Project 25 Technology Interest Group Panel

P25 Console Choice via the CSSI

Stephen Nichols, director PTIG

August 16, 2015

Agenda

- **Introduction and Overview**

  Stephen Nichols, Executive Director, (PTIG)
- **Lancaster County P25 System Case Study**

  Randy Richmond, Standards and Regulatory Specialist, (Zetron)

  Tim Baldwin, Deputy Director, (Lancaster County)
- **State of Oregon P25 System Case Study**

  Larry Hicks, VP Engineering, (Pantel)

  Ron Postma, Console Implementation Manager, (Oregon DoT)
- **P25 Console Interface Federal Agency Special Application**

  Robin Grier, President, (Catalyst)
- **Question and Answer Period**

Who is the Project 25 Technology Interest Group?

- **P25 Product and Service providers, P25 Users/System Operators, P25 Consultants. All members are supporters of Project 25 technology, nurturing Project 25's adoption, growth, and expansion.**

- **What do we do:**
  - Manage education and training on Project 25
  - Create and distribute Project 25 information.
  - Offer Users access to the standards process without the rigor of TIA membership
  - Maintain a "neutral ground" among the competing manufacturers and providers

  Set your browser to **www.project25.org**

Resources Available: www.Project25.org

- **P25 Frequently Asked Questions**

  Written to dispatcher, officer, firefighter (non technologist) level

- **P25 Capability Guide**

  List of Project 25 Capabilities (features) covered by the Standard

- **P25 Standards Update Summary**

  Summary of the latest P25 Standards Meetings with user benefits defined

- **P25 Feature Translator**

  link to NPSTC PAM tool

- **Project 25 List of Systems: P25 Phase1, P25 Phase2**

  Organized by State with frequency band info

Stay Connected at APCO 2015

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PTIG Panel

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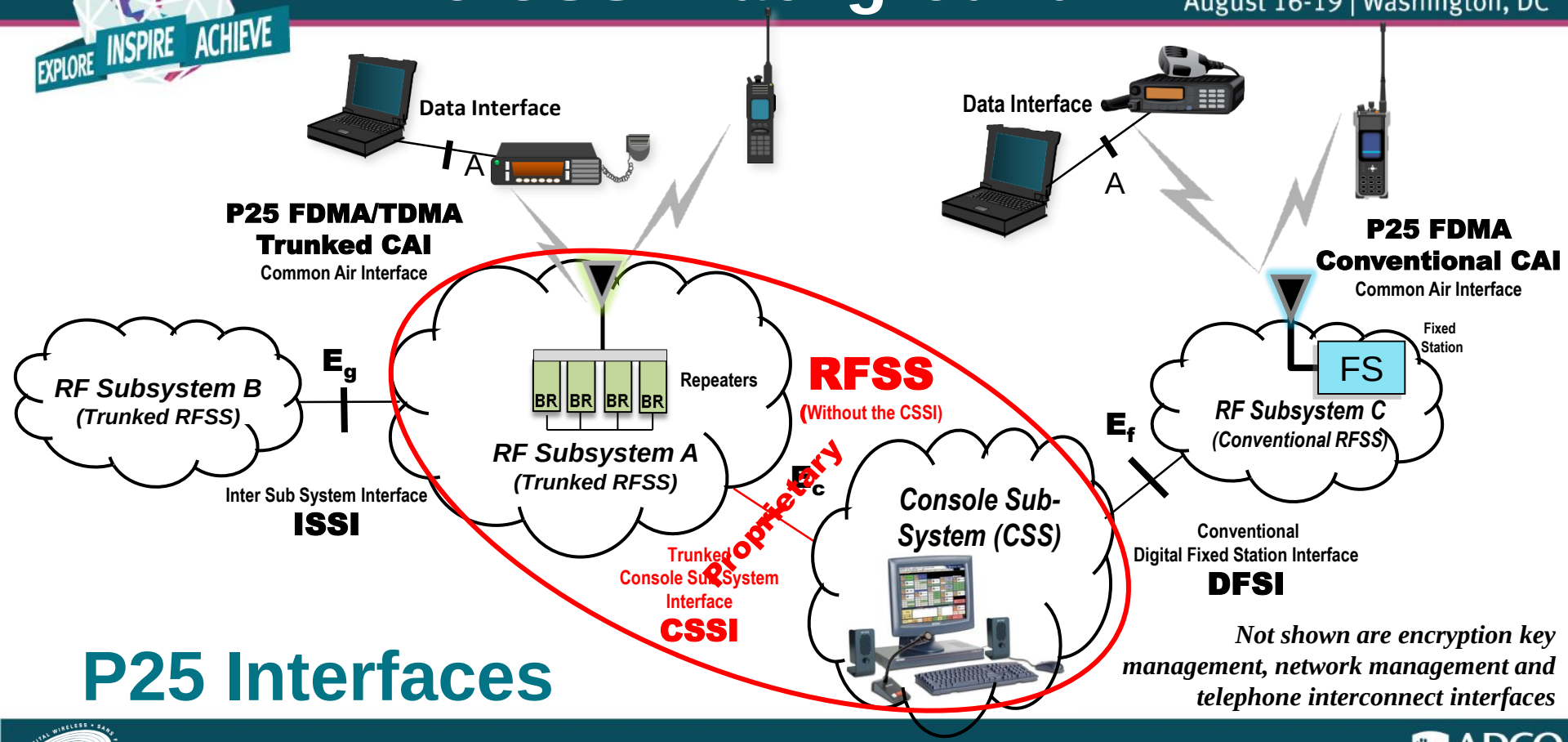
Randy Richmond, Zetron
Tim Baldwin, Lancaster County PA

August 16, 2015

P25 CSSI Background



P25 Interfaces

Not shown are encryption key management, network management and telephone interconnect interfaces

Status of the P25 CSSI Standard

- The Console Subsystem Interface (CSSI) is an open-standard console interface to P25 trunking systems designed to meet the requirements of the P25 Statement of Requirements (SOR) section 2.6.
- The CSSI was first published in 2007 in support of P25 Phase 1 (FDMA) systems.
- The CSSI was updated in 2012 to support P25 Phase 2 (TDMA) systems. The current document is TIA 102.BACA-B.
- TIA engineering committee TR8.19 is working on an enhancement to add support for Dynamic Regrouping.

PTIG CSSI Resources

- P25 Statement of Requirements (SOR), showing what console capabilities user agencies feel are important.
- The P25 Capabilities Guide, showing what P25 features are supported by the CSSI.
- FAQ Guide answering some questions about the CSSI.
- Press releases about partnerships & installations.
- Videos of the CSSI Interoperability Demo from IWCE 2013 (Motorola, Cassidian/Airbus, Harris, Tait, Daniels/Codan interfaced to Zetron, Avtec, Catalyst and Pantel)

P25 CSSI Testing

- The DHS Compliance Assessment Program (CAP) does not yet include the CSSI. The CAP intends to include the CSSI in the future.
- Both trunking system manufacturers and console system manufacturers are performing tests among themselves to ensure interoperability.

Zetron's P25 Console

- ACOM (available in TDM or IP-based core)
- Supports multiple simultaneous CSSI & DFSI interfaces.
- Tested with Motorola (7.13+), Harris, Airbus, Tait, EFJ, Codan.
- Also supports interfaces to TETRA, DMR, NXDN, SNSZ, OpenSky, EDACs, TRC, MDC-1200

Over 3 million CSSI hours in the field

Lancaster County Quick Facts

- Population: 526,823
- Area: 984 sq. miles.
- 60 Municipalities:
  - 41 Townships.
  - 18 Boroughs.
  - Lancaster City.

