- Onboard application processing & development platform
- Onboard storage capability (i.e. voice recording)

P25 Interoperability solution
- CAP certified, field-proven P25 mobile interoperability
- Convergence of P25 (LMR), Wi-Fi and LTE technologies
- Open application development platform

Benefits to Public Safety
- Vehicle Area Network with applications to support data needs via LMR, Wi-Fi and LTE
- Record all mission critical communications locally on your mobile
- Future ready to add new applications over time to solve unique customer problems

Learn more at Harris Booth #729
New P25 Portable: KNG2 Series

What is New
• Enhanced Audio (3 Watt)
• Integrated GPS/Bluetooth
• Enhanced PTT and Display

P25 Interoperability solution
• TDMA, FDMA and Mixed Mode Operation
• AES-256, DES and ADP Encryption

Benefits to Public Safety
• Loud and Clear Audio in Public Safety Environments
• Tier 1 and Tier 2 Location Service

New P25 Control Head: KNG Virtual Control Head

What is New
• JAVA Application
• Radio Over IP
• Full Control of Remote Radio

P25 Interoperability solution
• TDMA, FDMA and Mixed Mode
• P25 Fixed Station Interface

Benefits to Public Safety
• Local and/or Remote Control During Critical Incidents
• Audio Logging
New 700/ 800 MHz P25 Portable Radio: F7040

What is New
• Phase 1 and 2 Trunking with Analog/P25 conventional
• Smallest form-factor, full-featured on the P25 market
• Built-in: Bluetooth, GPS, SD Card logging (BER/RSSI)

P25 Interoperability solution
• 2-tone en/decode with Vibrate and Voice Recording
• Offers AES/DES Encryption, OTAR, OTAP and Data

Benefits to Public Safety
• Light & ruggedized w/IP68 and MIL-STD-810G ratings
• Software options to allow for best value and growth

New 700/800MHz P25 Mobile Radio: F7540

What is New
• Phase 1 and 2 Trunking with analog/P25 conventional
• Remote head & dual head options w/ hand-held controller
• Built-in: Bluetooth, GPS receiver, Voice Recording

P25 Interoperability solution
• 35W/ 30W operation for 700 / 800 MHz
• Large color display with day/night mode.

Benefits to Public Safety
• Offers multiple installation options for most vehicles
• Active Noise Cancelling with separate equalizer for both TX & RX

Simoco Wireless Solutions
P25 Digital Portable

Benefits

• Unique Xmode software and configuration upgradability, allowing operation on analog, MPT1327 trunking, P25 conventional and P25 trunking systems.
• Supports conventional, trunking, voting, status and short messaging.
• Ruggedized, robust construction for demanding field use.
• Supports 1500 P25 conventional channels and up to 5 programmable P25 trunked networks.
• IP67 rating on the SRP9180 and SRP9170 offers protection against dust and water.
• DES-OFB and AES Digital encryption supported.
• Highly programmable function buttons.
• Safety and emergency functions such as Stun, GPS/Man Down and Emergency Alarm.
• Multi-vendor compatible accessory connector supports current generation or legacy accessories.
• P25 Compliance Assessment Program (CAP) Compliant.

http://www.simocowirelesssolutions.com

New P25 Voice Pager

What is New

• Now available in P25 Phase II
• Quick Call II/ 2-Tone over P25
• Industry’s only P25 Voice Pager

P25 Interoperability solution

• Migration from legacy 2-tone network to a P25 Network.
• Analog 2-Tone & Digital P25 transmissions on one device.

Benefits to Public Safety

• Cost savings when replacing an aging analog network.
• Improved coverage, excellent voice clarity and superior reliability.
New P25 Repeaters and Aircraft Radios

Presented by:
PTIG - The Project 25 Technology Interest Group
www.project25.org

New P25 Repeater/Base Station Infrastructure

What is New
• 2x 100W Channels in 4RU
• Remote Programming/Diagnostics
• Native DFSI Interface

P25 Interoperability solution
• Vendor Neutral P25 CAI/DFSI
• Phase II Upgrade Path

