New P25 Products and Services
APCO 2022

Project 25 Technology Interest Group (PTIG)

www.project25.org
APX NEXT XN & XVN500
All-band P25 Smart Radio & Radio Speaker Mic
VHF, UHF, 7/800, GPS, WiFi, Bluetooth, LTE

What is New

• Offering the new platform of public safety applications introduced with APX NEXT in a more ruggedized design with exaggerated controls for gloved use
• The radio and RSM are built to the latest fire industry standards for operation in the most extreme environments

P25 Interoperability Solution

• FDMA and TDMA P25 Air Interface interoperability as well as LTE

Benefits to Public Safety

• Firefighters can keep eyes up and focus forward with intuitive ergonomic design and voice control, even in extreme conditions
• Always stay connected by automatically switching between LTE and LMR based on coverage. All P25 features stay intact.
• Continuously transmit location data over LTE
• Keep devices in the field longer by implementing updates over LTE
VP8000 Multi-Band Portable

The KENWOOD Viking 8000 series Multi-Band, Multi-Protocol portable is specifically designed for today’s public safety agencies with advanced features and ergonomics to meet the first responder’s mission critical operational needs.

• Next generation Viking
• Multi-Band operation (VHF, UHF, 7/800 MHz)
• Multi-Protocol
• Large full-color top LCD
  – Multi-line text – front & top displays
  – Top flip display changes text orientation
  – Configurable display lines / color schemes
• Mixed protocol zones
• Wi-Fi
• GPS
• Bluetooth
• Public safety ergonomics
L3Harris XL EXTREME™ 400P Portable Radio
VHF, UHF, 7/800, GPS, Wi-Fi, LTE, Bluetooth

WHAT IS NEW
• Built to the toughest industry standards for operation in extreme environments
  • Heat resistant seals and display to withstand temperatures up to 500°F
  • Ruggedized against damage from 3-meter drops, salt water and humidity corrosion
• Provides advanced ergonomics for fireground operation
  • Larger emergency button and optional in-building location capability
  • Top display with unique visual zone coding
  • Color tagging and audio playback for the last 5 calls

P25 INTEROPERABILITY SOLUTION
• Multiband P25 operation in VHF, UHF, 7/800
• CAP certified, field-proven P25 interoperability
• Converged P25, Wi-Fi and LTE technologies

BENEFITS TO PUBLIC SAFETY
• Keep everyone connected in extreme fireground conditions
• Enhance PTT coverage & simple device management over LTE networks like AT&T® and Verizon®
• Loud and clear audio with industry-leading noise cancellation

www.L3Harris.com
What is New

- Tier 1, 2 and Tier 3 Models
  - Tier 1 Top display only, no keypad
  - Tier 2 Top & front display, nav keypad only
  - Tier 3 Full alphanumeric keypad
- Longer Battery Life
  - High capacity Li Ion pack
  - AA Alkaline tray with >16hrs battery life
- Large Bright Color Display and Top display
  - Gorilla glass
- Integrated Bluetooth Operation

P25 Interoperability solution

- P25 CAP Performance Class A
  - Trunked & Conventional
- Interoperability with Motorola, L3Harris, Tait/Zetron

Benefits to Public Safety

- Large Controls for use with heavy gloves
- IP68 Ruggedized housing in Black or Optic Yellow
- Long popular BK Technologies cloning capability
- NIST FIPS140 2, Level 2 compliant
- NIFC/DOI approved

https://www.bktechnologies.com/product/bkr-5000-portable-radio/
What is New
- Connect across VHF, UHF and 7-800MHz bands

P25 Interoperability solution
- Conventional Analog and P25 Digital
- P25 Digital Trunking Phase 1 & 2

Benefits to Public Safety
- Multiagency communications and system migration
- Seamless operation to scan and roam across bands
- Easy ordering, flexible deployment - Enable one, two or three bands at the factory, or in the field via WiFi OTAP
- 18 hour shift life in P25 Phase 2 mode
- The lightest P25 multiband portable in the market
What is New

- Class I Division 1 - All Gas Groups A, B, C, D
- Class II Division 1 - Dust Groups F, F, G
- Class III Division 1 - Fibres and Flyings

P25 Interoperability solution

- Conventional Analog and P25 Digital
- P25 Digital Trunking Phase 1 & 2

Benefits to Public Safety

- Tait GeoFencing Automated Workflow
- Choice of colors for easy identification
- Tait Tough IP68, IP65 and MIL-STD-810 G

TP9468 Intrinsically Safe P25 Portable
New Multi-Mode TETRA-P25 Radios

What is New

- Dual-Mode TETRA-P25 selectable through the user menu.
- FCC certified 764-869 MHz (except NPSPAC 806-809/851-854 MHz).

