



**Homeland  
Security**

Science and Technology

Office for Interoperability and Compatibility

## **Project 25 Compliance Assessment Bulletin**

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Project 25 Compliance Assessment Program

Baseline Common Air Interface Testing  
Requirements

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**P25-CAB-CAI\_TEST\_REQ**

Draft 2016 –Add Time Division Multiple Access (TDMA)

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## Notice of Disclaimer and Limitation of Liability

The Project 25 Compliance Assessment Program (P25 CAP) provides equipment purchasers with demonstrated evidence of a product’s compliance with a select group of requirements within the suite of P25 standards. The test procedures used to validate these requirements are also part of the P25 suite of standards. Although successful tests will demonstrate P25 compliance for the specific requirements tested, the conclusions drawn from these tests do not apply to every environment or individual user’s needs. P25 CAP-mandated tests only demonstrate product compliance with the test procedures listed in the Supplier’s Declaration of Compliance and, therefore, only attest to a product’s compliance with specific requirements within the P25 Standard.

## Revision History

Version	Date	Description
Draft	6/20/2014	Revised dates and made minor editorial changes. Changed Responders Knowledgebase links to First Responder Group links. Added Conventional Interoperability Tests (TIA-102.CABA), which were last approved by the P25 CAP Governing Board.
Draft (For PC)	3/3/2015	Final release version for public comment (PC) approved on March 3, 2015. Posted for public comment on March 19, 2015.
Draft 2 (For PC)	6/30/2015	Incorporates public comment-resolution candidates. Posted again for PC the week of June 30, 2015.
2016 Release	8/17/2016	Addresses March and July 2015 public comments. Posted for general use on August 17, 2016.
xxx	x/xx/201x	Draft - Incorporate TDMA released for public comment.

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## 1 Introduction

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) Office for Interoperability and Compatibility (OIC) Project 25 Compliance Assessment Program (P25 CAP) is a voluntary program that allows P25 equipment suppliers to formally demonstrate their products' compliance with a select group of requirements within the suite of P25 standards. The purpose of the program is to provide emergency response agencies with evidence that the communications equipment they are purchasing meet P25 standards for performance, conformance and interoperability.

The program requires test laboratories to demonstrate their competence through a rigorous and objective assessment process. Such a process promotes the user community's confidence in, and acceptance of, test results from DHS S&T-recognized laboratories. All equipment suppliers that participate in the P25 CAP must use DHS S&T-recognized laboratories to conduct performance, conformance and interoperability tests on their products. P25 equipment suppliers will release Summary Test Report (STR) and Supplier's Declaration of Compliance (SDOC) documents based on the Detailed Test Report (DTR) from the DHS-recognized laboratory(s) that performed the product testing. This documentation will serve to increase the public's confidence in the performance, conformance and interoperability of P25 equipment.

Performance, conformance and interoperability issues are likely to occur in all communications technologies and especially in ones like P25 with protocols that constantly adapt to changing user requirements. Users should seek to address such problems with the supplier first, then with TIA TR8.25 and then within the P25 CAP and, notably, before product launch and deployment. Further, the declaration of compliance-related documents developed by program participants will provide useful technical information about the equipment.

### 1.1 Scope

Federal grant funding guidance states that grant applicants using funds to purchase P25 equipment must obtain SDOC and STR documents posted to the [dhs.gov/science-and-technology/p25-cap](https://dhs.gov/science-and-technology/p25-cap) website. The evidence should show that the equipment has been tested based on all of the applicable, published P25 CAP Compliance Assessment Bulletins covering performance, conformance and interoperability. This Compliance Assessment Bulletin (CAB) defines these procedures for the P25 Common Air Interface (CAI). Applicable test procedures include tests of all mandatory features and standard options installed in the product contemplated for purchase.<sup>1</sup>

### 1.2 Effective Date

This Compliance Assessment Bulletin becomes effective on (TBD).

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<sup>1</sup> Most radio technologies require climatic and power supply voltage testing for nominal, as well as extreme conditions. The present P25 Compliance Assessment Program is for nominal conditions only. If testing under extreme conditions is required, then these requirements should be stipulated by the procuring agency and made mandatory in the contract for purchase of the devices or system. The measurement report and data should be reviewed by the procuring agency to determine if the extreme climatic and/or power supply voltages have been tested.

### 1.3 Normative References

- [1] ANSI/TIA-102.CAAA-E, *Project 25 Digital C4FM/CQPSK Transceiver Measurement Methods.*
- [2] ANSI/TIA-102.CAAB-D, *Project 25 Land Mobile Radio Transceiver Performance Recommendations, Digital Radio Technology, C4FM/CQPSK Modulation.*
- [3] TIA-102.CABC-B, *Project 25 Interoperability Testing for Voice Operation in Trunked Systems.*
- [4] TIA-102.CABA, *Project 25 Interoperability Testing for Voice Operation in Conventional Systems.*
- [5] TIA-102.CABC-B-1, *Project 25 Interoperability Testing for Voice Operation in Trunked Systems Addendum – TDMA Mode.*
- [6] ANSI/TIA-102.CCAA-A, *Project 25 Two-Slot Time Division Multiple Access Transceiver Measurement Methods.*
- [7] ANSI/TIA-102.CCAB-A, *Project 25 Two-Slot Time Division Multiple Access Transceiver Performance Recommendations.*

### 1.4 Informative References

- [8] TIA-102.CAEA, *Project 25 Conformance Profile Level One – Basic Conventional Operation.*
- [9] TIA-102.CAEB, *Project 25 Conformance Profile Level Two – Advanced Conventional Operation.*
- [10] TIA-102.CAEC, *Project 25 Conformance Profile Basic Trunked Operation.*
- [11] TIA-102.CAED, *Project 25 Conformance for Advanced Trunked Operations.*
- [12] TSB-102.CBBJ-B, *Project 25 Recommended Compliance Assessment Tests – Trunking Interoperability.*
- [13] TSB-102.CBBH, *Project 25 Recommended Compliance Assessment Tests – Performance – Trunked Mode Fixed Station Transceiver and Related Infrastructure.*
- [14] TSB-102.CBBF, *Project 25 Recommended Compliance Assessment Tests – Transceiver Performance – Trunking Mode Subscriber.*
- [15] TSB-102.CBBE, *Project 25 Recommended Compliance Assessment Tests – Conventional Operation.*
- [16] TSB-102.CBBC, *Project 25 Recommended Compliance Assessment Tests – Transceiver Performance – Conventional Mode Fixed Station.*
- [17] TSB-102.CBBA, *Project 25 Recommended Compliance Assessment Tests – Transceiver Performance – Conventional Mode Subscriber.*
- [18] TSB-102.CBBL-A, *Project 25 Recommended Compliance Assessment Tests – Two-Slot TDMA Trunking Voice Channel Air Interface.*

## 2 Baseline Common Air Interface Compliance Assessment Requirements

### 2.1 Subscriber Units

If a subscriber unit can operate in both a conventional mode of operation, as well as a trunked mode of operation, and if required tests for both are the same, the laboratory performing the tests will only be required to perform the duplicative test once.