P25 Phase 1 System Users

One county PSAP dispatches the following :

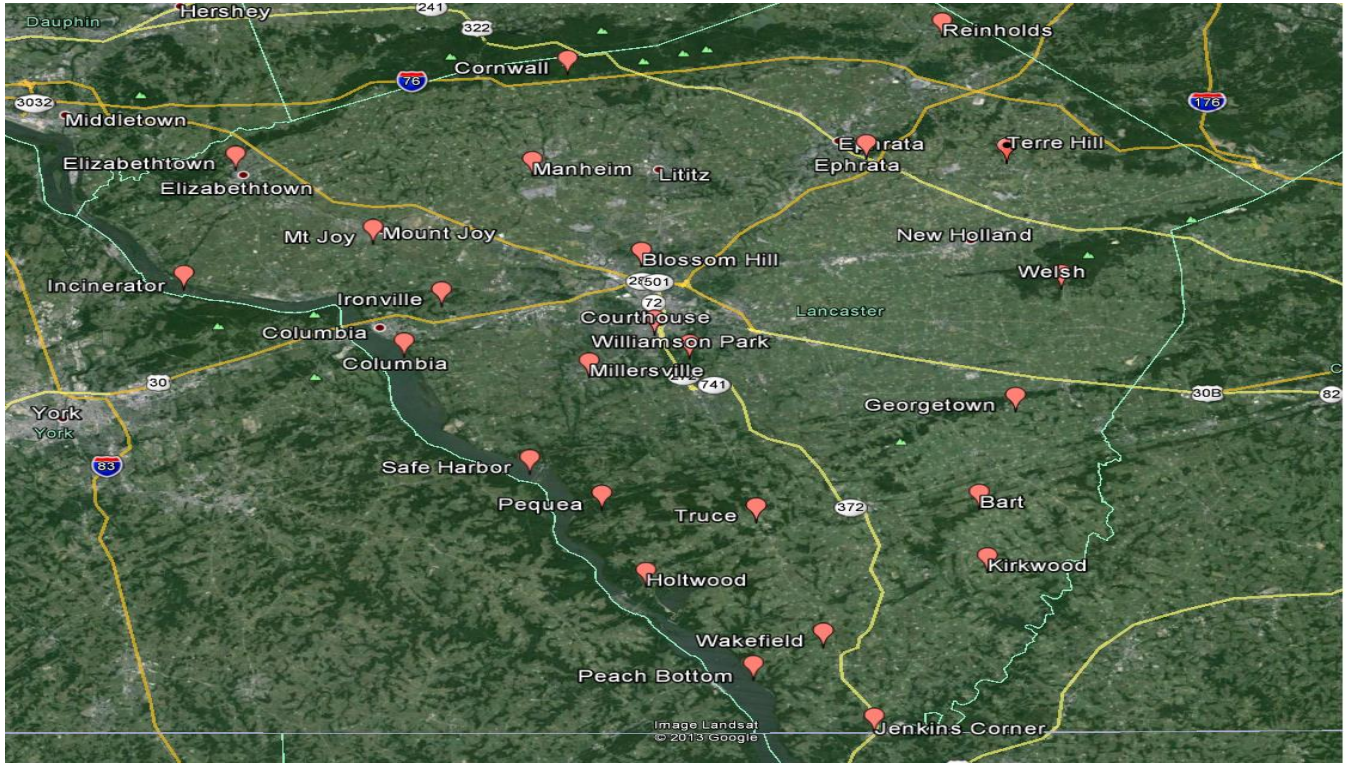
- 21 Emergency Medical Service Units
- 73 Fire Departments
- 32 County/City Law Enforcement Agencies
- Misc. County Agencies
- 60 Municipalities (20 on system
- ✓ Over 5,000 users on system

P25 Phase 1 Radio System Overview

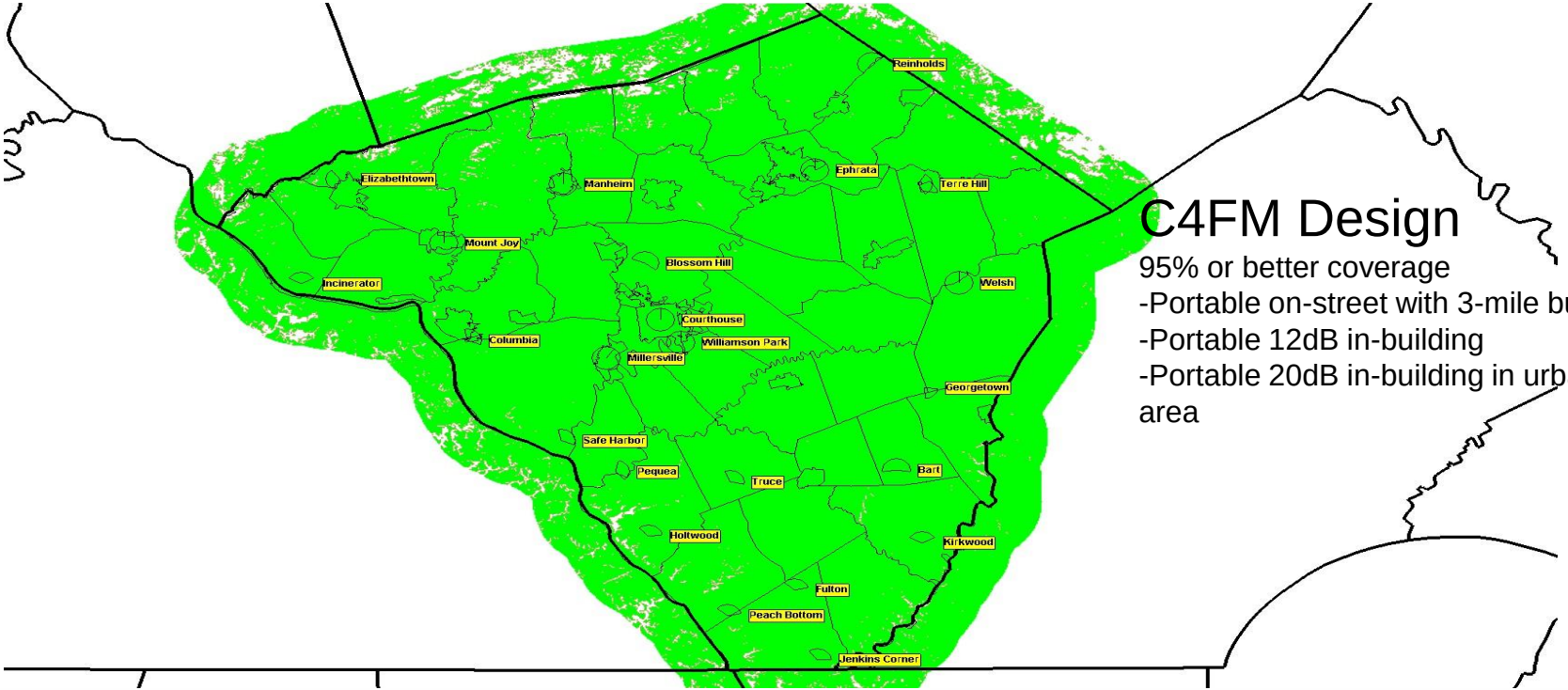
County Requirements

- **Portable Coverage**
  - 12db in-building county-wide
  - 20 db in-building Lancaster City (Urban Buffer Zone)
- **Radios (Relm, Motorola, and Thales)**
  - Non-proprietary system
  - Radios allowed on the system were discussed, tested, and approved by Radio Project Committee
  - Pyramid Repeaters
- **Testing Requirements** Include but not limited to:
    - Noise
    - Coverage
    - Voice Quality