P25 Interoperability solution

- P25 CAP certified for nationwide interoperability channels.
- Fully compliant with requirements set forth in Feb 12, 2018 FCC Report & Order governing 700 MHz band.

Benefits to Public Safety

- Cellphone-like speech quality, background noise cancellation, GPS data, Image App.

http://www.powertrunk.com

August 2022
Project 25 Technology Interest Group
F7010/F7020/F7040 Portable
F7510/F7520/F7540 Mobile

What is New
• Voice log archives with GPS metadata and mapped RSSI analysis with Radio Discovery Tool (RDT)
• Hardware based advanced system key (ASK)
• Enhanced talkgroup scanning (up to 32 talkgroups with user selectable priority modes)
• Receive only talkgroups prevent unauthorized transmissions

P25 Interoperability solution
• VHF, UHF and 700/800 MHz models
• Conventional Analog FM/P25/Mixed-Mode and P25 Phase 1 (FDMA) and Phase 2 (TDMA) trunking
• AES/DES Encryption with Over-the-Air Rekeying

Benefits to Public Safety
• Small lightweight and concealable for surveillance and tactical operations and smaller vehicle installs
• Recorded voice log archives with GPS metadata show when and where voice calls were made and can help identify interference issues
• Diagnostics with mapped RSSI analysis values can show lack of coverage where coverage was expected

L3Harris Two47 P25 Base Station

7/800 MHz P25 Trunking Base Station

WHAT IS NEW

• L3Harris is pleased to introduce a new family of P25 site products that is available in single-site, multi-site, and simulcast configurations.

Open – Endlessly upgradeable to evolve with your operation
Adaptable – Small package with expansive range
Unstoppable – Rugged, resilient and protected around the clock

P25 INTEROPERABILITY SOLUTION

• P25 Trunking solution in 7/800 MHz available to order now
• CAP Certification in-process

BENEFITS TO PUBLIC SAFETY

• Small footprint: saves space, money, and is eco-friendly. Supports up to 10 channels in a single rack including the RF combining equipment
• No single point of failure: industry leading resiliency including:
  • Distributed control points offer four levels of simulcast control point resiliency
  • All channels capable of being the control channel; never reverts to conventional
P25/DMR Multi-Protocol Systems

- Multi-Protocol (Analog, DMR & P25)
- Multi-mode (Analog/Digital) operation
- Fully IP-based distributed network architecture
- Single site, Multi-site conventional & Simulcast solutions
- Compact, Rugged, Small footprint
- Low power consumption
- Hot standby repeater offering
- Powerful remote control & monitoring
- Soft diversity receiver
- Seamless system upgrades (no need to change hardware)
- System redundancy
P25 LMR – LTE InterWorking Function (IWF)

What is New
• Carrier-grade 3GPP to LMR standards-based interoperability platform

P25 Interoperability Solution
• IWF support of DFSI and both Phases of the CSSI and ISSI standards

Benefits to Public Safety
• Seamless communications using standards-based multi-vendor subscribers on 4G LTE/5G and P25 eco-systems

www.etherstack.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

www.etherstack.com
New P25 Vehicle Repeaters

What is New

• New optional GPS Driven Deactivation Feature for Futurecom Vehicle Repeaters (DVR-LX® & VRX1000)
• Automatically deactivates a VR when speed & distant threshold are met.

P25 Interoperability solution

• P25 Coverage extension

Benefits to Public Safety

• Allows first responder to focus on job ahead
• Allows for an active vehicle repeater to be moved around a scene
What is new

- Enhanced GUI for all tactical markets
- **Wide Band Transceiver** – 29.7 – 960 MHz P25 Compliant – Compact
- **Search & Rescue (SAR)**
  - 121.5 MHz AM
  - 243.0 MHz AM
  - 156.8 MHz FM (Channel 16)
  - 156.525 MHz FSK (DSC, Channel 70)
- Seamless relay, simulcast, and relay/simulcast

