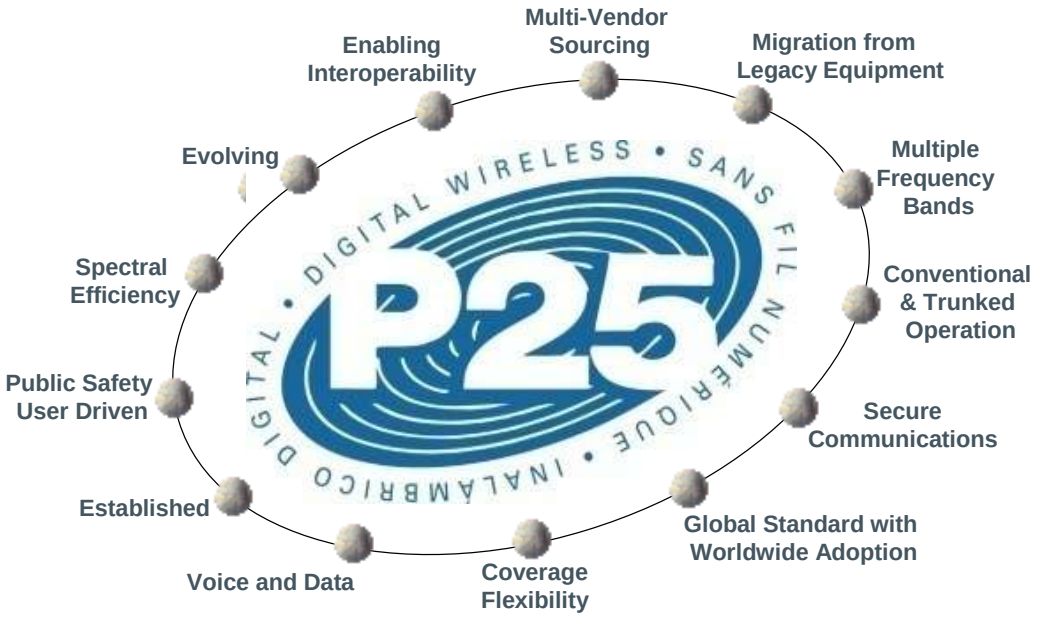
Benefits of Project 25



Enabling Interoperability

The Project 25 standard enables interoperability among multiple manufacturers' P25 products designed to the P25 standard. The P25 Common Air Interface (CAI) is the most widely deployed P25 interface enabling interoperability between P25 radios and between P25 radios and P25 infrastructure regardless of manufacturer. Public safety users can now obtain documented proof of interoperability between P25 Phase 1 CAI Trunked Subscribers and P25 Phase 1 CAI Trunked Infrastructure in manufacturer issued SDoCs (Supplier's Declarations of Compliance) and STRs (Summary Test Reports) as part of the DHS Compliance Assessment Program. These can be found on the Responders Knowledge Base Website (https://www.rkb.us/). To learn more about the DHS Compliance Assessment Program please visit the SAFECOM website (http://www.safecomprogram.gov/SAFECOM/currentprojects/project25cap/).

In addition to the FDMA Common Air Interface, the Project 25 standard suite also enables interoperability for a TDMA Common Air Interface. The Project 25 suite of standards enables interoperability for several wireline interfaces including but not limited to the Inter-RF Subsystem Interface (ISSI) for connecting disparate P25 networks together which allows users to roam from one network to another network, have encrypted communications across the networks, and permits roamers to talk back with their home users. ISSI gateways are now commercially available in the marketplace

today and recently in March 2010 interoperability testing was conducted by several manufacturers successfully demonstrating this capability. The Project 25 suite of standards enables interoperability for several Data and Secure Services including but not limited to OTAR which provides for key management of encrypted voice and data communications regardless of radio or Key Management Facility manufacturer. Today there are multiple P25 Manufacturers offering commercially available OTAR solutions. Additionally many of these manufacturers have conducted preliminary interoperability testing for OTAR capabilities.

Multi-Vendor Sourcing

As of August 2010, there were over thirty Project 25 equipment manufacturers and service providers in the marketplace offering public safety a large portfolio of Project 25 solutions to choose from. This robust competition within the Project 25 market space continues to drive Project 25 product and service enhancements and innovation.

Global Standard with Worldwide Adoption

Public Safety Agencies around the world depend on Project 25 for their mission critical communications. The P25 standard is also adopted by many industries such as utilities, airports, transit, petroleum, and chemical companies that rely on mission critical communications and interoperability with public safety agencies in an emergency.