Radio Towers



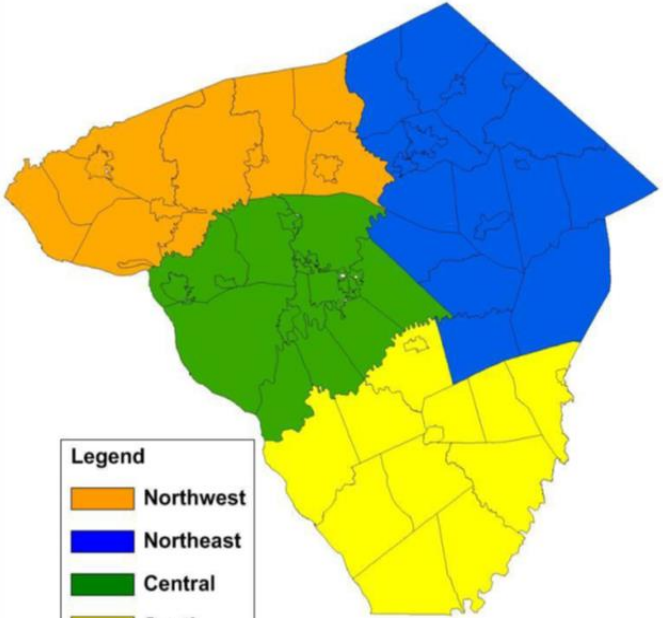
Portable On-Street Coverage



C4FM Design

95% or better coverage
-Portable on-street with 3-mile buffer
-Portable 12dB in-building
-Portable 20dB in-building in urban area

Lancaster County Simulcast Radio Zones



Overlapping coverage not shown for clarity.
Zone boundaries are approximate.
This is not a coverage map.

P25 Phase 1 Radio Console RFP Requirements

- RFP Wording
  - Existing VHF lo-band and hi-band conventional analog system to remain operational during transition
  - Options to upgrade, or replace, existing Zetron ACOM console
  - Location of primary and secondary PSAPs
  - Desired console functionality and reliability

- Review Team Concerns
  - Commitment to P-25 standards
  - ISSI/CSSI connectivity

Benefits of Console Sub-System Interface (CSSI)

- New software version changes do necessarily require console hardware changes (backroom or PSAP)
- Changes have less impact on staff because GUI is familiar (transition is fast), which yields very little re-training cost
- Allows integration of consoles, radio systems, and different components such as recording systems.
- Available interoperability with CSSI-capable adjacent county PSAPs
- Allows multi-vendor competition for console requirements
- Allows different consoles (console of choice) at different PSAPs under a single P25 network covering a large geographical area

Lessons Learned

- Periodically review project contract
- Intermingling various manufacturer's radios
- Importance of fleetmaps with multiple agencies
- Code plug development
- System component software upgrades

Stay Connected at APCO 2015

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PTIG Panel: P25 Console Choice using the CSSI

THE REALIZATION OF P25 IN OREGON

Ron Postma, Console Implementation Manager - Oregon DoT

Larry Hicks, VP Engineering – Pantel

15 August, 2015

The Realization of P25 in Oregon

This session will outline how the State of Oregon Dept. of Transportation (DOT) and Oregon State Police (OSP) have benefited from the P25 Console Interface (CSSI) between Pantel's InterTalk™ console and the Harris P25 State Radio System.

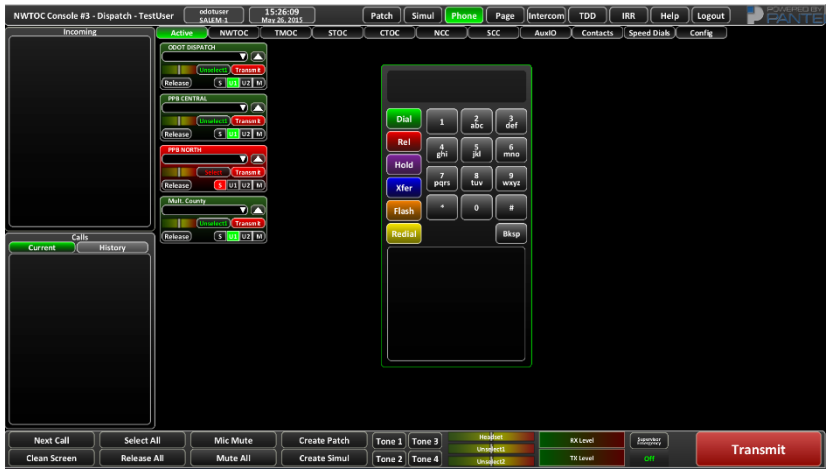
Motivations

- The State has purchased a P25 Trunking system but their console did not meet requirements
- The pre-existing console systems were beyond or were approaching the end of useful life and did not support P25
- Telephone integration was mandatory
- Operationally it was desired to have the six communications centers back up each other and provide for Disaster Recovery

ODOT InterTalk Console System

- InterTalk provides extensive telephony integration with the radio system
  - System failover design provides routing between sites
- ODOT users had direct input into the design of the GUI
  - Pantel specializes in tailored interfaces to meet exact operational needs
- Overall system design different from original concept
  - Pantel's expertise in console system design ensured completeness of console system integration

ODOT InterTalk Console System



Discussion Topics

- Why the need for multiple vendors?
- Working with multiple vendors
- Benefits realized by the State because of the CSSI

Why the need for multiple vendors?

- Recognition of gap between radio vendor console and State's needs
- Leveraging the existence of the CSSI standard
- Capitalizing on the expertise of Pantel with console systems

Working with multiple vendors

- Some trepidation about working together – Vendor's Workshop
- Open communications – bi-weekly conference calls between radio and console vendors
- Clear and precise documentation – understanding the standards

Benefits realized by the State

- Capitalizing on the expertise of Pantel with console systems
  - Input into system design and operation
  - Knowledge that “experts” are available to address console-specific issues within the context of the overall SRP
  - Pantel’s flexibility and speed
- Synergy
  - Having both a radio and console perspective

For More Information

- For information on the State Radio Project, including the console system
  - http://www.oregon.gov/ODOT/HWY/StateRadioProject/pages/index.aspx
- For information on Pantel and InterTalk console systems
  - www.pantelintl.com
  - info@pantelintl.com

PTIG Panel

P25 Console Choice via the CSSI

Innovating with the Standard

Robin Grier, Catalyst

August 16, 2015

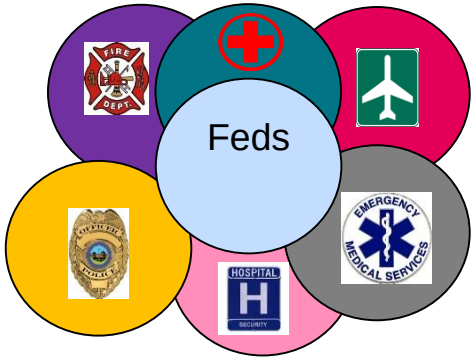
Providing Alternatives

catalyst communications technologies

- Standards
  - P25
  - Internet Protocol
  - Processing Hardware
- Managing Digital Radio Systems
- Interoperability
- Evolution

