Push-to-Talk Ecosystem: Evaluating Standards

and Reviewing What's New

Project 25 Updates









IWCE 2020 - Session VT23

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P25 Update Topics

- P25 Overview
- P25 Market Trends
- P25 and Broadband PTT Challenges
- P25 Resources



P25 Overview

TECHNOLOGY

Designed primarily for "mission critical" environments

Utilizes typical LMR network architecture

Supports conventional and trunked network deployments

Supports multicast, simulcast, conventional, & hybrid system deployments

Supports direct (unit to unit) comms in analog or P25 modes

STANDARDS

Defined in TIA 102 series documents

Frequency agnostic

Phase 1 (FDMA) = 1 talk path per RF channel

Phase 2 (TDMA) = 2 talk paths per RF channel

Evolving standard that continues to be updated

KEY INTERFACES & TESTING

Common Air Interface (CAI)

Inter-RF Subsystem Interface (ISSI)

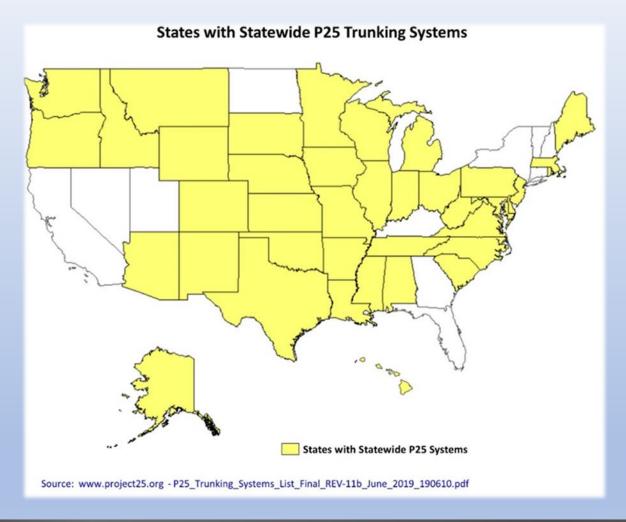
Console Subsystem Interface (CSSI)

Project 25 Compliance Assessment Program (P25 CAP)

CAP testing performed at certified labs



P25 Systems



Worldwide

- P25 Trunking Systems: 1017
 - > P25 Phase 1: 653 systems
 - > P25 Phase 2: 364 systems
- Conventional P25 systems: 1816

Source: http://www.project25.org

Notes:

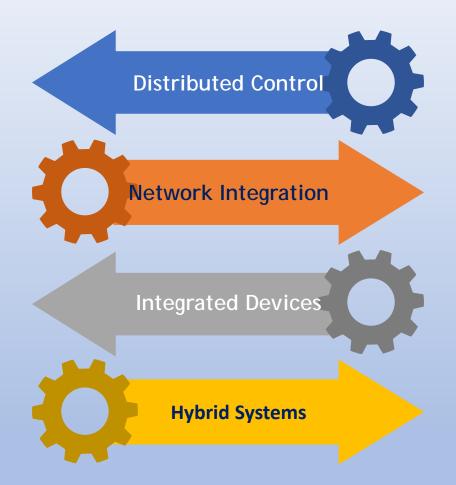
- Trunked system counts as of June 2019
- Conventional system counts as of March 2020



P25 - Trends in the Market

Move from P25-to-P25 networking to interfaces with other systems, via ISSI:

- PTToC Carrier Integrated and Over the top
- PTToBB Wi-Fi and CBRS



Virtual server/controller architecture

- Simplifies system expansions
- Increases application redundancy
- Enhances system resiliency

Wi-Fi and/or LTE enabled P25 radios

- Coverage enhancement
- Programming updates



P25 and Broadband PTT Challenges

- Direct mode or Proximity Services (ProSe) limits
- Interoperability among carriers
- Interoperability among over the top (OTT) providers
- Managing operations across multiple networks
- Coverage, availability, security, reliability

- January 2020, NIST issued funding, in excess of \$6M, to three firms for Public Safety Innovation Accelerator Program: Mission Critical Voice Test Equipment (PSIAP-MCVTE)
 - ➤ Supports R&D for standardized MCPTT, MCVideo, & MCData test cases



P25 Resources

- Project 25 Technology Interest Group (PTIG)
 - > www.project25.org
- P25 CAP
 - www.dhs.gov/science-and-technology/p25-cap
- P25 CAP Compliant Equipment
 - https://www.dhs.gov/science-and-technology/approved
 - grant-eligible-equipment



Thank You!

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