#### 2.1.1 Performance

FDMA subscriber units (SUs) shall be tested in accordance with the following sections of ANSI/TIA-102.CAAA-E [1], and shall meet or exceed all of the performance recommendations (for Class A or Class B requirements, where applicable) as specified in ANSI/TIA-102.CAAB-D [2].

TDMA SUs shall be tested in accordance with the following sections of ANSI/TIA- TIA-102.CCAA-A [6], and shall meet or exceed all of the performance recommendations (for Class A or Class B requirements, where applicable) as specified in ANSI/A-102.CCAB-A [7].

##### 2.1.1.1 Conventional Mode SU Operation

**Table 1. Conventional Mode SU Receiver Tests**

SU Receiver Tests	Method of Measurement [1]	Performance Recommendation [2]
Reference Sensitivity	§2.1.4	§3.1.4
Faded Reference Sensitivity	§2.1.5	§3.1.5
Signal Delay Spread Capability	§2.1.6	§3.1.6
Adjacent Channel Rejection	§2.1.7	§3.1.7
Co-Channel Rejection	§2.1.8	§3.1.8
Spurious Response Rejection	§2.1.9	§3.1.9
Intermodulation Rejection	§2.1.10	§3.1.10
Signal Displacement Bandwidth	§2.1.11	§3.1.11
Late Entry Unsilence Delay	§2.1.17	§3.1.17
Receiver Throughput Delay	§2.1.18	§3.1.18

**Table 2. Conventional Mode SU Transmitter Tests**

SU Transmitter Tests	Method of Measurement [1]	Performance Recommendation [2]
Unwanted Emissions: Adjacent Channel Power Ratio	§2.2.8	§3.2.8
Transmitter Power and Encoder Attack Time	§2.2.12	§3.2.12
Transmitter Throughput Delay	§2.2.14	§3.2.14

SU Transmitter Tests	Method of Measurement [1]	Performance Recommendation [2]
Frequency Deviation for C4FM	§2.2.15	§3.2.15
Modulation Fidelity	§2.2.16	§3.2.16
Transient Frequency Behavior	§2.2.18	§3.2.18

**2.1.1.2 Trunked Mode SU Operation - FDMA**

**Table 3. Trunking Mode SU Receiver Tests (FDMA)**

SU Receiver Tests	Method of Measurement [1]	Performance Recommendation [2]
Reference Sensitivity	§2.1.4	§3.1.4
Faded Reference Sensitivity	§2.1.5	§3.1.5
Signal Delay Spread Capability	§2.1.6	§3.1.6
Adjacent Channel Rejection	§2.1.7	§3.1.7
Co-Channel Rejection	§2.1.8	§3.1.8
Spurious Response Rejection	§2.1.9	§3.1.9
Intermodulation Rejection	§2.1.10	§3.1.10
Signal Displacement Bandwidth	§2.1.11	§3.1.11

**Table 4. Trunking Mode SU Transmitter Tests (FDMA)**

SU Transmitter Tests	Method of Measurement [1]	Performance Recommendation [2]
Unwanted Emissions: Adjacent Channel Power Ratio	§2.2.8	§3.2.8
Transmitter Power and Encoder Attack Time	§2.2.12	§3.2.12
Transmitter Throughput Delay	§2.2.14	§3.2.14
Frequency Deviation for C4FM	§2.2.15	§3.2.15
Modulation Fidelity	§2.2.16	§3.2.16
Transient Frequency Behavior	§2.2.18	§3.2.18

**Table 5. Trunking Mode SU Trunked Tests (FDMA)**

Trunking SU Tests	Method of Measurement [1]	Performance Recommendation [2]
Trunking Control Channel Slot Times	§2.3.1	§3.3.1
Trunking Request Time <sup>2</sup>	§2.3.2	§3.3.2

<sup>2</sup> Measurement method necessitates both trunking and infrastructure and subscriber equipment.

Trunking SU Tests	Method of Measurement [1]	Performance Recommendation [2]
Transmitter Time to Key on a Traffic Channel <sup>2</sup>	§2.3.5	§3.3.5

**2.1.1.3 Trunked Mode SU Operation-TDMA**

**Table 6. Trunking Mode SU Receiver Tests (TDMA)**

SU Receiver Tests	Method of Measurement [6]	Performance Recommendation [7]
Reference Sensitivity	§2.1.4	§3.1.4
Faded Reference Sensitivity	§2.1.5	§3.1.5
Signal Delay Spread Capability	§2.1.6	§3.1.6
Adjacent Channel Rejection	§2.1.7	§3.1.7
Co-Channel Rejection	§2.1.8	§3.1.8
Spurious Response Rejection	§2.1.9	§3.1.9
Intermodulation Rejection	§2.1.10	§3.1.10
Signal Displacement Bandwidth	§2.1.11	§3.1.11

**Table 7. Trunking Mode SU Transmitter Tests (TDMA)**

SU Transmitter Tests	Method of Measurement [6]	Performance Recommendation [7]
Unwanted Emissions: Adjacent Channel Power Ratio	§2.2.8	§3.2.8
Frequency Deviation for H-CPM	§2.2.12	§3.2.12
Modulation Fidelity	§2.2.13	§3.2.13
Symbol Rate Accuracy	2.2.14	3.2.14
H-CPM Transmitter Logical Channel Peak Adjacent Channel Power Ratio	§2.2.15	§3.2.15
H-CPM Transmitter Logical Channel Off Slot Power	§2.2.16	§3.2.16
H-CPM Transmitter Logical Channel Power Envelope	§2.2.17	§3.2.17
H-CPM Transmitter Logical Channel Time Alignment	§2.2.18	§3.2.18

**Table 8. Trunking Mode SU Trunked Tests (TDMA)**

Trunking SU Tests	Method of Measurement [6]	Performance Recommendation [7]
Trunking Voice Access Time	§2.3.1	§3.3.1

## 2.1.2 Conformance

### 2.1.2.1 Basic Conventional Mode Operation

No tests are defined or required at this time.

### 2.1.2.2 Advanced Conventional Mode Operation

No tests are defined or required at this time.

### 2.1.2.3 Basic Trunked Mode Operation

No tests are defined or required at this time.

### 2.1.2.4 Advanced Trunked Mode Operation

No tests are defined or required at this time.

## 2.1.3 Interoperability

### 2.1.3.1 Conventional Direct Mode SU Operation

P25 SUs capable of conventional mode operation shall be tested for interoperability in accordance with TIA-102.CABA [4]. SUs must be tested against at least three<sup>3</sup> of the commercially available, band-compatible conventional products, where each conventional product is from a different manufacturer.

