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Security**

Science and Technology

Office for Interoperability and Compatibility

Project 25 Compliance Assessment Bulletin

Project 25 Compliance Assessment Program
Baseline Inter-Radio Frequency Sub-System
Interface and Console Sub-System Interface
Conformance Testing Requirements

P25-CAB-ISSI-CSSI_CONFORMANCE_TEST_REQ

May 2019

Notice of Disclaimer and Limitation of Liability

The Project 25 Compliance Assessment Program (P25 CAP) provides equipment purchasers demonstrated evidence of a product’s compliance with a select group of requirements defined in the suite of P25 Standard. 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 users’ needs. P25 CAP-mandated tests only demonstrate product compliance with the tested features 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. |
| Draft (For PC) | 3/3/2015 | Final release version for public comment (PC) approved on March 3, 2015. Posted for PC 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. |
| 2018 draft release (For PC) | 11/27/2018 | Addresses changes in Conformance testing; TDMA testing and Console testing added. Posted for PC on February 11, 2019. |
| 2019 Release | 5/31/2019 | Addresses changes based on comments received from February 11, 2019 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 demonstrate their products' compliance with selected 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 conducted by the approved accreditation bodies.¹ Such a process promotes the user community's confidence in, and acceptance of, test results from DHS-recognized laboratories. All equipment suppliers that participate in the P25 CAP must use DHS-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 Compliance Assessment Subcommittee, 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 grantees using federal funds to purchase P25 equipment should obtain evidence that the equipment has been tested in a manner consistent with P25 CAP. The evidence should show the equipment has been tested based on all of the applicable, published P25 CAP Compliance Assessment Bulletins (CAB) covering performance, conformance and interoperability. The SDOC documents posted to the dhs.gov/science-and-technology/p25-cap website provides that evidence. This CAB lists test cases for the P25 Console Sub-System Interface (CSSI) and the P25 Inter Sub-System Interface (ISSI).

1.2 Effective Date

This Compliance Assessment Bulletin becomes effective on May 31, 2019.

¹ American Association for Laboratory Accreditation (A2LA); ANSI-ASQ National Accreditation Board (ANAB); International Accreditation New Zealand (IANZ)

1.3 Normative References

- [1] [P25-CAB-ISSI-RFSS_CONF_TEST_CASES] *Conformance Test Cases for the Inter-RF Sub-System Interface (ISSI) with Radio Frequency Sub-System (RFSS)*
- [2] [P25-CAB-CSSI-RFSS_CONF_TEST_CASES] *Conformance Test Cases for the Console Sub-System Interface (CSSI) with Radio Frequency Sub-System (RFSS)*
- [3] [P25-CAB-CSSI-CSS_CONF_TEST_CASES] *Conformance Test Cases for the Console Sub-System Interface (CSSI) with Console Sub-System (CSS)*
- [4] ISSI CSSI Equipment Test SDOC template²
- [5] ISSI CSSI Equipment Test STR template³

1.4 Conformance Test Tool

Test Tool Name: P25 ISSI-CSSI Conformance Tester

Test Tool Model Number: M1

Test Tool Software Version: 3.0

Manufacturer: Valid8 (<https://www.valid8.com/>)

Documentation: P25 ISSI-CSSI Conformance Tester users guide

1.5 Abbreviations

| | |
|---------|--|
| CSS | Console Sub System |
| CSSI | Console Sub System Interface |
| ISSI | Inter Sub System Interface |
| P25 | Project 25 |
| P25 CAP | Project 25 Compliance Assessment Program |
| RFSS | Radio Frequency Sub System |
| RTP | Real Time Protocol |
| SDOC | Supplier's Declaration of Compliance |
| SDP | Session Description Protocol |
| SIP | Session Initiation Protocol |
| STR | Summary Test Report |
| WACN | Wide Area Communications Network |

2 P25 CAP Conformance Testing Overview

2.1 Scope of Testing

P25 CAP ISSI/CSSI Conformance testing will validate the FNE equipment under test portion of the SIP, SDP and RTP messages that are exchanged during specific test cases between the FNE equipment under test and the conformance test tool.

The conformance test tool solution enables conformance testing of these interfaces in the P25 public safety network. The test tool simulates RFSSs, console subscriber units and mobile subscriber units to test FNE equipment with the P25 ISSI/CSSI interfaces.

² STR template available on request. Send request for ISSI CSSI STR template to P25CAP@hq.dhs.gov.

³ SDOC template available on request. Send request for ISSI CSSI SDOC template to P25CAP@hq.dhs.gov.

