



P25 Standards Update November-December 2021

Andy Davis

Chair of the TIA TR-8 Mobile and Personal Private
Radio Engineering Committee

Project 25 Standards TR-8 Update



Completed in 2021:

Air Interfaces

- **A revision to the TSB-88.2 Wireless Communications Systems Performance in Noise and Interference-Limited Situations Part 2: Propagation and Noise** was approved for publication.
This revision includes various technical clarifications and propagation and noise associated with the 800 MHz Interstitial 12.5 kHz channels.
- **An addendum to the Trunking Interoperability Test Standard** was approved for publication.
This addendum clarifies the testing procedures for System Wide Call.

Wireline Interfaces

- **An addendum to the Trunking ISSI/CSSI Messages and Procedures Standard** was approved for publication.
This addendum describes how the ISSI/CSSI interface may be used to connect a Trunking RF Sub System to an Inter Working Function (IWF) to enable interoperable services between P25 Systems and LTE Mission Critical Systems.
- **An addendum to the Trunking ISSI/CSSI Messages and Procedures for Supplementary Data Standard** was approved for publication.
This addendum describes how the ISSI/CSSI interface may be used to connect a Trunking RF Sub System to an Inter Working Function (IWF) to enable interoperable services between P25 Systems and LTE Mission Critical Systems.

Security

- **A revision to the OTAR Messages and Procedures Standard** was approved for publication.
This revision addresses errata that have been collected since the last publication.

Project 25 Standards TR-8 Update



Work in Progress (1 of 3):

Air Interfaces

- **Creation of a High Signal Strength Intermodulation Rejection Test** is in progress.
This test will measure the ability of a P25 or analog conventional FM receiver to reject an unwanted broadband base station signal, thereby preventing degradation to the reception of a desired signal. The performance recommendations establish minimum levels of performance. Manufacturer specifications are expected to identify actual performance of specific products.
Measurement Method and Performance Recommendations for FDMA have been approved for publication. A second review of proposed modifications to TDMA Measurement Methods is now in progress. Comments are due December 13. TDMA Performance Recommendations will follow.
Analog FM Measurement Methods and Performance Recommendations will be addressed next.
- **An addendum to the TSB-88.2-F Part 2: Propagation & Noise Telecommunications Systems Bulletin** is in progress
This work will address RF penetration through low-emittance (so-called "green") glass
- **A revision to the TSB-88.1-E Part 1: Recommended Methods for Technology-Independent Narrowband Performance Modeling Telecommunications Systems Bulletin** is in progress.
This work will look into possible near-far interference issues for radios with wide pre-selectors in proximity of short-tower cellular systems at 700/800 MHz.

A vote to approve this document for ballot is in progress

Project 25 Standards TR-8 Update



Work in Progress (Continued 2 of 3):

Air Interfaces

- **A revision to the TSB-88.3-E Part 3: Recommended Methods for Technology-Independent Narrowband Performance Verification Telecommunications Systems Bulletin** is in progress.
This work will consider (a) attenuation to account for building penetration, antenna height, and other factors for Coverage Acceptance Plans (CATPs) and (b) near-far interference for radios with wide pre-selectors in proximity of short tower cellular systems at 700/800 MHz.

A vote to approve this document for ballot is in progress

Wireline Interfaces

- **Group Regrouping for the Trunking ISSI/CSSI Standard** is in progress.
This work will enable dispatch equipment connected to Trunking Infrastructures via the ISSI/CSSI to control group regrouping services. Note the control channel messaging for these services has already been standardized.
- **A revision to the Trunking ISSI/CSSI Messages and Procedures Standard** is in progress.
This document will merge two previously published addendums (Addendum 1; Group Emergency Behaviors and Addendum 2; Errata to Fix Errors and Omissions) into the previously published parent document.

Modifications to the Trunking ISSI/CSSI Interoperability Testing standard are in progress

These modifications consider tests for vocoder mode combinations



Project 25 Standards TR-8 Update

Work in Progress (Continued 3 of 3):

Wireline Interfaces (continued)

Creation of an ISSI/CSSI Supplementary Data Interoperability Test Standard is in progress.

This is a new document that defines standard tests for ISSI/CSSI Supplementary Data features

Security

- **Definition of a Link Layer Encryption Security Service** is in progress.

This technology upgrade is for improved Security for all air interfaces of P25. It protects control messages, and hides group and individual IDs.

The Overview of the new services is considered complete along with the TDMA Air Interface material. Material covering Trunking Control Channel Key Management is in progress. Material covering FDMA Common Air Interface modifications and Key Fill Interface modifications are pending review.

- **A revision to the Key Fill Device Interface Standard** is in progress.

This will enable Key Fill Device (KVL) interface to a KMF, an Authentication Facility and another Key Fill Device. The revision will merge the draft addendum provided by the Encryption Task group with the currently published document.

The revision is occurring in phases. Each phase covers specific sections. Phase 1 is complete. Phase 2 draft is in review



P25 Standards Update January 2022

Andy Davis

Chair of the TIA TR-8 Mobile and Personal Private
Radio Engineering Committee



Project 25 Standards TR-8 Update

TR-8.1

- Creation of a High Signal Strength Intermodulation Rejection Test is in progress
This test will measure the ability of a P25 or analog conventional FM receiver to reject an unwanted broadband base station signal, thereby preventing degradation to the reception of a desired signal. The performance recommendations establish minimum levels of performance. Manufacturer specifications are expected to identify actual performance of specific products.
- Measurement Method and Performance Recommendations for FDMA have been approved for publication
- Review of proposed modifications to TDMA Measurement Methods is complete
- TDMA Performance Recommendations review is in progress. Comments due January 14, 2022
- Analog FM Measurement Methods and Performance Recommendations will be addressed next



Project 25 Standards TR-8 Update

TR-8.3

- A revision to the Key Fill Device Interface Standard is in progress
This will enable Key Fill Device (KVL) interface to a KMF, an Authentication Facility and another Key Fill Device. The revision will merge the draft addendum provided by the Encryption Task group with the currently published document.
- The revision is occurring in phases. Each phase covers specific sections. Phase 1 is complete. Phase 2 draft is in review. Comments are due January 21, 2022
- Working with FPIC and NIST to consider a NIST approved MAC method for OTAR
 - Additional meetings are being planned.

Project 25 Standards TR-8 Update



TR-8.18

- A revision to the TSB-88.1-E Part 1: Recommended Methods for Technology-Independent Narrowband Performance Modeling Telecommunications Systems Bulletin is in progress

This work will look into possible near-far interference issues for radios with wide pre-selectors in proximity of short-tower cellular systems at 700/800 MHz.

- A revision to the TSB-88.3-E Part 3: Recommended Methods for Technology-Independent Narrowband Performance Verification Telecommunications Systems Bulletin is in progress

This work will consider (a) attenuation to account for building penetration, antenna height, and other factors for Coverage Acceptance Plans (CATPs) and (b) near-far interference for radios with wide pre-selectors in proximity of short tower cellular systems at 700/800 MHz.

- Both draft documents (TSB -88.1-F, TSB -88.3-F) are in ballot. Both ballots close January 13, 2021
- An addendum to the TSB-88.2-F Part 2: Propagation & Noise Telecommunications Systems Bulletin is in progress

This work will address RF penetration through low-emittance (so-called "green") glass.

- Draft Addendum comment resolution is in progress