**Table 9. Conventional Interoperability Tests – Direct Mode**

<b>Conventional Interoperability Tests – Direct Mode</b>	<b>Normative Test [4]</b>
<b>Matching NAC Operation and SU Unaddressed Voice Call</b>	<b>§2.2.1</b>
Test Case 1 – Unaddressed Voice Call	§2.2.1.4.1
<b>Matching NAC Operation and SU Routine Group Voice Call</b>	<b>§2.2.2</b>
Test Case 1 – Routine Group Voice Call	§2.2.2.4.1
<b>Monitor Mode – SU Group Voice Call</b>	<b>§2.2.3</b>
Test Case 1 – Receiving Group Call	§2.2.3.4.1
<b>Accept Any NAC in Normal and Selective Squelch Mode – SU Group Voice Call</b>	<b>§2.2.8</b>
Test Case 1 – Receiving Group Call with Receive NAC \$F7E under Normal and Selective Squelch Modes	§2.2.8.4.1
<b>Emergency Call</b>	<b>§2.2.4</b>
Test Case 1 – Emergency Call	§2.2.4.4.1
<b>Unit-to-Unit Voice Call</b>	<b>§2.2.5</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.2.5.4.1

<sup>3</sup> Known as the *rule of three*. In cases where three products cannot be found to test against, suppliers are encouraged to apply to the program for an exception to the rule of three.

<b>Conventional Interoperability Tests – Direct Mode</b>	<b>Normative Test [4]</b>
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.2.5.4.2
<b>Unit-to-Unit Voice Call – Receiving Units also in Monitor Mode</b>	<b>§2.2.6</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.2.6.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.2.6.4.2
<b>Encryption</b>	<b>§2.2.7</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.2.7.4.1
<b>Call Alert</b>	<b>§2.3.1</b>
Test Case 1 – Call Alert (SU 1 to SU 5)	§2.3.1.4.1
Test Case 2 – Call Alert (SU 5 to SU 1)	§2.3.1.4.2
<b>Radio Check</b>	<b>§2.3.2</b>
Test Case 1 – Radio Check (SU 1 to SU 5)	§2.3.2.4.1
Test Case 2 – Radio Check (SU 5 to SU 1)	§2.3.2.4.2
<b>Message Update</b>	<b>§2.3.3</b>
Test Case 1 – Message Update (SU 1 to SU 5)	§2.3.3.4.1
Test Case 2 – Message Update (SU 5 to SU 1)	§2.3.3.4.2
<b>Status Update</b>	<b>§2.3.4</b>
Test Case 1 – Status Update (SU 1 to SU 5)	§2.3.4.4.1
Test Case 2 – Status Update (SU 5 to SU 1)	§2.3.4.4.2
<b>Status Query</b>	<b>§2.3.5</b>
Test Case 1 – Status Query (SU 1 to SU 5)	§2.3.5.4.1
Test Case 2 – Status Query (SU 5 to SU 1)	§2.3.5.4.2
<b>Radio Unit Monitor</b>	<b>§2.3.6</b>
Test Case 1 – Radio Unit Monitor Initiated by SU 1 – Group Call	§2.3.6.4.1
Test Case 2 – Radio Unit Monitor Initiated by SU 5 – Group Call	§2.3.6.4.2
Test Case 3 – Radio Unit Monitor Initiated by SU 1 – Unit-to-Unit Call	§2.3.6.4.3
Test Case 4 – Radio Unit Monitor Initiated by SU 5 – Unit-to-Unit Call	§2.3.6.4.4

### **2.1.3.2 Conventional Repeat Mode SU Operation**

P25 SUs capable of conventional mode operation shall be tested for interoperability in accordance with TIA-102.CABA [4]. SUs must be tested against at least three of the commercially available, band-compatible conventional-mode-capable fixed network equipment (FNE), where each FNE is from a different manufacturer.

**Table 10. Conventional Interoperability SU Tests – Repeat Mode**

<b>Conventional Interoperability Tests – Repeat Mode (SU to FNE to SU)</b>	<b>Normative Test [4]</b>
<b>Matching NAC Operation and SU Unaddressed Voice Call</b>	<b>§2.4.1</b>
Test Case 1 – Matching NAC operation – Unaddressed Voice Call	§2.4.1.4.1
<b>Matching NAC Operation – SU Routine Group Call Mode</b>	<b>§2.4.2</b>
Test Case 1 – Matching NAC – SU Routine Group Call Mode	§2.4.2.4.1
<b>Transmit NAC Independent of Receive NAC – SU Unaddressed Voice Call</b>	<b>§2.4.3</b>
Test Case 1 – Independent NAC Operation – SU Unaddressed Voice Call	§2.4.3.4.1
<b>Transmit NAC Independent of Receive NAC – SU Routine Group Call</b>	<b>§2.4.4</b>
Test Case 1 – Independent NAC Operation – SU Routine Group Call	§2.4.4.4.1
<b>Any NAC (§F7F) Operation – SU Unaddressed Voice Call</b>	<b>§2.4.5</b>
Test Case 1 – NAC §F7F Operation – SU Unaddressed Voice Call	§2.4.5.4.1
<b>Any NAC (§F7F) Operation – SU Routine Group Call</b>	<b>§2.4.6</b>
Test Case 1 – NAC §F7F Operation – SU Routine Group Call	§2.4.6.4.1
<b>Any NAC (§F7F) Operation with Fixed Transmit NAC – SU Group Call</b>	<b>§2.4.7</b>
Test Case 1 – NAC §F7F Operation – SU Group Call	§2.4.7.4.1
<b>Emergency Call</b>	<b>§2.4.8</b>
Test Case 1 – Emergency Call	§2.4.8.4.1
<b>Monitor Mode – SU Group Call</b>	<b>§2.4.9</b>
Test Case 1 – Monitor Mode – Receiving Group Call	§2.4.9.4.1
<b>Unit-to-Unit Voice Call</b>	<b>§2.4.10</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.4.10.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.4.10.4.2
Test Case 3 – Initiate Unit-to-Unit Call from SU 1, No Co-Channel Interference Suppression	§2.4.10.4.3
Test Case 4 – Initiate Unit-to-Unit Call from SU 5, No Co-Channel Interference Suppression	§2.4.10.4.4
<b>Unit-to-Unit Voice Call Co-Channel Interference Suppression by FNE</b>	<b>§2.4.11</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.4.11.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.4.11.4.2
<b>Unit-to-Unit Voice Call – Receiving Units Also in Monitor Mode</b>	<b>§2.4.12</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.4.12.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.4.12.4.2
<b>Encryption</b>	<b>§2.4.13</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.4.13.4.1
<b>Accept Any NAC in Normal and Selective Squelch Mode – SU Group Call</b>	<b>§2.4.14</b>

