

What is Required for P25 Compliance?

At a minimum, a P25 radio system must provide interoperability with these two mandatory P25 Standard interface components:

- The Common Air Interface (CAI)
- The Improved Multi-Band Excitation (IMBE) vocoder

The CAI enables P25 radios to interoperate and communicate digitally across P25 networks and directly. This portion of the P25 standard suite was selected to meet the unique radio system needs of the public safety environment; coverage reliability, system design flexibility, and inter-vendor compatibility.

The IMBE vocoder sets a uniform standard for converting speech into the digital bitstream. IMBE was selected as the coding scheme most successful at making male and female voices audible against background noises such as moving vehicles, sirens, gunshots, and traffic noise – the conditions of public safety use.

These two components, when used together enable P25 users to interoperate and communicate digitally directly between units and across networks, agencies, and vendors.

P25 has also defined standard modes of operation to enable multi-vendor interoperability for additional system functions: trunking, encryption, over-the-air rekeying, to name a few.

Project 25 also continues to develop a set of defined system interfaces allow the P25 system elements to communicate with host computers, data terminals and the public switched telephone network (PSTN). These interfaces are critical to assure that P25 systems maintain compatibility with the evolving telecommunications and data-communications world.