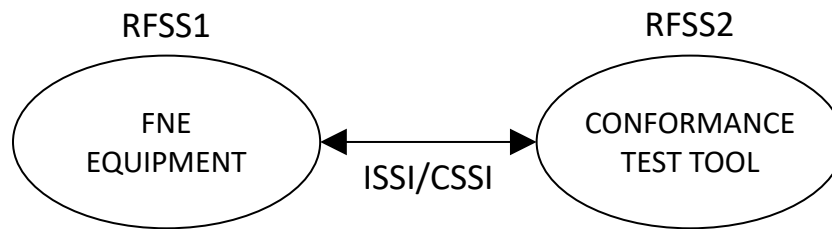


Figure 1. Conformance Test Diagram

2.2 Testing Methodology

The FNE equipment under test is always referenced as RFSS1 in the test cases. The conformance test tool will always be referenced as RFSS2. As appropriate, the equipment under test will be configured and tested as a group home RFSS and group serving RFSS. For group voice test cases and unit to unit voice test cases, the equipment will be tested for the full rate vocoder mode (FDMA) and the half rate vocoder mode (TDMA). As appropriate, the equipment under test will be configured and tested for supplementary data services. See references [1], [2] and [3] for more details.

2.3 'Equipment Under Test' Configurations

Three Equipment Under Test configurations are recognized in P25 CAP Conformance testing for ISSI/CSSI equipment: ISSI testing for RFSS equipment, CSSI testing for RFSS equipment, and CSSI testing for console equipment.

Two different console configurations can be conformance tested. A 'console' based on CSS equipment is testable. A 'CSS-based console' is essentially a console with RFSS equipment but the equipment does not support RF sites. A 'console' that is integrated with a RFSS that does support RF sites is also testable and has been referred to as a 'native console.' Conformance testing for either console configuration is limited to Group Serving roles.

As appropriate, the equipment under test will initiate the test case, i.e., the equipment initiates the test case by transmitting to the test tool. The equipment under test will also be the target of the test case, i.e., the test tool initiates the test case by transmitting to the equipment.

When a CSSI or an ISSI of a RFSS is under test, and the test case calls for the RFSS to initiate the test case, it is expected that a mobile subscriber unit (registered to the RFSS under test) would initiate the test case. If appropriate for the test case, the mobile subscriber unit would also be affiliated to the subscriber group being used for the test.

When a CSSI of a console is under test, and the test case calls for the console to initiate the test case, it is expected that a console subscriber unit would initiate the test case. If appropriate for the test case, the console subscriber unit would also be affiliated to the subscriber group being used for the test.

When an ISSI of an RFSS is under test, the test tool simulates a Group Serving RFSS or a Group Home RFSS depending on the test case. The Inter-WACN or the Inter-System connection type can be used for ISSI testing.

When a CSSI of an RFSS is under test, the test tool simulates a Group Serving Console role. The Inter-WACN, Inter-System or Intra-System connection type can be used for testing.

When a CSSI of a console is under test, the test tool simulates a Group Home RFSS. The Inter-WACN, Inter-System or Intra-System connection type can be used for testing.

2.4 Test Case Documentation

The test cases for ISSI/CSSI conformance testing are document in the separate documents listed below.

The test cases for ISSI testing of a RFSS are found in [P25-CAB-ISSI-RFSS_CONF_TEST_CASES] *Conformance Test Cases for the Inter-RF Sub-System Interface (ISSI) with Radio Frequency Sub-System (RFSS)*. This is reference [1].

The test cases for CSSI testing of a RFSS are found in [P25-CAB-CSSI-RFSS_CONF_TEST_CASES] *Conformance Test Cases for the Console Sub-System Interface (CSSI) with Radio Frequency Sub-System (RFSS)*. This is reference [2].

The test cases for CSSI testing of a Console are found in [P25-CAB-CSSI-CSS_CONF_TEST_CASES] *Conformance Test Cases for the Console Sub-System Interface (CSSI) with Console Sub-System (CSS)*. This is reference [3].

3 ISSI Conformance Testing Requirements

3.1 Full Rate Group Voice Services

The ISSI test cases in Table 2 apply to Radio Frequency Sub-System (RFSS) testing. All the test cases shall be tested. Testing can be executed when the ISSI is configured as an Inter-WACN connection type or an Inter-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 1 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 2.

Table 1. Required PASS Test Case Numbers

| | | | | | |
|-------|-------|-------|-------|-------|-------|
| 3.2.1 | 3.2.2 | 3.4.1 | 3.4.2 | 3.5.1 | 3.5.2 |
| 3.6.1 | 3.6.2 | 3.7.1 | 3.7.2 | 3.8.1 | 3.8.2 |

The ISSI full rate group voice services shall be tested for conformance in accordance with the test cases in P25-CAB-ISSI-RFSS_CONF_TEST_CASES [1].