<b>Conventional Interoperability Tests – Repeat Mode (SU to FNE to SU)</b>	<b>Normative Test [4]</b>
Test Case 1 – Receiving group Call with receive NAC \$F7F under Normal and Selective Squelch Modes	§2.4.14.4.1
<b>Call Alert</b>	<b>§2.5.1</b>
Test Case 1 – Initiate Call Alert Request from SU 1	§2.5.1.4.1
Test Case 2 – Initiate Call Alert Request from SU 5	§2.5.1.4.2
<b>Radio Check</b>	<b>§2.5.2</b>
Test Case 1 – Initiate Radio Check from SU 1	§2.5.2.4.1
Test Case 2 – Initiate Radio Check from SU 5	§2.5.2.4.2
<b>Message Update</b>	<b>§2.5.3</b>
Test Case 1 – Message Update Initiated by SU 1	§2.5.3.4.1
Test Case 2 – Message Update Initiated by SU 5	§2.5.3.4.2
Test Case 3 – SU 1 to Group Message Update	§2.5.3.4.3
Test Case 4 – SU 5 to Group Message Update	§2.5.3.4.4
<b>Status Update</b>	<b>§2.5.4</b>
Test Case 1 – Status Update Initiated by SU 1	§2.5.4.4.1
Test Case 2 – Status Update Initiated by SU 5	§2.5.4.4.2
Test Case 3 – SU to Talk Group Status Update Initiated by SU 1	§2.5.4.4.3
Test Case 4 – SU to Talk Group Status Update Initiated by SU 5	§2.5.4.4.4
<b>Status Query</b>	<b>§2.5.5</b>
Test Case 1 – Status Query Initiated by SU 1	§2.5.5.4.1
Test Case 2 – Status Query Initiated by SU 5	§2.5.5.4.2
<b>Radio Unit Monitor</b>	<b>§2.5.6</b>
Test Case 1 – Radio Unit Monitor Initiated by SU 1 – Group Call	§2.5.6.4.1
Test Case 2 – Radio Unit Monitor Initiated by SU 5 – Group Call	§2.5.6.4.2
Test Case 3 – Radio Unit Monitor Initiated by SU 1 – Unit-to-Unit Call	§2.5.6.4.3
Test Case 4 – Radio Unit Monitor Initiated by SU 5 – Unit-to-Unit Call	§2.5.6.4.4

**Table 11. Conventional Interoperability SU Tests – FNE Includes Dispatch Consoles Mode**

<b>Conventional Interoperability Tests – FNE Includes Dispatch and other Monitoring Consoles (Repeat Mode (SU to FNE to SU) or Direct Mode)</b>	<b>Normative Test [4]</b>
<b>Unaddressed Voice Call</b>	<b>§2.6.1</b>
Test Case 1 – Unaddressed Voice Call	§2.6.1.4.1
<b>Routine Group Call</b>	<b>§2.6.2</b>
Test Case 1 – Routine Group Call	§2.6.2.4.1
<b>Emergency Call</b>	<b>§2.6.3</b>

<b>Conventional Interoperability Tests – FNE Includes Dispatch and other Monitoring Consoles (Repeat Mode (SU to FNE to SU) or Direct Mode)</b>	<b>Normative Test [4]</b>
Test Case 1 – Emergency Call from SU	§2.6.3.4.1
Test Case 2 – Emergency Call from DMC	§2.6.3.4.2
<b>All Call (System-Wide Call)</b>	<b>§2.6.4</b>
Initiate System-Wide Call to Collection of Talk Groups	§2.6.4.4.1
<b>Unit-to-Unit Voice Call</b>	<b>§2.6.5</b>
Test Case 1 – Initiate Unit-to-Unit Call from DMC	§2.6.5.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 1	§2.6.5.4.2
<b>Encryption</b>	<b>§2.6.6</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.6.6.4.1
<b>Emergency Alarm to Dispatch and/or other Monitoring Console</b>	<b>§2.7.1</b>
Test Case 1 – Emergency Alarm	§2.7.1.4.1
<b>Call Alert</b>	<b>§2.7.2</b>
Test Case 1 – Initiate Call Alert Request from DMC	§2.7.2.4.1
Test Case 2 – Initiate Call Alert Request from SU 1	§2.7.2.4.2
<b>Radio Check</b>	<b>§2.7.3</b>
Test Case 1 – Initiate Radio Check from DMC	§2.7.3.4.1
<b>Radio Unit Inhibit</b>	<b>§2.7.4</b>
Test Case 1 – Radio Unit Inhibit from DMC	§2.7.4.4.1
<b>Radio Unit Uninhibit</b>	<b>§2.7.5</b>
Test Case 1 – Radio Unit Uninhibit from DMC	§2.7.5.4.1
<b>Message Update</b>	<b>§2.7.6</b>
Test Case 1 – Message Update from DMC	§2.7.6.4.1
Test Case 2 – DMC to Group Message Update	§2.7.6.4.2
Test Case 3 – SU 1 to DMC Message Update	§2.7.6.4.3
Test Case 4 – SU 1 to Group Message Update	§2.7.6.4.4
<b>Status Update</b>	<b>§2.7.7</b>
Test Case 1 – Status Update from SU 1 to DMC	§2.7.7.4.1
Test Case 2 – Talk Group Status Update Initiated by SU 1	§2.7.7.4.2
<b>Status Query</b>	<b>§2.7.8</b>
Test Case 1 – Status Query Initiated by DMC	§2.7.8.4.1
<b>Radio Unit Monitor</b>	<b>§2.7.9</b>
Test Case 1 – Radio Unit Monitor Initiated by DMC – Group Call	§2.7.9.4.1
Test Case 2 – Radio Unit Monitor Initiated by DMC – Unit-to-Unit Call	§2.7.9.4.2

### 2.1.3.3 *Trunked Mode SU Operation*

P25 SUs capable of trunked mode operation shall be tested for interoperability in accordance with TIA-102.CABC-B [3]. SUs must be tested against at least three commercially available, band-compatible trunked systems, where each trunked system is from a different manufacturer. Tests are to be executed in each of the home and roaming configurations provided in TIA-102.CABC-B [3] Section 2.1.1.1, provided that the manufacturer supports the configuration. Execute tests in Table 9 in both FDMA and TDMA mode if both the SU and RFSS support TDMA mode.