**P25 Interoperability solution**

- All P25 bands Common Air Interface (CAI), Phase I, II trunking
- 29.7 – 960 MHz Common Air Interface (CAI) AES encryption
- P25 VHF – 6W Min UHF – 5W Min 700/800 MHz – 3W Min

**Benefits to Public Safety**

- Lowest cost of ownership through easily upgradable modular architecture
- Best in class color display and interface
- Most interoperable radio on the market
Avtec Scout Dispatch Console

What is New

P25 Conventional and Trunking Wireless Interface with APX™ Consolette & APX™ Mobile Radios - Group Call, PTT ID, Emergency Call, Zone and Channel Control, Paging & other signaling features
1. Tested and updated with the Department of Defense’s Security Technical Implementation Guides (STIG)
2. Microsoft OS and third party application patches applied each Scout release
3. Nessus scans ran to identify and mitigate vulnerabilities each Scout release
4. Third Party Cyber Security audit once per year to verify security posture

P25 Interoperability Solution

1. Avtec Scout dispatch console connects to P25 via CSSI, DFSI, APX Consolette, or APX Mobile
2. Interoperability with Broadband, DMR, LTE, NENA, Telephony
3. P25 DFSI and CSSI endpoints benefit from the standard Scout console features, in addition to the P25-specific features that Scout supports

Benefits to Public Safety

1. Connect P25 systems to other critical communications technologies for maximum interoperability
2. Dynamic and scalable platform that easily accommodates new and legacy technologies
3. Ideal solution for supporting communication technology migration plans and building a future proof solution
4. Designed, built, and supported in the U.S.

https://www.avtecinc.com
InterTalk Enlite™ Dispatch Console System

What is New

- **Enlite™** is a first-to-market dispatch solution in North America.
- Offers a public-safety-grade dispatch console with industry-standard **on-premises** deployment (Enterprise) or empowered with the **cloud** (Hosted).
- **Enlite™** provides P25 connectivity in the field via mobile-connected devices.

P25 Interoperability solution

- Connect **Enlite™** console to P25 via DFSI or CSSI/ISSI.
- Convergence of analog radio, P25, LTE, call-taking capabilities, and more.
- Allows a user to extend their P25 network over Wifi and LTE.

Benefits To Public Safety

- Empower your P25 system to create seamless communications across multiple devices.
- Utilize P25 **Talkpath Pooling** to reduce the number of required audio talkpath licenses on a system.
- P25 **Resource Sharing** allows dispatchers to share P25 channels connected over DFSI or CSSI between independent InterTalk console systems for interoperability and continuity of operations.

Learn more at InterTalk Booth #1455

www.intertalksystems.com
What is New
IP-3000 series desktop consoles supporting optional P25 CSSI and DFSI connections with AES-256 encryption.

P25 Interoperability Solution
When coupled with IP-224’s and donor control stations, P25 and non-P25 channels can be cross-patched between agencies.

Benefits to Public Safety
Best ROI for P25 solutions and use of public funds.
Remote configuration and management
CommandCentral AXS Console
Dispatching for the Modern World

What is New
- Works the Way You Do with the Next Generation Dispatch Experience
- Retain Your Focus with Cross Platform Integration Capabilities
- Connect to Multiple Communication Platforms Simultaneously
- Experience Pain Free Enhancements

P25 Interoperability solution
- Seamless Multisystem (P25, MOTOTRBO, Analog, Firstnet) Access

Benefits to Public Safety
- Improves Ease of Learning
- Eliminates New User Frustration and Burnout
- Improves Speed and Efficiency
What is New

• Interoperability between P25 land mobile radio systems
  • ASTRO 25 to ASTRO 25, ASTRO 25 to other P25 systems, ASTRO 25 to broadband PTT
• Seamless communication between users on different networks
  • Voice, Location and Messaging

P25 Interoperability Solution

• Critical Connect ISSI First to Achieve P25 CAP Compliance

Benefits to Public Safety

• Easier to Share Information Between Agencies
• Improved Collaboration
• Greater Situational Awareness
What is New

- Demonstrating IntelliLink™ Interworking Solution from Catalyst
- Standards Based Communications between P25 LMR and MCPTT on LTE Networks (FirstNet™, Verizon Push to Talk Responder, Southern Linc, etc.)
- Based on the MCPTT Standard, not “almost mission critical” as are existing LTE PTT solutions

P25 Interoperability Solution

- Provides Interworking Communications between P25 subscribers on LMR Radios and Smartphone users with MCPTT Application