Benefits to Public Safety
• Conventional Voting and Simulcast Solution
• High Performance at Affordable Price

https://www.codanradio.com/product/cascade
PDR8000 - Portable Digital Repeater

What is New

• Deployment Profiles Capability
• Channel Number Expansion
• Analog Standalone Repeat Operation
• Local User Interface (including channel change)
• 50 Watt Booster Pack

P25 Interoperability solution

• Provides portable, on-scene P25 coverage for special events or incidents.
• Optional V.24 wireline connection allows connectivity to Motorola Solutions Inc. dispatch consoles and voting systems

Benefits to Public Safety

• Deployment Profiles Capability
  • Ease re-deployment without reprogramming
  • 10 Independent Deployment Profiles
  • Store most used configurations: easily activate via keypad
• 64 independently programmable channels per Deployment Profile
• Booster Pack provides additional output for agencies using mobiles

New SRB250 P25 Suitcase Repeater

What is New

• Flexible and customizable platform
• Ruggedized P25 Repeater with simple deploy and repeat mode
• Environmentally protected

P25 Interoperability solution

• In progress

Benefits to Public Safety

• Meets rigorous needs of Public Safety and Business Critical P25 field deployment
• Resilient radio systems which provide a self-contained, compact, robust and easily deployable, radio communications solution

http://www.simocowirelesssolutions.com
New P25 Tactical Mixed Mode Repeater

What is New
- Tactical Mixed Mode repeater
- Rugged Extremely Compact Housing
- All P25 Network Interfaces available

P25 Interoperability solution
- Supports IP/H.F. & Satellite Backhauls
- Interfaces with FSI (BAHA)+CSSI+ISSI (Phase One & Two)

Benefits to Public Safety
- Deployable P25 Repeater for Emergency Communications

Technisonic TDFM-9000 Series Airborne P25 Radios

Based Upon Fully Certified and TDMA Compliant Modules.

Based on a Scalable / Modular Platform allowing over 1000 different user specified configurations

FAA, TCCA installation certified for Fixed Wing and Rotary Wing Aircraft

Meets DHS Cap and Military DSCA and US Forest Service requirements for Airborne P25 operations.

Contact Technisonic at (905) 890-2113
Technisonic TDFM-9000 Series Airborne P25 Radios

Key Benefits to Public Safety:

* Allows access to Federal, State and Local LMR deployments and systems

Multiple Transceiver capability support critical Multi-Jurisdiction operations.

Radios are both FAA and FCC approved for use in aircraft.

Built In advanced features allow for aircraft to act as an airborne repeater, Simulcast station, or for Cross band repeat operations. These “advanced features” allow multiple agency’s and departments to coordinate in Law Enforcement and Disaster situations, even in instances where land based infrastructure has been destroyed or rendered in-operational due to power disruptions or damage.

Contact Technisonic at (905) 890-2113
Technisonic TDFM-9000 Series Airborne P25 Radios

**SCALABLE P25 CAPABLE AIRBORNE RADIO**

- Code Plug Programming via Front Panel Connector / USB Based Cable
- Utilizes Motorola APX-8000 Customer Programming Software

**Summary:**
The Technisonic TDFM-9000 Series radios are operated extensively across the Mission Based Aircraft Market, Inclusive of EMS, Law Enforcement, Forest Service, Federal and Military Markets.

Contact Technisonic at (905) 890-2113

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New P25 Consoles

Presented by:
PTIG - The Project 25 Technology Interest Group
[www.project25.org](http://www.project25.org)
New P25 Console

What is New

- C-Soft v7.5 (available Nov. 2018)

P25 Interoperability solution

- P25 Radio Gateway
- P25 DFSI
- P25 CSSI (Phase I & II)

Benefits to Public Safety

- Crosspatch between technologies
- Interface with CAD, AVL, and others
- Supported by 10+ IP recorder companies

New P25 Console

What is New

- Scout Select: instant recall recorder, redundancy, mobility.
- Audio Bridge™—software permanent patch.
- NIST 800-53 security compliance.
- ICOM trunked wireline interface.
- Cisco Instant Connect phone-to-radio interface.

P25 Scout Select Solution

- Scout Select supports up to eight P25 conventional and trunking talkgroups.
- Audio Bridge™ supports 100 permanent patches for migration and interoperability.
- Interoperability with LTE, DMR, NXDN, MOTOTRBO, Codan, IP telephony, and conventional radios.