**Table 12. Trunking Interoperability SU Tests (FDMA)**

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3]</b>
<b>Full Registration</b>	<b>§2.2.1</b>
Test Case 1 – Valid Registration	§2.2.1.4.1
Test Case 2 – Denied or Refused Registration	§2.2.1.4.2
Test Case 3 – Unverified Registration	§2.2.1.4.3
<b>Group Voice Call</b>	<b>§2.2.2</b>
Test Case 1 – Group Call Granted	§2.2.2.4.1
Test Case 2 – Group Call Denied	§2.2.2.4.2
Test Case 3 – Group Call Request Queued	§2.2.2.4.3
<b>Unit-to-Unit Voice Call</b>	<b>§2.2.3</b>
Test Case 1 – Unit-to-Unit Call with Target Availability Check	§2.2.3.4.1
Test Case 2 – Unit-to-Unit Call with Target Availability Check Denied by Target	§2.2.3.4.2
Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check	§2.2.3.4.3
Test Case 4 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check	§2.2.3.4.4
Test Case 5 – Unit-to-Unit Call without Target Availability Check	§2.2.3.4.5
Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check	§2.2.3.4.6
Test Case 7 – Unit-to-Unit Call Denied	§2.2.3.4.7
<b>Broadcast Voice Call</b>	<b>§2.2.4</b>
Test Case 1 – Broadcast Voice Call	§2.2.4.4.1
<b>Affiliation</b>	<b>§2.2.5</b>
Test Case 1 – Radio Permitted to Affiliate with New Group	§2.2.5.4.1
Test Case 2 – Radio Denied Affiliation to New Group	§2.2.5.4.2
<b>Announcement Group Call</b>	<b>§2.2.6</b>
Test Case 1 – Collection of Talk Groups Receive Call	§2.2.6.4.1
<b>Emergency Alarm</b>	<b>§2.2.7</b>

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3]</b>
Test Case 1 – Emergency Alarm	§2.2.7.4.1
<b>Emergency Group Call</b>	<b>§2.2.8</b>
Test Case 1 – Emergency Call	§2.2.8.4.1
<b>Encryption</b>	<b>§2.2.10</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.2.10.4.1
<b>Intra-Location Registration Area Roaming</b>	<b>§2.2.11</b>
Test Case 1 – Idle Radio	§2.2.11.4.1

**Table 13. Trunking Interoperability SU Tests (TDMA)**

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3,5]</b>
<b>Full Registration</b>	<b>§2.2.1</b>
Test Case 1 – Valid Registration	§2.2.1.4.1
Test Case 2 – Denied or Refused Registration	§2.2.1.4.2
Test Case 3 – Unverified Registration	§2.2.1.4.3
<b>Group Voice Call</b>	<b>§2.2.2</b>
Test Case 1 – Group Call Granted	§2.2.2.4.1
Test Case 2 – Group Call Denied	§2.2.2.4.2
Test Case 3 – Group Call Request Queued	§2.2.2.4.3
<b>Unit-to-Unit Voice Call</b>	<b>§2.2.3</b>
Test Case 1 – Unit-to-Unit Call with Target Availability Check	§2.2.3.4.1
Test Case 2 – Unit-to-Unit Call with Target Availability Check Denied by Target	§2.2.3.4.2
Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check	§2.2.3.4.3
Test Case 4 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check	§2.2.3.4.4
Test Case 5 – Unit-to-Unit Call without Target Availability Check	§2.2.3.4.5
Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check	§2.2.3.4.6
Test Case 7 – Unit-to-Unit Call Denied	§2.2.3.4.7
<b>Broadcast Voice Call</b>	<b>§2.2.4</b>
Test Case 1 – Broadcast Voice Call	§2.2.4.4.1
<b>Affiliation</b>	<b>§2.2.5</b>
Test Case 1 – Radio Permitted to Affiliate with New Group	§2.2.5.4.1
Test Case 2 – Radio Denied Affiliation to New Group	§2.2.5.4.2
<b>Announcement Group Call</b>	<b>§2.2.6</b>

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3,5]</b>
Test Case 1 – Collection of Talk Groups Receive Call	§2.2.6.4.1
<b>Emergency Alarm</b>	<b>§2.2.7</b>
Test Case 1 – Emergency Alarm	§2.2.7.4.1
<b>Emergency Group Call</b>	<b>§2.2.8</b>
Test Case 1 – Emergency Call	§2.2.8.4.1
<b>Encryption</b>	<b>§2.2.10</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.2.10.4.1
<b>Intra-Location Registration Area Roaming</b>	<b>§2.2.11</b>
Test Case 1 – Idle Radio	§2.2.11.4.1

## 2.2 Base Stations/Repeaters

If a base station/repeater (BS/R) can operate in both a conventional mode of operation, as well as a trunked mode of operation, and if required tests for both are the same, the laboratory performing the tests will only be required to perform the duplicative test once.

### 2.2.1 Performance

Base station radios and repeater units shall be tested in accordance with the following sections of ANSI/TIA-102.CAAA-D [1], and shall meet or exceed all of the corresponding performance recommendations (for Class A or Class B requirements, where applicable) as specified in ANSI/TIA-102.CAAB-D [2].

Base station radios and repeater units shall be tested in accordance with the following sections of ANSI/TIA-102.CCAA-A [6], and shall meet or exceed all of the corresponding performance recommendations (for Class A or Class B requirements, where applicable) as specified in ANSI/TIA-102.CCAB-A [7].

#### 2.2.1.1 Conventional Mode Fixed Station Operation

**Table 14. Conventional Mode Fixed Station Receiver Tests**

<b>Conventional Station Receiver Tests</b>	<b>Method of Measurement [1]</b>	<b>Performance Recommendation [2]</b>
Reference Sensitivity	§2.1.4	§3.1.4
Faded Reference Sensitivity	§2.1.5	§3.1.5
Adjacent Channel Rejection	§2.1.7	§3.1.7
Co-Channel Rejection	§2.1.8	§3.1.8
Spurious Response Rejection	§2.1.9	§3.1.9

Conventional Station Receiver Tests	Method of Measurement [1]	Performance Recommendation [2]
Intermodulation Rejection	§2.1.10	§3.1.10
Signal Displacement Bandwidth	§2.1.11	§3.1.11
Late Entry Unscquelch Delay <sup>4</sup>	§2.1.17	§3.1.17
Receiver Throughput Delay <sup>5</sup>	§2.1.18	§3.1.18

**Table 15. Conventional Mode Fixed Station Transmitter Tests**

Conventional Station Transmitter Tests	Method of Measurement [1]	Performance Recommendation [2]
Unwanted Emissions: Adjacent Channel Power Ratio	§2.2.8	§3.2.8
Transmitter Throughput Delay <sup>6</sup>	§2.2.14	§3.2.14
Frequency Deviation for C4FM	§2.2.15	§3.2.15
Modulation Fidelity	§2.2.16	§3.2.16
Transient Frequency Behavior	§2.2.18	§3.2.18

**2.2.1.2 Trunked Mode Fixed Station Operation FDMA**

**Table 16. Trunked Mode Fixed Station Receiver Tests (FDMA)**

Trunking Station Receiver Tests	Method of Measurement [1]	Performance Recommendation [2]
Reference Sensitivity	§2.1.4	§3.1.4
Faded Reference Sensitivity	§2.1.5	§3.1.5
Adjacent Channel Rejection	§2.1.7	§3.1.7
Co-Channel Rejection	§2.1.8	§3.1.8
Spurious Response Rejection	§2.1.9	§3.1.9
Intermodulation Rejection	§2.1.10	§3.1.10
Signal Displacement Bandwidth	§2.1.11	§3.1.11

**Table 17. Trunked Mode Fixed Station Transmitter Tests (FDMA)**

Trunked Station Transmitter Tests	Method of Measurement [1]	Performance Recommendation [2]
Unwanted Emissions: Adjacent Channel Power Ratio	§2.2.8	§3.2.8
Transmitter Throughput Delay <sup>7</sup>	§2.2.14	§3.2.14

<sup>4</sup> These tests apply to fixed stations that provide an audio (analog) output.