Federal Agency Needs Mutual Aid Capability

- Multiple Surrounding Agencies
- Roam onto Legacy Radio Systems
- Legacy 800 MHz Trunking, Conventional UHF, VHF
- Federal Agency is Upgrading to P25
- Legacy Console Cannot Meet Requirements

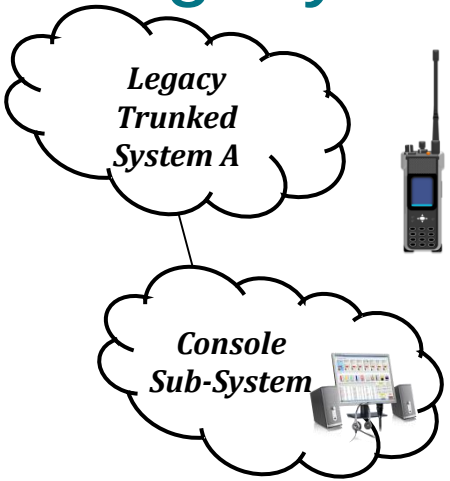


Solution: CSSI/ISSI & Innovation

- Make Legacy Calls Look Like P25 Calls to the P25 Radio System
- Use Standard P25 Interfaces Between Radio Systems
- Enhances Communications
- Frequency Agnostic

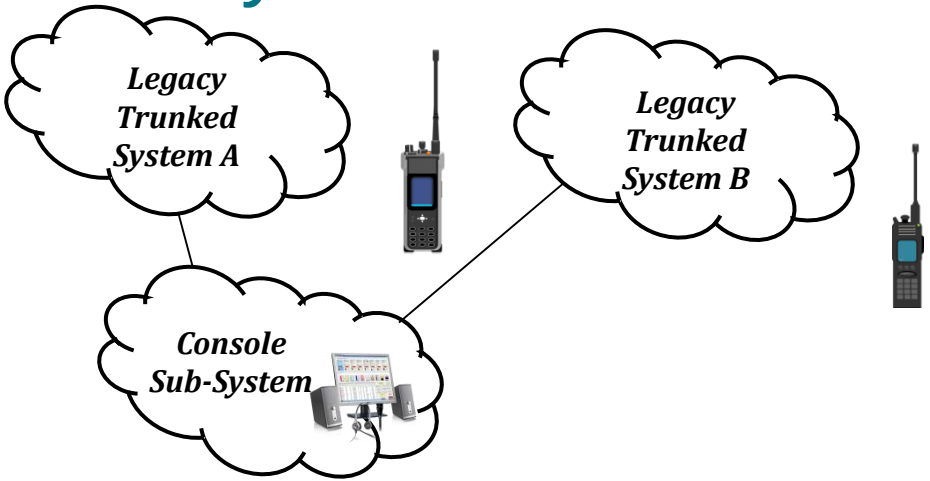
Intelligent Interface to Legacy Radio System

- Talk Group Selection
- Unit ID
- Emergency
- Call Flow Management
- Etc.



Multiple Legacy Trunked Systems

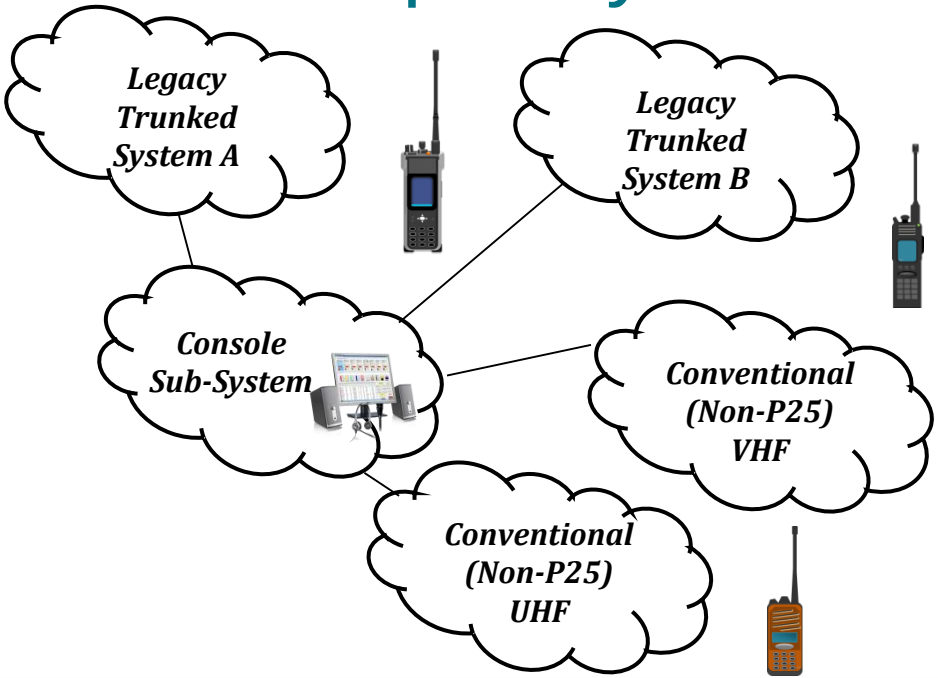
Single Console System Manages Multiple Agencies on Different Trunking Systems



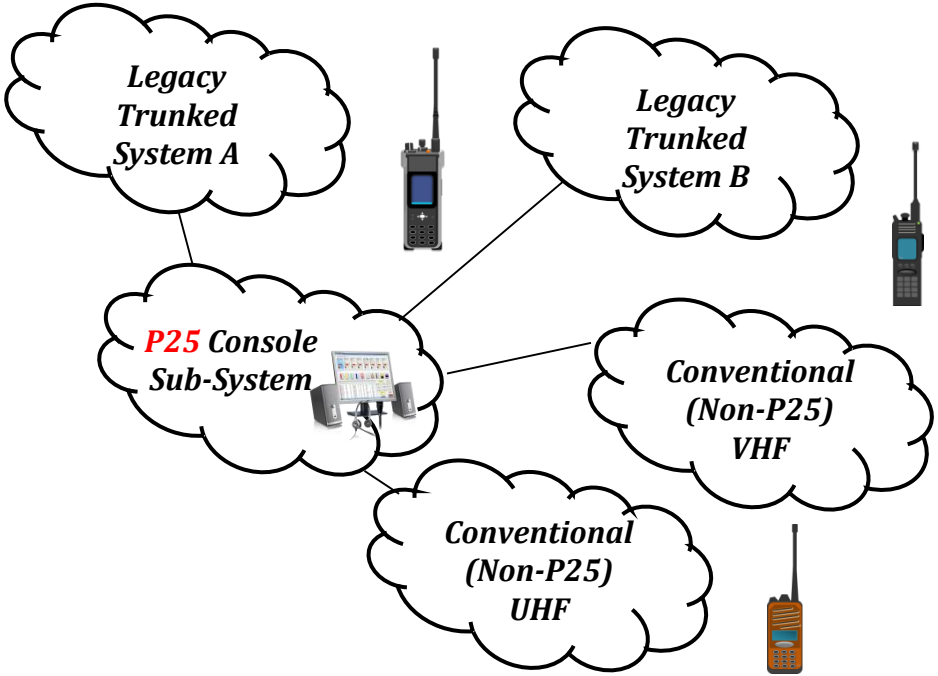
And Multiple Conventional Frequency Bands

Channel Selection
Legacy Signaling

- Unit ID
- Emergency
- Etc.