Benefits to Public Safety

- Easily upgrade Scout Select to Scout Enterprise with new licensing.
- Designed, built, and supported in the U.S.
New P25 Console

What is New

- Scout Select 400 and Scout Select 800.
- Audio Bridge™ software permanent patch.
- NIST 800-53 security compliance.
- ICOM trunked wireline interface.
- Cisco Instant Connect wireline interface.

Benefits to Public Safety

- Connect P25 systems to LTE and LMR technologies for maximum interoperability.
- Use off-the-shelf computers with public-safety-grade, high-performance Avtec USB speakers, microphones, and foot switches.
- Secure, reliable, proven platform.
- Designed, built, and supported in the U.S.

P25 Scout Select 400 & 800 Solutions

- Scout Select 400 supports four P25 conventional/trunked channels.
- Scout Select 800 supports eight P25 conventional/trunked channels.
- Includes instant recall recorder, mobility, and redundancy.

P25 Console Testing & FirstNet Integration

What is New

- Participating in DHS CAP P25 CSSI conformance test pilot project
- Providing P25 consoles for the Department of Interior lab

P25 Interoperability solution

- Zetron’s Acom and MAX Dispatch consoles used to integrate P25 LMR systems with FirstNet (pre-MCPTT) and network-integrated commercial carrier broadband PTT systems
- Zetron’s gateways to FirstNet and commercial carrier systems via the P25 Console Subsystem Interface (CSSI)

Benefits to Public Safety

- Simple to verify P25 console and RFSS compliance with P25 standards
- Assisting in the development of CSSI automated simulation tools for CSSI conformance tests
New P25 Console

What is New

- Full standards-compliant CSSI/ISSI/DFSI now available
- New support for both half-rate and full-rate vocoders on the ISSI/CSSI
- Full support for all supplementary services in TIA-102.BACD (Emergency Alarm, Emergency Alarm Cancellation, Group Emergency Cancellation, Call Alert, Short Message, Status Query, Status Update, Radio Unit Monitor, Radio Check, Radio Detach, Radio Inhibit / Un-inhibit)
- InterTalk nCompass Mobile Dispatch Console

P25 Interoperability Solution

- Field-deployable P25 dispatch console solution
- Full DFSI feature support, encryption

Benefits to Public Safety

- Increased feature-set supported, more robust applications in the field
- nCompass mobile dispatch unit allows tactical deployment and command in the field, keeps communications connected wherever there is network connectivity
New P25 System Elements and Capabilities

Presented by:
PTIG - The Project 25 Technology Interest Group

www.project25.org

New P25 Antenna Site Monitoring

What is New
- True channelized forward & reflected power measurements for up to 80 frequencies
- Min/max alarms for 24/7 remote monitoring
- Measurement & alarm history available

P25 Interoperability solution
- VHF, UHF, 700/800, 900 MHz available
- RX system monitoring and alarms

Benefits to Public Safety
- Non-intrusive measurements once installed
- Technician knows what to take to site
New P25 Radio Maintenance

What is New

• **DiagnostX**, a proactive radio maintenance tool is now available as a Service

How It Works

• LocusUSA provides all monitoring equipment and performs scans, managing the data from their NOC in Florida

P25 Interoperability Solution

• An essential tool for P25 migration

Report Feature

• Provides detailed reports indicating alignment characteristics by radio ID, identifying their status as **Failed**, **Passed** or **Never Received**

Benefits to Public Safety

• Autonomous from the radio system
• Ensures optimal system performance
• An inexpensive way to identify radios in need of service

www.locususa.com
VAULT™ 2.0
Cloud based Asset Management

What is New
- Perpetual Licensing of P25 Capabilities
- License storage and transfer
- Fleet asset management

P25 Interoperability solution
- Rapid deployment of fleet assets for critical events and inter-jurisdictional operations (remote license activations)
- Cloud based remote management of interoperable cache radio assets

Benefits to Public Safety
- Perpetual software licenses leading to lower cost of ownership for P25 assets
- Increase life time value of P25 investment (HW/SW refresh)
- Real-time hardware and software spare replacement