<sup>5</sup> Measurement method necessitates both trunking infrastructure and subscriber equipment.

<sup>6</sup> These tests apply to fixed stations that provide an audio (analog) input.

<sup>7</sup> Measurement method necessitates both trunking infrastructure and subscriber equipment.

Trunked Station Transmitter Tests	Method of Measurement [1]	Performance Recommendation [2]
Frequency Deviation for C4FM	§2.2.15	§3.2.15
Modulation Fidelity	§2.2.16	§3.2.16
Transient Frequency Behavior	§2.2.18	§3.2.18

**Table 18. Trunked Mode Infrastructure Trunked Tests (FDMA)**

Trunking Infrastructure Tests	Method of Measurement [1]	Performance Recommendation [2]
Time to Grant <sup>8</sup>	§2.3.4	§3.3.4

**2.2.1.3 Trunked Mode Fixed Station Operation TDMA**

**Table 19. Trunked Mode Fixed Station Receiver Tests (TDMA)**

Trunking Station Receiver Tests	Method of Measurement [6]	Performance Recommendation [7]
Reference Sensitivity	§2.1.4	§3.1.4
Faded Reference Sensitivity	§2.1.5	§3.1.5
Adjacent Channel Rejection	§2.1.7	§3.1.7
Co-Channel Rejection	§2.1.8	§3.1.8
Spurious Response Rejection	§2.1.9	§3.1.9
Intermodulation Rejection	§2.1.10	§3.1.10
Signal Displacement Bandwidth	§2.1.11	§3.1.11

**Table 20. Trunked Mode Fixed Station Transmitter Tests (TDMA)**

Trunked Station Transmitter Tests	Method of Measurement [6]	Performance Recommendation [7]
Unwanted Emissions: Adjacent Channel Power Ratio	§2.2.8	§3.2.8
Modulation Fidelity	§2.2.13	§3.2.13
Symbol Rate Accuracy	§2.2.14	§3.2.14

**2.2.2 Conformance**

**2.2.2.1 Basic Conventional Mode Operation**

No tests defined or required at this time.

**2.2.2.2 Advanced Conventional Mode Operation**

No tests defined or required at this time.

**2.2.2.3 Basic Trunked Mode Operation**

No tests defined or required at this time.

**2.2.2.4 Advanced Trunked Mode Operation**

No tests defined or required at this time.

**2.2.3 Interoperability**

**2.2.3.1 Conventional Mode FNE Operation**

P25 FNE, or repeaters, capable of conventional mode operation shall be tested for interoperability in accordance with TIA-102.CABA [4]. FNE must be tested against at least three of the commercially available, band-compatible conventional-mode-capable SUs, where each SU is from a different manufacturer.

**Table 21. Conventional Interoperability FNE Tests – Repeat Mode**

<b>Conventional Interoperability Tests – Repeat Mode (SU to FNE to SU)</b>	<b>Normative Test [4]</b>
<b>Matching NAC Operation and SU Unaddressed Voice Call</b>	<b>§2.4.1</b>
Test Case 1 – Matching NAC operation – Unaddressed Voice Call	§2.4.1.4.1
<b>Matching NAC Operation – SU Routine Group Call Mode</b>	<b>§2.4.2</b>
Test Case 1 – Matching NAC – SU Routine Group Call Mode	§2.4.2.4.1
<b>Transmit NAC Independent of Receive NAC – SU Unaddressed Voice Call</b>	<b>§2.4.3</b>
Test Case 1 – Independent NAC Operation – SU Unaddressed Voice Call	§2.4.3.4.1
<b>Transmit NAC Independent of Receive NAC – SU Routine Group Call</b>	<b>§2.4.4</b>
Test Case 1 – Independent NAC Operation – SU Routine Group Call	§2.4.4.4.1
<b>Any NAC (\$F7F) Operation – SU Unaddressed Voice Call</b>	<b>§2.4.5</b>
Test Case 1 – NAC \$F7F Operation – SU Unaddressed Voice Call	§2.4.5.4.1
<b>Any NAC (\$F7F) Operation – SU Routine Group Call</b>	<b>§2.4.6</b>
Test Case 1 – NAC \$F7F Operation – SU Routine Group Call	§2.4.6.4.1
<b>Any NAC (\$F7F) Operation with Fixed Transmit NAC – SU Group Call</b>	<b>§2.4.7</b>
Test Case 1 – NAC \$F7F Operation – SU Group Call	§2.4.7.4.1
<b>Emergency Call</b>	<b>§2.4.8</b>
Test Case 1 – Emergency Call	§2.4.8.4.1
<b>Monitor Mode – SU Group Call</b>	<b>§2.4.9</b>
Test Case 1 – Monitor Mode – Receiving Group Call	§2.4.9.4.1
<b>Unit-to-Unit Voice Call</b>	<b>§2.4.10</b>

<b>Conventional Interoperability Tests – Repeat Mode (SU to FNE to SU)</b>	<b>Normative Test [4]</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.4.10.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.4.10.4.2
Test Case 3 – Initiate Unit-to-Unit Call from SU 1, No Co-Channel Interference Suppression	§2.4.10.4.3
Test Case 4 – Initiate Unit-to-Unit Call from SU 5, No Co-Channel Interference Suppression	§2.4.10.4.4
<b>Unit-to-Unit Voice Call Co-Channel Interference Suppression by FNE</b>	<b>§2.4.11</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.4.11.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.4.11.4.2
<b>Unit-to-Unit Voice Call – Receiving Units Also in Monitor Mode</b>	<b>§2.4.12</b>
Test Case 1 – Initiate Unit-to-Unit Call from SU 1	§2.4.12.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 5	§2.4.12.4.2
<b>Encryption</b>	<b>§2.4.13</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.4.13.4.1
<b>Accept Any NAC in Normal and Selective Squelch Mode – SU Group Call</b>	<b>§2.4.14</b>
Test Case 1 – Receiving group Call with receive NAC \$F7F under Normal and Selective Squelch Modes	§2.4.14.4.1
<b>Call Alert</b>	<b>§2.5.1</b>
Test Case 1 – Initiate Call Alert Request from SU 1	§2.5.1.4.1
Test Case 2 – Initiate Call Alert Request from SU 5	§2.5.1.4.2
<b>Radio Check</b>	<b>§2.5.2</b>
Test Case 1 – Initiate Radio Check from SU 1	§2.5.2.4.1
Test Case 2 – Initiate Radio Check from SU 5	§2.5.2.4.2
<b>Message Update</b>	<b>§2.5.3</b>
Test Case 1 – Message Update Initiated by SU 1	§2.5.3.4.1
Test Case 2 – Message Update Initiated by SU 5	§2.5.3.4.2
Test Case 3 – SU 1 to Group Message Update	§2.5.3.4.3
Test Case 4 – SU 5 to Group Message Update	§2.5.3.4.4
<b>Status Update</b>	<b>§2.5.4</b>
Test Case 1 – Status Update Initiated by SU 1	§2.5.4.4.1
Test Case 2 – Status Update Initiated by SU 5	§2.5.4.4.2
Test Case 3 – SU to Talk Group Status Update Initiated by SU 1	§2.5.4.4.3
Test Case 4 – SU to Talk Group Status Update Initiated by SU 5	§2.5.4.4.4
<b>Status Query</b>	<b>§2.5.5</b>
Test Case 1 – Status Query Initiated by SU 1	§2.5.5.4.1