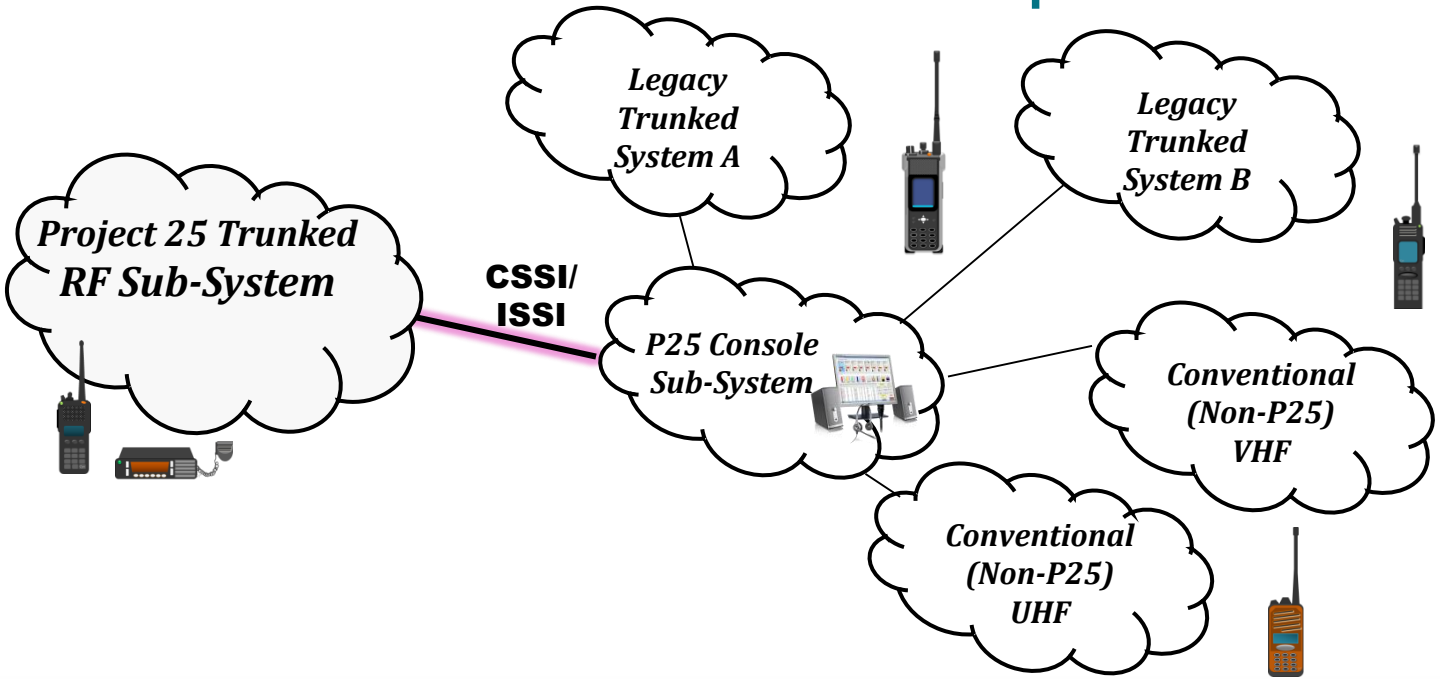


Managed With a P25 Console



That Connects to P25 Trunked Repeaters

…with a Standard Wireline Interface

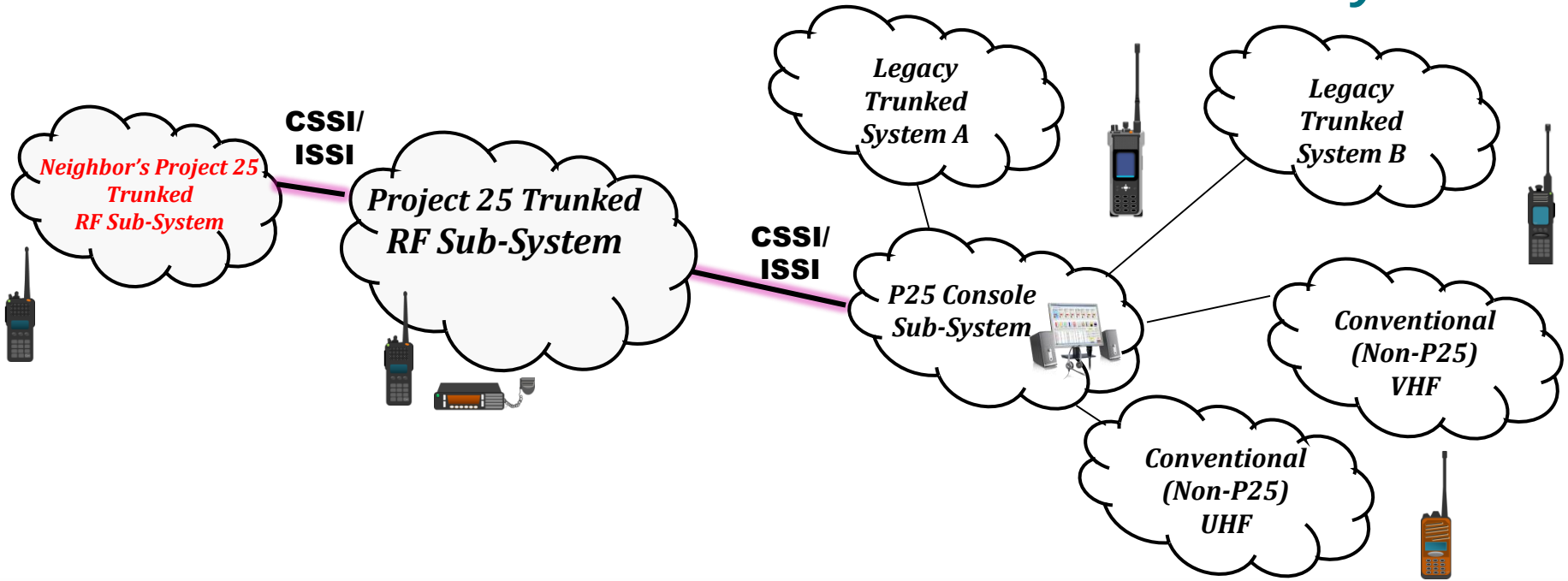


Benefits

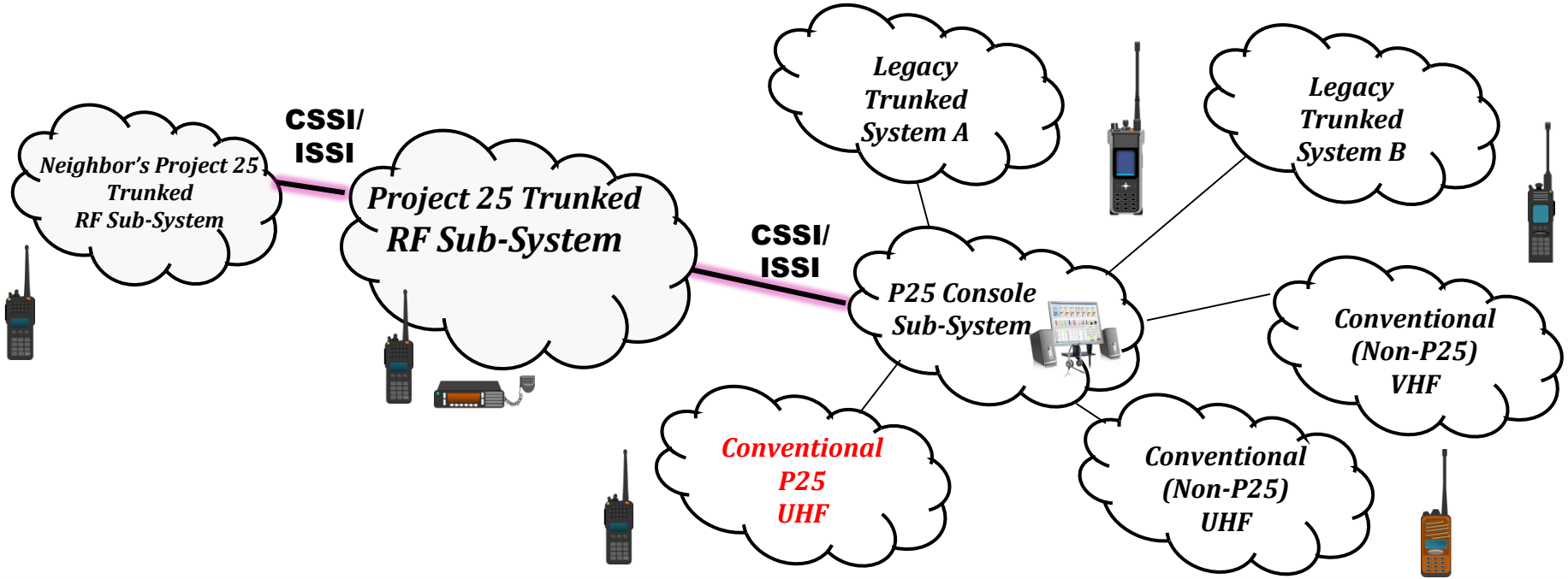
- Provides a Common Platform for managing all radio Traffic