In the United States Project 25 is widely adopted by local, county, tribal, state, and federal agencies and has the support of the US Department of Homeland (DHS). The *DHS Office of Emergency Communications Fiscal Year 2010 SAFECOM Guidance for Federal Grant Programs* specifies that, "All new digital voice systems must be compliant with the Project 25 (P25) suite of standards[1]".

Conventional and Trunked Operation
Project 25 meets the wide array of needs of Public Safety users ranging from small towns to entire states or countries.

Conventional Operation
Conventional Operation meets the needs of agencies for cost-effective, low-density communications systems. Conventional Operation also allows for direct user-to-user communications where a repeater may not be available, or off-network operation is desired such as for fireground operation, or traffic control at an accident scene. Users simply select the appropriate channel in their radios and communicate immediately with no repeater set-up time.

Trunked Operation
Trunked Operation meets the needs of agencies that have a high-density of users by enabling resource efficiencies. Unlike conventional operation in which a radio channel is

[1] http://www.safecomprogram.gov/NR/rdonlyres/31A870C0-0C9D-4C29-86F8-147D61AF25CF/0/FY_2010_SAFECOM_Recommended_Guidance__111809__Final.pdf

dedicated to a particular user group for communications, trunking provides users access to a shared collection of radio channels. Trunked Operation may be particularly attractive to agencies in large communities or smaller communities that want to join together to form shared regional systems.

Voice and Data

Project 25 supports both voice and data digital communications. Project 25 offers both clear and encrypted voice and data communication offering a wide array of features and functionality. Project 25 defines numerous features and functions that enhance a user's communication.

Secure Communications

Radio scanners allow interested citizens or criminal elements to monitor radio communications. When sensitive information is routinely communicated, agencies should consider encrypting radio traffic. Project 25 supports secure communication through the use of encryption, key management, and equipment authentication.

Coverage Flexibility

Project 25 supports a variety of system configurations including direct mode, repeated, single site, multi-site, voting, multicast, and simulcast operation addressing a wide array of unique agency coverage requirements. This flexibility is available for both conventional and trunked applications. Project 25 offers high-power operation allowing large geographic areas to be covered with fewer transmitter sites than other technologies, making Project 25 technology an economical and efficient choice for these environments. Additionally, simulcast operation allows agencies in more urban, crowded environments to reuse scarce frequencies and increase coverage penetration within a given area.

Multiple Frequency Bands/ Spectrally Efficient

The Project 25 standard itself is frequency agnostic. Project 25 equipment is available from numerous suppliers in VHF, UHF, 700, and 800 MHz frequency bands to meet the diverse frequency requirements of agencies across the world. Consult your local regulatory authority or frequency coordinator to determine appropriate frequency bands available in your area.

The Project 25 standard enables multiple frequency bands to be supported on one system and today there are Project 25 radios available that support multiple bands enhancing interoperability.

The Project 25 standard is spectrally efficient operating in 12.5 KHz channel bandwidth for both Project 25 Phase 1 FDMA and Phase 2 TDMA operation. Additionally the Project 25 Phase 2 TDMA interface meets the US FCC regulatory requirements for 6.25 kHz spectrum efficiency equivalence in the VHF, UHF, and 700 MHz band plans.

Migration from Legacy Equipment

Project 25 is unique in that P25 Phase 2 TDMA and Phase 1 FDMA equipment is compatible with and designed to coexist with existing analog systems in the VHF, UHF, and 800 MHz bands. This flexibility allows users to keep existing bandwidth and frequencies as they migrate from one technology era to the next over time to achieve greater spectral efficiencies.

Established

The Project 25 standard is established with a twenty year history within the public safety community. It was established in October 1989 when APCO[2], NASTD[3], NCS[4], NTIA[5], and NSA[6] collaborated in the creation of the APCO-NASTD-Fed Project 25 which is now known as Project 25.

Driven by Public Safety Professionals

One unique aspect of Project 25 is that public safety professionals play a critical role in the standards development process. These users can participate in the standards development process, defining and prioritizing user requirements for possible P25/TIA standardization. Users also participate in and contribute to technical working groups drafting the standard documents.

Evolving

Project 25 continues to expand and evolve, such as when new requirements come to light, existing requirements are modified and when new technological enhancements and innovations become available. Two examples of recent additions to the standard are the Phase 2 TDMA Common Air Interface and the Inter-RF Subsystem Interface.

[2] Association of Public Safety Communications Officials
[3] National Association of State Telecommunications Directors
[4] National Communication System
[5] National Telecommunications and Information Administration
[6] National Security Agency