Benefits to Public Safety

Standards based solution for Critical Communications
- Enables transition to MCPTT on LTE for current P25 Systems

P25 LMR LTE Interworking Solution

www.catcomtec.com
Booth 560 at APCO 2022
DFSI Gateway

What is New

General Features
- DFSI v1 and v2 compatibility
- Channel Change
- Repeat On/Off
- Monitor (Squelch Bypass)
- Voter receiver and transmitter selected/enabled/disabled status and control

Digital Features
- Full-Rate AMBE voice encode/decode
- Group Calling
- Individual Calling
- Emergency Calling and Alarming
- Radio Check, Stun, Revive, Remote Listen, Call Alert, Status Querying, Status Messaging
- NAC Control
- DES/AES Encryption
- RX/TX Level Settings
- RX EQ

Analog Features
- MDC-1200 Emergency alarm decode
- MDC-1200 ID encode/decode
- CTCSS/CDCSS control
- RX/TX Level Settings
- RX EQ

P25 Interoperability solution
- Patch traffic between different base stations at talk-group level.
- Patch P25 base station with numerous other technologies when paired with the Mindshare Radio Interface (MRI)

Benefits to Public Safety
- Migrates legacy analog infrastructure to P25
- Single gateway supports multi-vendor stations via DFSI standard
- Lower cost with more features than previous offering

www.css-mindshare.com

Booth # 733
P25 Digital and Analog Mixed-Mode Public Safety Systems from Zetron a Codan Company

What is New

- Share regional LMR systems across multiple agencies, all with different requirements, but within the same jurisdiction
- Support Fire, Police and EMS using the same infrastructure
- Add coverage on-the-go using transportable extensions

P25 Interoperability solution

- Each agency allowed use their preferred manufacturer’s subscribers
- Support for P25 Standard interfaces to third-party applications and technology

Benefits to Public Safety

- Provides reliable, secure, always-on communications
- Built to support any agency’s mission in any environment
Zetron LMR

What is New

• MT-5 Subrack, planned for release late 2022
• MT-5 Service Module, planned with subrack release
• MT-4Z VHF Receiver, releasing March 2022

P25 Interoperability Solution

• Improved DFSI integration with Zetron C&C

Benefits to Public Safety

• More complete and scalable end-to-end LMR solutions to enabled First Responders and Dispatchers to Be Heard
NEW: Armada Server for Viking P25 public safety radios

- Allows multiple radio managers to share a common, central database.
- Offline mode allows radio managers to make updates that are synchronized when returning on-line.

Viking Armada Server

Distributed Programming Capability for Fleet Management

www.EFJohnson.com
What is New

• Offering industry leading bandwidth our most popular Tri-band Flexi-Whip™ is now available with GPS capability as well as a new magnetic mount option

P25 Interoperability Solution

• Seamless antenna connectivity to your P25 LMR providing reliable interoperability

Benefits to Public Safety

• Rugged Flexi-Whip™ mast bends not breaks under impact
• Covert OEM style design won’t blow your cover
• 100 watt capability offers extraordinary connectivity
What is New

- Additional Auto-Test support for Harris and Motorola P25 radios
- Kenwood Viking and Tait P25 radios added to the Auto-Test family

P25 Interoperability solution

- Phase 2 support
- Infrastructure testing with Wideband RF Power Sensor

Benefits to Public Safety

- Ensure indoor and outdoor RF signal coverage with signal strength mapping solutions
- Portable RF testing of P25 subscribers and infrastructure

8800SX Radio Test Set

CX300 Communications Service Monitor

What is New

• Complete communications test solution

P25 Interoperability solution

• Ability to test P25 Phase 1 and Phase 2, including Linear Simulcast Modulation

Benefits to Public Safety

• Complete and portable RF testing of P25 subscribers and infrastructure

R8200 New LMR Service Monitor with VNA

What is New

- Single Port Vector Network Analyzer: The only LMR test set to include a VNA
- Includes multiple general use options
  - Remote Front Panel
  - Extended Gen Port Output
  - Process Automation Toolkit (“PAT”)

P25 Interoperability solution

- P25 Phase 1 Conventional Test Option
- P25 Phase 1 Trunking Test Option
- P25 Phase 2 Test Option