New P25 Location Services
InterLoc™

What is New
- Location Services Integrated into Dispatch
- Not AVL – Personal Location Service
- Multiple Map Resources & Types of Maps

P25 Location Solution
- Location Derived from P25 Portables & Mobiles
- “Find a Subscriber” Feature Centers Map on P25 User

Benefits to Public Safety
- Subscriber Status (Emergency) Displayed on Map
- Lower Cost – no cellular or map subscription charges

https://www.efjohnson.com  Booth 715
August 2018
Project 25 Technology Interest Group
New P25 LMR to LTE Interoperability

IntelliLink™

What is New

• IntelliLink™ for LMR & LTE Networks
• Map P25 LMR Channels to LTE Talk Groups
• P25 Wireline Interface (ISSI/CSSI) to Kodiak Push-to-Talk

Interoperability Solution

• Can be used with or without a Dispatch Console
• P25 ↔ LTE, also P25 ↔ DMR, P25 ↔ NXDN, etc.

Benefits to Public Safety

• Combine LMR and LTE Users on a Single Network
• Migration Tool: LMR → LTE → FirstNet™

Multi mode Analog/P25 Solutions

What is New

• Supports Analog and both P25 Phase 1 FDMA and Phase 2 TDMA
• Voting and Simulcast software integrated into the TB9400 Base station

P25 Interoperability solution

• CAP certified, field proven P25 interoperable equipment

Benefits to Public Safety

• Provides a path to a cost effective and easy migration
• Full re-use of existing TB9400 and TP9400/TM9400 equipment
• Multi-redundancy and security features

TaitNet AS-IP
TaitNet P25 Conventional LSM
TaitNet P25 Trunking Ph1 LSM/Phase2 Simulcast
Public Safety P25 Trunking Solutions

What is New

- Affordable P25 trunking solutions for 1 to 6 sites
- Compact single robust server (provides RFSS and Site Controller) with high availability option

P25 Interoperability solution

- Multi mode – P25 Phase 1 and 2, non-simulcast or simulcast
- Provides access to all the standard P25 features, like IP Data

Benefits to Public Safety

- Flexible, cost effective P25 trunking and simulcast options for up to six logical sites
- Easy upgrade from a Tait P25 Access single site solution to Tait P25 Express6 multisite solution
- Linear simulcast dramatically reduces site separation, providing greater coverage and lower cost

New P25 Vocoder/Devices & Services

Presented by:
PTIG - The Project 25 Technology Interest Group
www.project25.org
**P25 Enhanced Vocoder Software**

**What is New**
- Licensing a variety of DSP / CPU processors
- Available for various OS’s

**P25 Interoperability Solution**
- Enhanced Dual-Rate Vocoder
- Rate conversion available for Full-Rate and Half-Rate

**Benefits to Public Safety**
- Meets latest P25 requirements for voice quality
- Robust to background noise and harsh environments
- Universal standard for interoperability and assured quality

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**Multi-channel P25 Devices**

**What is New**
- Multiple P25 channels (up to 12 channels)
- USB interface in a compact design
- Windows based PC software included

**P25 Interoperability Solution**
- Features Enhanced Dual-Rate Vocoder
- Cost effective hardware implementation

**Benefits to Public Safety**
- Simple design for easy integration
- Encode / Decode P25 files via USB interface
P25 New Product Trends at APCO 2018

• P25 LMR Interoperability with LTE Broadband Data
  o Multi mode P25/LTE smart phones
  o Mobile P25 radio with Wi-Fi and LTE connectivity
  o New P25 Consoles connect P25 and LTE technologies
• Voice recording in radios
• Mobile radio with simultaneous P25 TX/RX (4 bands)
• New products are P25 Phase 1 and Phase 2 capable

P25 New Product Trends at APCO 2018

• Deployable, mixed-mode, P25 repeaters for Emergency Ops
• Scalable, Configurable P25 Airborne Radios
• P25 Antenna Site Monitoring
• “Over the Air” radio maintenance for P25 Systems
• “Cloud based” Asset management for P25 Systems
• New P25 Location Services
• P25 enhanced Vocoder Software
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