<b>Conventional Interoperability Tests – Repeat Mode (SU to FNE to SU)</b>	<b>Normative Test [4]</b>
Test Case 2 – Status Query Initiated by SU 5	§2.5.5.4.2
<b>Radio Unit Monitor</b>	<b>§2.5.6</b>
Test Case 1 – Radio Unit Monitor Initiated by SU 1 – Group Call	§2.5.6.4.1
Test Case 2 – Radio Unit Monitor Initiated by SU 5 – Group Call	§2.5.6.4.2
Test Case 3 – Radio Unit Monitor Initiated by SU 1 – Unit-to-Unit Call	§2.5.6.4.3
Test Case 4 – Radio Unit Monitor Initiated by SU 5 – Unit-to-Unit Call	§2.5.6.4.4

**Table 22. Conventional Interoperability FNE Tests – FNE Includes Dispatch Consoles Mode**

<b>Conventional Interoperability Tests – FNE Includes Dispatch and other Monitoring Consoles (Repeat Mode (SU to FNE to SU) or Direct Mode)</b>	<b>Normative Test [4]</b>
<b>Unaddressed Voice Call</b>	<b>§2.6.1</b>
Test Case 1 – Unaddressed Voice Call	§2.6.1.4.1
<b>Routine Group Call</b>	<b>§2.6.2</b>
Test Case 1 – Routine Group Call	§2.6.2.4.1
<b>Emergency Call</b>	<b>§2.6.3</b>
Test Case 1 – Emergency Call from SU	§2.6.3.4.1
Test Case 2 – Emergency Call from DMC	§2.6.3.4.2
<b>All Call (System-Wide Call)</b>	<b>§2.6.4</b>
Initiate System-Wide Call to Collection of Talk Groups	§2.6.4.4.1
<b>Unit-to-Unit Voice Call</b>	<b>§2.6.5</b>
Test Case 1 – Initiate Unit-to-Unit Call from DMC	§2.6.5.4.1
Test Case 2 – Initiate Unit-to-Unit Call from SU 1	§2.6.5.4.2
<b>Encryption</b>	<b>§2.6.6</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.6.6.4.1
<b>Emergency Alarm to Dispatch and/or other Monitoring Console</b>	<b>§2.7.1</b>
Test Case 1 – Emergency Alarm	§2.7.1.4.1
<b>Call Alert</b>	<b>§2.7.2</b>
Test Case 1 – Initiate Call Alert Request from DMC	§2.7.2.4.1
Test Case 2 – Initiate Call Alert Request from SU 1	§2.7.2.4.2
<b>Radio Check</b>	<b>§2.7.3</b>
Test Case 1 – Initiate Radio Check from DMC	§2.7.3.4.1
<b>Radio Unit Inhibit</b>	<b>§2.7.4</b>
Test Case 1 – Radio Unit Inhibit from DMC	§2.7.4.4.1
<b>Radio Unit Uninhibit</b>	<b>§2.7.5</b>

<b>Conventional Interoperability Tests – FNE Includes Dispatch and other Monitoring Consoles (Repeat Mode (SU to FNE to SU) or Direct Mode)</b>	<b>Normative Test [4]</b>
Test Case 1 – Radio Unit Uninhibit from DMC	§2.7.5.4.1
<b>Message Update</b>	<b>§2.7.6</b>
Test Case 1 – Message Update from DMC	§2.7.6.4.1
Test Case 2 – DMC to Group Message Update	§2.7.6.4.2
Test Case 3 – SU 1 to DMC Message Update	§2.7.6.4.3
Test Case 4 – SU 1 to Group Message Update	§2.7.6.4.4
<b>Status Update</b>	<b>§2.7.7</b>
Test Case 1 – Status Update from SU 1 to DMC	§2.7.7.4.1
Test Case 2 – Talk Group Status Update Initiated by SU 1	§2.7.7.4.2
<b>Status Query</b>	<b>§2.7.8</b>
Test Case 1 – Status Query Initiated by DMC	§2.7.8.4.1
<b>Radio Unit Monitor</b>	<b>§2.7.9</b>
Test Case 1 – Radio Unit Monitor Initiated by DMC – Group Call	§2.7.9.4.1
Test Case 2 – Radio Unit Monitor Initiated by DMC – Unit-to-Unit Call	§2.7.9.4.2

### 2.2.3.2 *Trunked Mode FNE Operation*

P25 trunked infrastructure shall be interoperability tested in accordance with TIA-102.CABC-B [3] for FDMA and TIA-102.CABC-B-1 [5] for TDMA. Trunked infrastructure must be tested against at least three of the commercially available, band-compatible SUs, where each SU is from a different manufacturer. SUs that are in the same model class shall count as one compatible test subject. A model class is defined by the manufacturer as a product having identical P25 functionality. Tests are to be executed in each of the home and roaming configurations provided in TIA-102.CABC-B [3] Section 2.1.1.1 unless noted that the configuration is unsupported by the manufacturer.