Benefits to Public Safety

- Perform comprehensive subscriber and network testing with a single instrument
- Save space by combining multiple instruments into one portable device

www.astronics.com/lmr
Network Monitoring and In-Building Network Testing

https://www.pctel.com/ptig

What is New

• **SeeHawk™ Monitor** – Spectrum Monitoring and Uplink Testing Solution

• **Public Safety Network Testing Solution** – Uplink testing & in-building network commissioning test enhancements

• **SeeHawk™ Central** – Cloud reporting and automation platform for grid-based in-building critical communications network testing

P25 Interoperability solution

• In-building coverage and commissioning tests and automated reporting based on FCC, NFPA, IFC, and local regulations

• Automated spectrum monitoring

Benefits to Public Safety

• Verify indoor critical communications coverage

• Quickly identify interference throughout the network
Valid8 P25 ISSI/CSSI Test Solution

What is New

• Passive Conformance – New!
  • Verify compliance of equipment on the network without disconnecting anything
  • Online (live) mode works via a network tap point
  • Offline mode works by analyzing a PCAP file, isolating the DUT and reporting the test result

• P25 Security Test Suite – New!
  • Security test Consoles or RFSSs on CSSI and ISSI

P25 Interoperability Solution

• Use Valid8’s Pre-Canned Test Scenarios to Ensure Interoperability with Other Vendor Devices

Benefits to Public Safety

• Real World Testing with Multiple form factors
• Flexibility to Customize Test Scenarios
• Upgradable to MCX, NG911, P25 Cyber-Security Testing Suites

https://www.valid8.com/solutions-for/test-mcx
PX-900 Portable Instrument
for P25 Trunk, P25 Conventional, and FM Analogue/P25 Conventional Radio Systems

What is New
• The PX-900 is a portable self-calibrating radio waveform analyzer that enables agencies to identify radios in need of service while in the field.

P25 Interoperability Solution
• Trunk or Conventional
• VHF; UHF; 700/800 MHz (uplink frequencies only); and 900 MHz

Benefits to Public Safety
• The PX-900 measures a radio’s alignment and operating characteristics long-range, over-the-air (OTA), in real-time, without user intervention.
• Generates reports identifying radios requiring service and validates other radios operating within specification
• A proactive radio maintenance tool that assures operational readiness

Visit LocusUSA at Booth 203 to learn more
https://www.locususa.com/products/diagnostx/
Virtual ISSI/CSSI Interoperability Testing
Compliance Testing LLC

What is New: Virtual ISSI/CSSI Interoperability Testing

• “Virtual ISSI/CSSI Interoperability Field Testing”
  • For both LMR Mfr. and/or End User Systems
  • Testing at remote locations or “Virtual”
  • Accredited by ANAB, DHS & P25CAP as a “recognized test lab”

• “Virtual ISSI/CSSI Product Development and Pre-Scan”
  • Remote connection to any ISSI/CSSI
  • CTL Engineer supported or not supported
  • 24/7 access to our FNE for troubleshooting
  • “Try before you test”
  • CTL Test Engineer directs, observes, and records all test results via VPN & Microsoft Teams
  • Detailed test reports produced to complete SDOC & STR

P25 Interoperability solution
• ISSI & CSSI equipment listed on DHS Grant Eligible list

Benefits to Public Safety
• Procurement - Assurance of ISSI/CSSI P25CAP compliance
• Field Testing – Compliance of Agency-owned ISSI/CSSI

Chris Lougee
LMR Industry Business Development
Compliance Testing LLC
1724 S. Nevada Way Mesa, AZ 85204
206-790-0790 Cell
ChrisL@compliancetesting.com
www.ComplianceTesting.com
P25 Enhanced Vocoder Software

What is New

- AMBE+2™ Rate Converter
- Licensing for standard and custom processors
- Licensing for OS’s

P25 Interoperability Solution

- Enhanced Dual-Rate Vocoder
- Parametric Rate Converter

Benefits to Public Safety

- Meets latest P25 requirements for voice quality
- Universal standard for interoperability and assured quality
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P25 New Product Trends

• **P25 LMR Interoperability with LTE Broadband Data**
  o Multi mode P25/LTE Portable radios
  o Mobile P25 radio with Wi-Fi and LTE connectivity
  o New P25 Consoles connect P25 and LTE technologies

• **Multi-Band P25 Portable Radios (VHF/UHF/700/800 MHz)**
  New products are P25 Phase 1 and Phase 2 capable

• **Voice recording in radios**

• **Scalable, Configurable P25 Airborne Radios**
P25 New Product Trends

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