- Presents Information in a Common Format
- Creates Call Records and Audio Recordings in a Common Format
- Enables Competitive Growth of P25 Network

Gives Customer the Choice

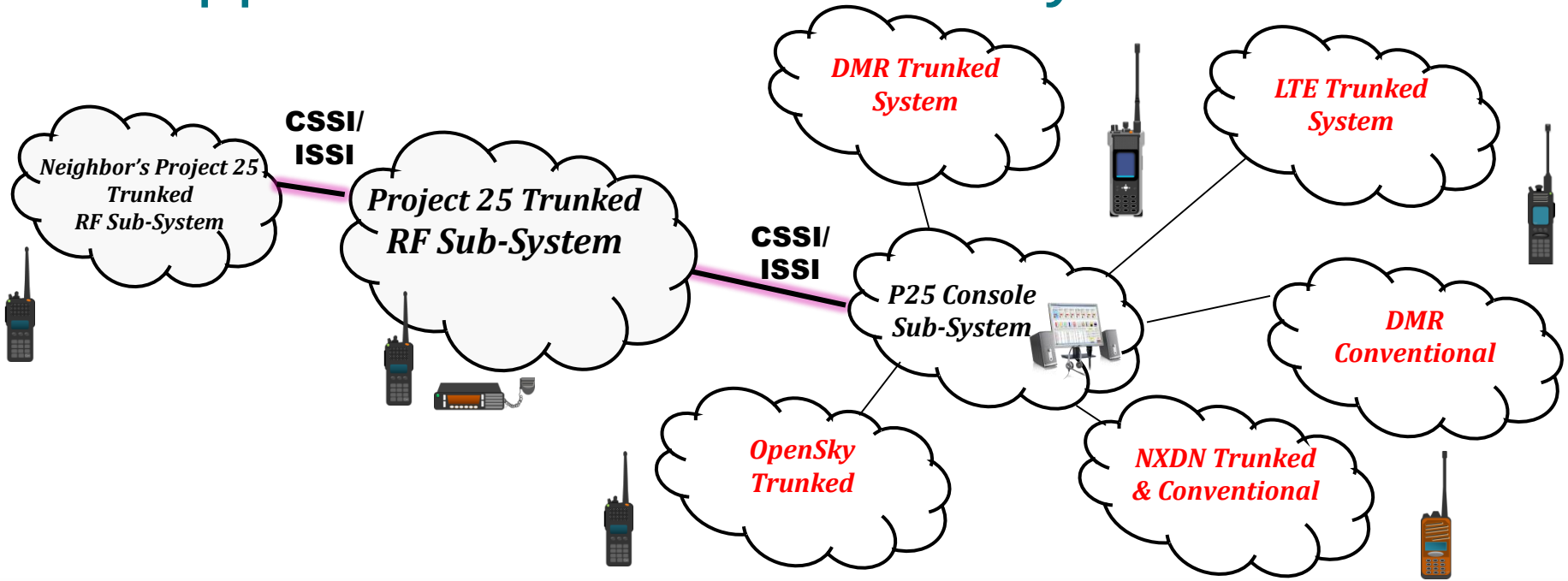
Standard Interface to Additional P25 Systems