**Table 23. Trunking Interoperability FNE Tests (FDMA)**

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3]</b>
<b>Full Registration</b>	<b>§2.2.1</b>
Test Case 1 – Valid Registration	§2.2.1.4.1
Test Case 2 – Denied or Refused Registration	§2.2.1.4.2
Test Case 3 – Unverified Registration	§2.2.1.4.3
<b>Group Voice Call</b>	<b>§2.2.2</b>
Test Case 1 – Group Call Granted	§2.2.2.4.1
Test Case 2 – Group Call Denied	§2.2.2.4.2
Test Case 3 – Group Call Request Queued	§2.2.2.4.3
<b>Unit-to-Unit Voice Call</b>	<b>§2.2.3</b>

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3]</b>
Test Case 1 – Unit-to-Unit Call with Target Availability Check	§2.2.3.4.1
Test Case 2 – Unit-to-Unit Call with Target Availability Check Denied by Target	§2.2.3.4.2
Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check	§2.2.3.4.3
Test Case 4 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check	§2.2.3.4.4
Test Case 5 – Unit-to-Unit Call without Target Availability Check	§2.2.3.4.5
Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check	§2.2.3.4.6
Test Case 7 – Unit-to-Unit Call Denied	§2.2.3.4.7
<b>Broadcast Voice Call</b>	<b>§2.2.4</b>
Test Case 1 – Broadcast Voice Call	§2.2.4.4.1
<b>Affiliation</b>	<b>§2.2.5</b>
Test Case 1 – Radio Permitted to Affiliate with New Group	§2.2.5.4.1
Test Case 2 – Radio Denied Affiliation to New Group	§2.2.5.4.2
<b>Announcement Group Call</b>	<b>§2.2.6</b>
Test Case 1 – Collection of Talk Groups Receive Call	§2.2.6.4.1
<b>Emergency Alarm</b>	<b>§2.2.7</b>
Test Case 1 – Emergency Alarm	§2.2.7.4.1
<b>Emergency Group Call</b>	<b>§2.2.8</b>
Test Case 1 – Emergency Call	§2.2.8.4.1
<b>Encryption</b>	<b>§2.2.10</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.2.10.4.1
<b>Intra-Location Registration Area Roaming</b>	<b>§2.2.11</b>
Test Case 1 – Idle Radio	§2.2.11.4.1

**Table 24. Trunking Interoperability FNE Tests (TDMA)**

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3,5]</b>
<b>Full Registration</b>	<b>§2.2.1</b>
Test Case 1 – Valid Registration	§2.2.1.4.1
Test Case 2 – Denied or Refused Registration	§2.2.1.4.2
Test Case 3 – Unverified Registration	§2.2.1.4.3
<b>Group Voice Call</b>	<b>§2.2.2</b>
Test Case 1 – Group Call Granted	§2.2.2.4.1
Test Case 2 – Group Call Denied	§2.2.2.4.2

<b>Trunking Interoperability Tests</b>	<b>Normative Test [3,5]</b>
Test Case 3 – Group Call Request Queued	§2.2.2.4.3
<b>Unit-to-Unit Voice Call</b>	<b>§2.2.3</b>
Test Case 1 – Unit-to-Unit Call with Target Availability Check	§2.2.3.4.1
Test Case 2 – Unit-to-Unit Call with Target Availability Check Denied by Target	§2.2.3.4.2
Test Case 3 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment After Target Availability Check	§2.2.3.4.3
Test Case 4 – Unit-to-Unit Call Queued with Target Availability Check – Traffic Channel Assignment Before Target Availability Check	§2.2.3.4.4
Test Case 5 – Unit-to-Unit Call without Target Availability Check	§2.2.3.4.5
Test Case 6 – Unit-to-Unit Call Queued without Target Availability Check	§2.2.3.4.6
Test Case 7 – Unit-to-Unit Call Denied	§2.2.3.4.7
<b>Broadcast Voice Call</b>	<b>§2.2.4</b>
Test Case 1 – Broadcast Voice Call	§2.2.4.4.1
<b>Affiliation</b>	<b>§2.2.5</b>
Test Case 1 – Radio Permitted to Affiliate with New Group	§2.2.5.4.1
Test Case 2 – Radio Denied Affiliation to New Group	§2.2.5.4.2
<b>Announcement Group Call</b>	<b>§2.2.6</b>
Test Case 1 – Collection of Talk Groups Receive Call	§2.2.6.4.1
<b>Emergency Alarm</b>	<b>§2.2.7</b>
Test Case 1 – Emergency Alarm	§2.2.7.4.1
<b>Emergency Group Call</b>	<b>§2.2.8</b>
Test Case 1 – Emergency Call	§2.2.8.4.1
<b>Encryption</b>	<b>§2.2.10</b>
Test Case 1 – Call Privacy for Encrypted Call	§2.2.10.4.1
<b>Intra-Location Registration Area Roaming</b>	<b>§2.2.11</b>
Test Case 1 – Idle Radio	§2.2.11.4.1

### 3 Reference of Baseline Common Air Interface Compliance Assessment Tests

To provide further clarity regarding the tests that will be performed based on this CAB, it is important that both public safety and industry reference the tests in a common fashion, especially in STR and SDOC documents. To facilitate this commonality, the following table provides a means by which to refer to a particular set of tests.

**Table 25. Reference for P25 Baseline Common Air Interface Tests**

<b>Section</b>	<b>Reference</b>
2.1.1.1	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.1.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Performance
2.1.1.2	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.1.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Performance
2.1.2.1	25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.2.1 – Project 25 Phase 1 Common Air Interface Basic Conventional Subscriber Unit Conformance
2.1.2.2	25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.2.2 – Project 25 Phase 1 Common Air Interface Advanced Conventional Subscriber Unit Conformance
2.1.2.3	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.2.3 – Project 25 Phase 1 Common Air Interface Basic Trunked Subscriber Unit Conformance
2.1.2.4	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.2.4 – Project 25 Phase 1 Common Air Interface Advanced Trunked Subscriber Unit Conformance
2.1.3.1	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.3.1 – Project 25 Phase 1 Common Air Interface Conventional Subscriber Unit Interoperability
2.1.3.2	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.1.3.2 – Project 25 Phase 1 Common Air Interface Trunked Subscriber Unit Interoperability
2.2.1.1	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Performance
2.2.1.2	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Base Station/Repeater Performance
2.2.2.1	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.2.1 – Project 25 Phase 1 Common Air Interface Basic Conventional Base Station/Repeater Conformance
2.2.2.2	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.2.2 – Project 25 Phase 1 Common Air Interface Advanced Conventional Base Station/Repeater Conformance
2.2.2.3	25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.2.3 – Project 25 Phase 1 Common Air Interface Basic Trunked Base Station/Repeater Conformance
2.2.2.4	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.2.4 – Project 25 Phase 1 Common Air Interface Advanced Trunked Base Station/Repeater Conformance
2.2.3.1	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Interoperability
2.2.3.2	P25-CAB-CAI_TEST_REQ – August 2016, Section 2.2.3.2 – Project 25 Phase 1 Common Air Interface Trunked Base Station/Repeater Interoperability

## 4 Exceptions

The preceding sections provide the tests that are required as part of the P25 CAP. Exceptions to these test requirements are possible, on a case-by-case basis, at the discretion of the P25 CAP Advisory Panel. Exceptions will be noted by date, test and — as appropriate — duration in this section of the CAB.

**Table 26. P25 CAP Common Air Interface Exceptions**

Exception	Date	Reference
1	TBD 2016	NONE. When necessary, this column references this CAB and the excepted section according to the convention used in the Reference column in Table 18.

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