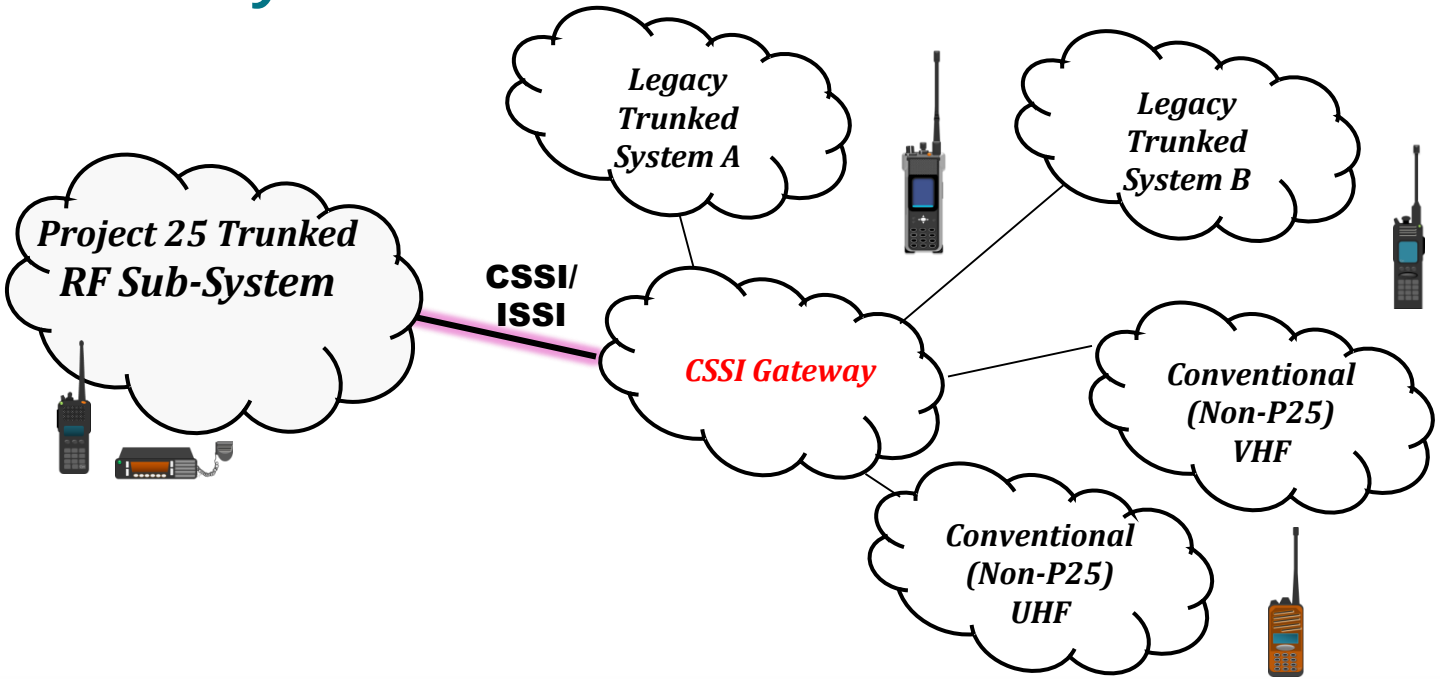
And P25 Conventional Talk Around



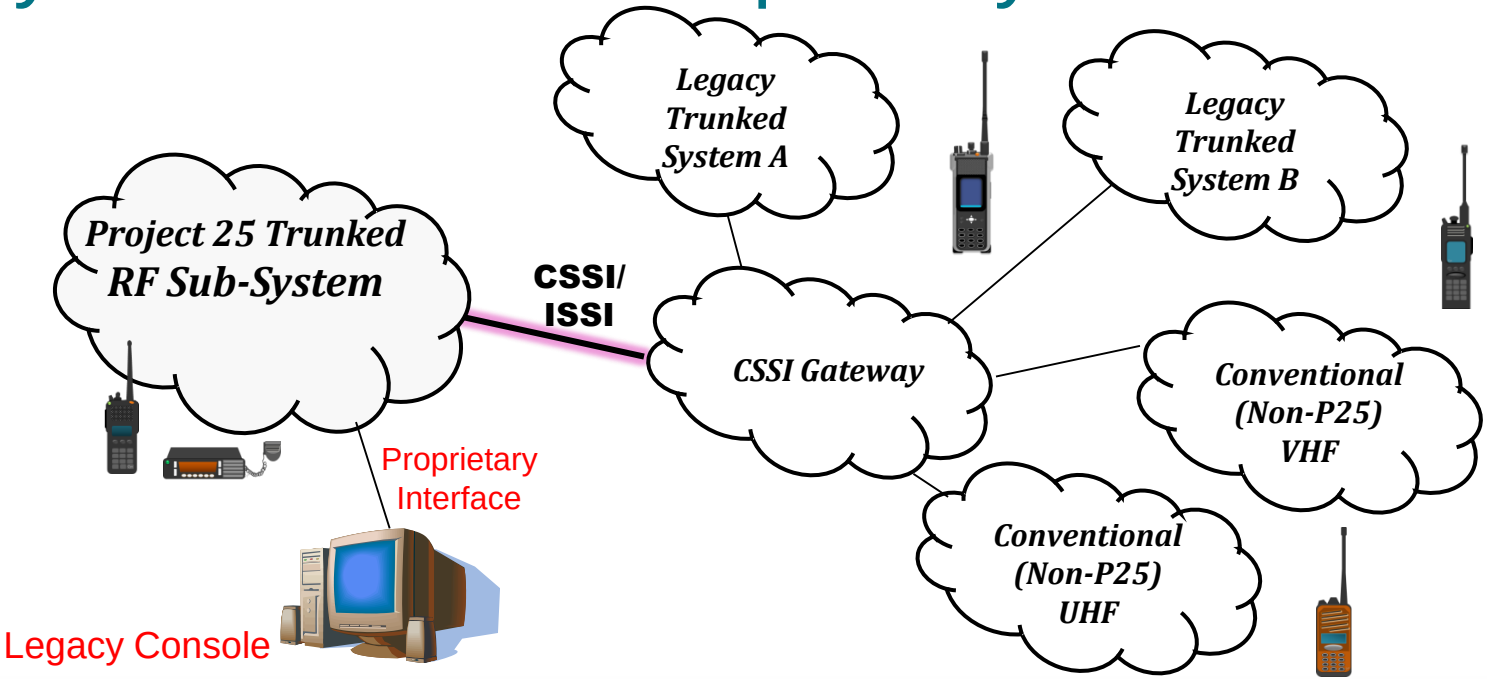
Supports Alternative Radio Systems



Interoperability Without a CSSI Console

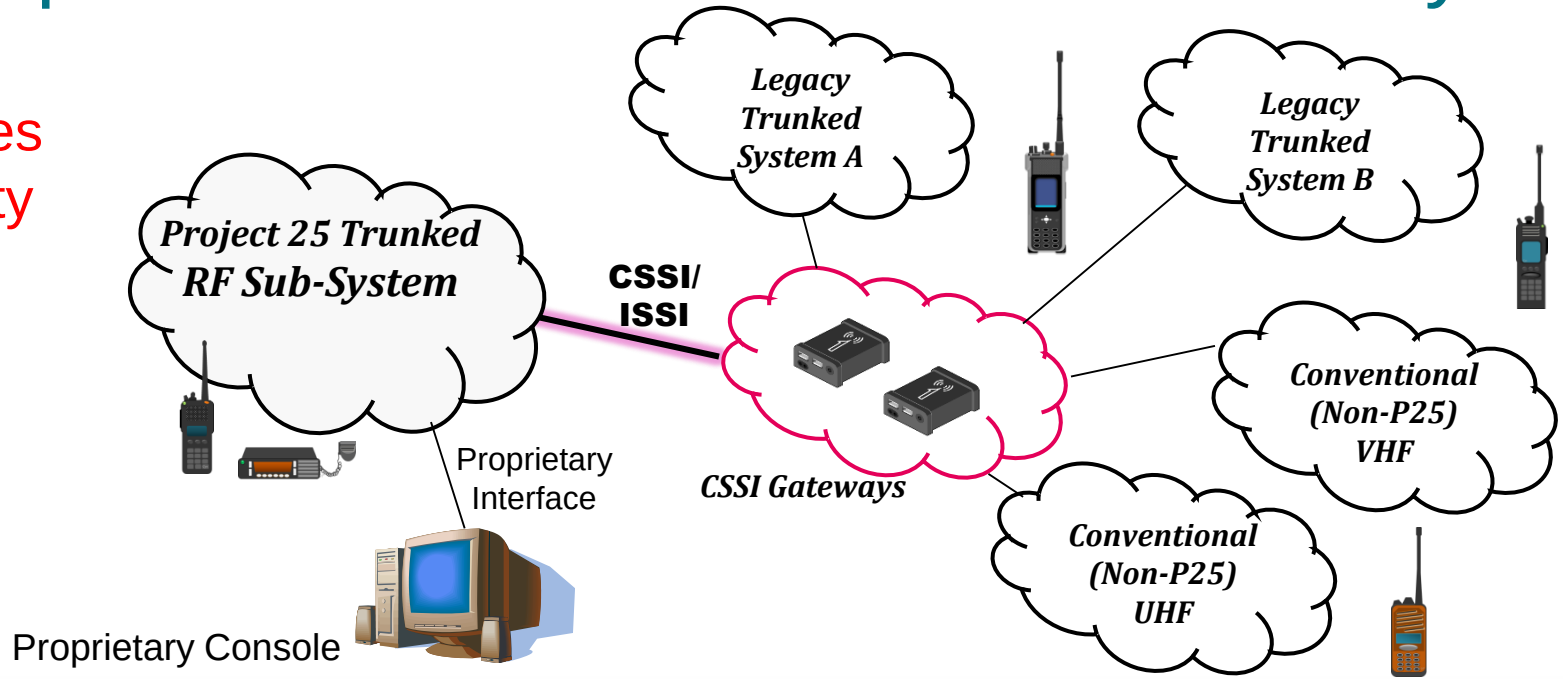


Legacy Console via a Proprietary Interface



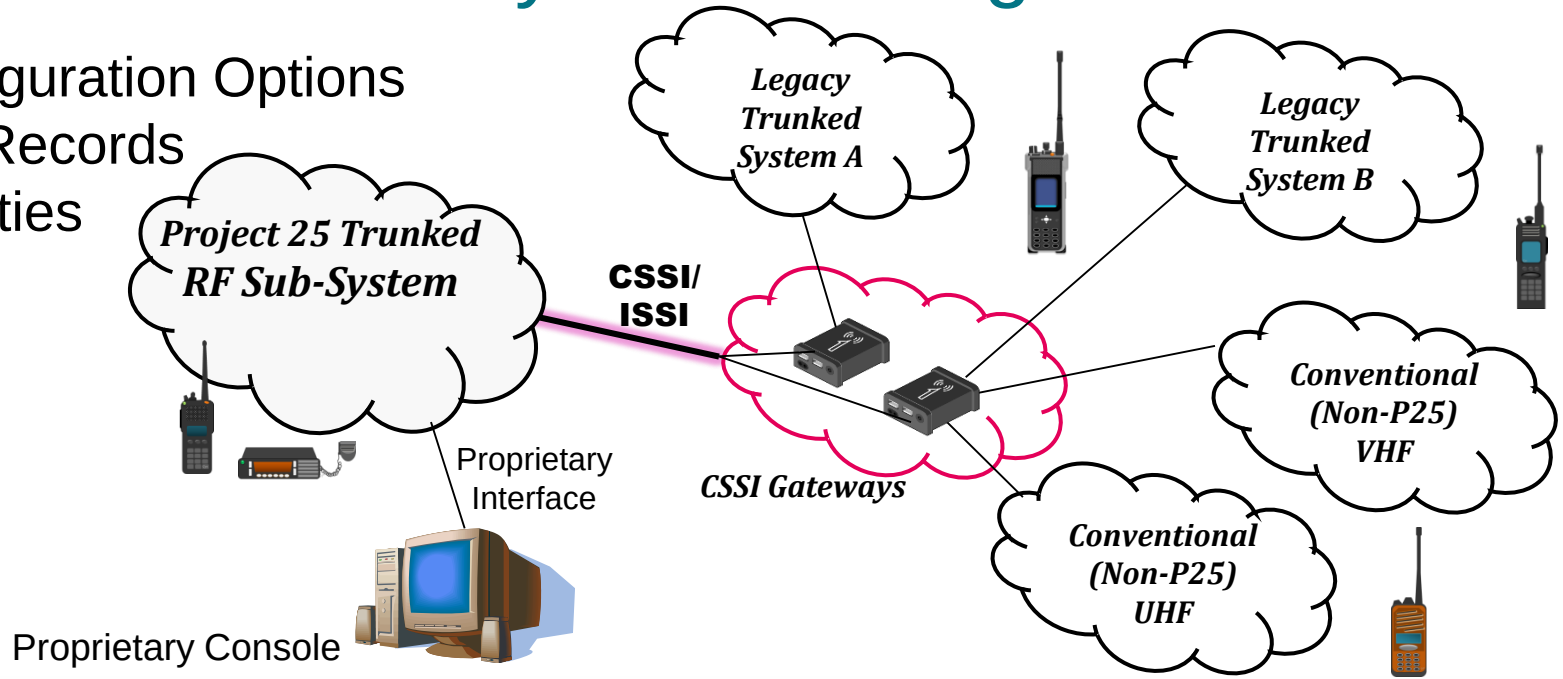
Multiple Hardware Units for CSSI Gateway

Enhances Reliability

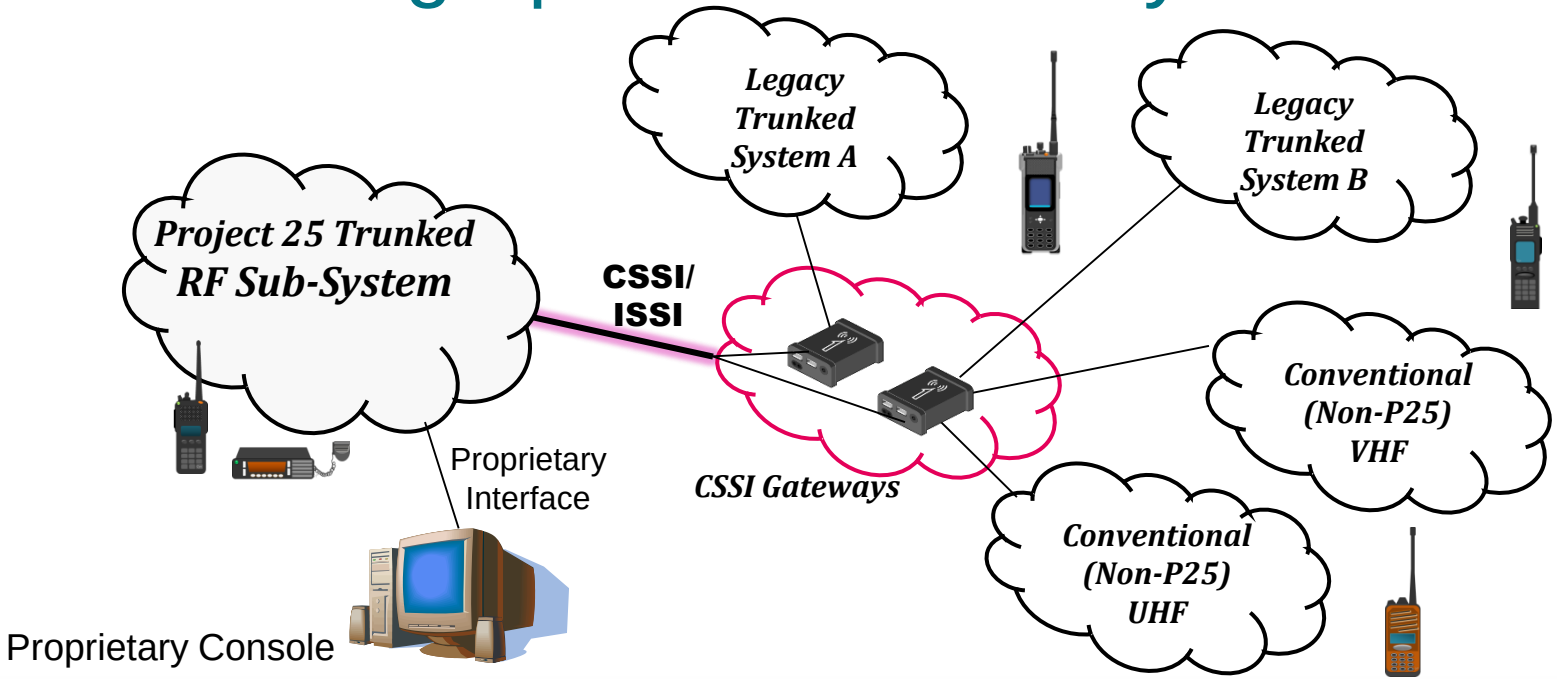


Can Be Owned By Different Agencies

- Configuration Options
- Call Records
- Priorities



Allows for Geographic Redundancy



Future of Critical Communications

- Standards In Place
- Competing Products Available
- Innovation Produces Valuable Capabilities
- Multiple Suppliers Drives Down Prices
- Buyers and Consultants Must Embrace the Standards or Competitive Products Will Vanish

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Questions?

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