Table 2. ISSI-RFSS Full Rate Group Voice Conformance Test Cases

| Test Cases [1] | ISSI-RFSS Full Rate Group Voice Conformance Test Case Descriptions |
|----------------|--|
| 3.1 | Full Rate Unconfirmed Group Call - Group Home Role |
| 3.1.1 | RFSS Initiates Unconfirmed Group Call |
| 3.1.2 | RFSS Receives Unconfirmed Group Call |
| 3.2 | Full Rate Emergency Unconfirmed Group Call - Group Home Role |
| 3.2.1 | ** RFSS Initiates Emergency Unconfirmed Group Call |
| 3.2.2 | ** RFSS Receives Emergency Unconfirmed Group Call |
| 3.3 | Full Rate Unconfirmed Group Call - Group Serving Role |
| 3.3.1 | RFSS Initiates Unconfirmed Group Call |
| 3.3.2 | RFSS Receives Unconfirmed Group Call |
| 3.4 | Full Rate Emergency Unconfirmed Group Call - Group Serving Role |
| 3.4.1 | ** RFSS Initiates Emergency Unconfirmed Group Call |
| 3.4.2 | ** RFSS Receives Emergency Unconfirmed Group Call |

| Test Cases [1] | ISSI-RFSS Full Rate Group Voice Conformance Test Case Descriptions |
|----------------|--|
| 3.5 | Full Rate Confirmed Group Call - Group Home Role - Delayed Resources |
| 3.5.1 | ** RFSS Initiates Confirmed Group Call |
| 3.5.2 | ** RFSS Receives Confirmed Group Call |
| 3.6 | Full Rate Confirmed Group Call - Group Serving Role - Delayed Resources |
| 3.6.1 | ** RFSS Initiates Confirmed Group Call |
| 3.6.2 | ** RFSS Receives Confirmed Group Call |
| 3.7 | Full Rate Confirmed Group Call - Group Home Role - No Resources |
| 3.7.1 | ** RFSS Initiates Confirmed Group Call |
| 3.7.2 | ** RFSS Receives Confirmed Group Call |
| 3.8 | Full Rate Confirmed Group Call - Group Serving Role - No Resources |
| 3.8.1 | ** RFSS Initiates Confirmed Group Call |
| 3.8.2 | ** RFSS Receives Confirmed Group Call |

3.2 Half Rate Group Voice Services

The ISSI test cases in Table 4 apply to Radio Frequency Sub-System (RFSS) testing. All the test cases shall be tested. Testing can be executed when the ISSI is configured as an Inter-WACN connection type or an Inter-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 3 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 4.

Table 3. Required PASS Test Case Numbers

| | | | | | |
|-------|-------|-------|-------|-------|-------|
| 4.2.1 | 4.2.2 | 4.4.1 | 4.4.2 | 4.5.1 | 4.5.2 |
| 4.6.1 | 4.6.2 | 4.7.1 | 4.7.2 | 4.8.1 | 4.8.2 |

The ISSI half rate group voice services shall be tested for conformance in accordance with the test cases in P25-CAB-ISSI-RFSS_CONF_TEST_CASES [1].

Table 4. ISSI-RFSS Half Rate Group Voice Conformance Test Cases

| Test Cases [1] | ISSI-RFSS Half Rate Group Voice Conformance Test Case Descriptions |
|----------------|--|
| 4.1 | Half Rate Unconfirmed Group Call - Group Home Role |
| 4.1.1 | RFSS Initiates Unconfirmed Group Call |
| 4.1.1 | RFSS Receives Unconfirmed Group Call |
| 4.2 | Half Rate Emergency Unconfirmed Group Call - Group Home Role |
| 4.2.1 | ** RFSS Initiates Emergency Unconfirmed Group Call |
| 4.2.2 | ** RFSS Receives Emergency Unconfirmed Group Call |
| 4.3 | Half Rate Unconfirmed Group Call - Group Serving Role |
| 4.3.1 | RFSS Initiates Unconfirmed Group Call |
| 4.3.2 | RFSS Receives Unconfirmed Group Call |
| 4.4 | Half Rate Emergency Unconfirmed Group Call - Group Serving Role |
| 4.4.1 | ** RFSS Initiates Emergency Unconfirmed Group Call |

| Test Cases [1] | ISSI-RFSS Half Rate Group Voice Conformance Test Case Descriptions |
|----------------|--|
| 4.4.2 | ** RFSS Receives Emergency Unconfirmed Group Call |
| 4.5 | Half Rate Confirmed Group Call - Group Home Role - Delayed Resources |
| 4.5.1 | ** RFSS Initiates Confirmed Group Call |
| 4.5.2 | ** RFSS Receives Confirmed Group Call |
| 4.6 | Half Rate Confirmed Group Call - Group Serving Role - Delayed Resources |
| 4.6.1 | ** RFSS Initiates Confirmed Group Call |
| 4.6.2 | ** RFSS Receives Confirmed Group Call |
| 4.7 | Half Rate Confirmed Group Call - Group Home Role - No Resources |
| 4.7.1 | ** RFSS Initiates Confirmed Group Call |
| 4.7.2 | ** RFSS Receives Confirmed Group Call |
| 4.8 | Half Rate Confirmed Group Call - Group Serving Role - No Resources |
| 4.8.1 | ** RFSS Initiates Confirmed Group Call |
| 4.8.2 | ** RFSS Receives Confirmed Group Call |

3.3 Supplementary Data Services

The ISSI test cases in Table 6 apply to Radio Frequency Sub-System (RFSS) testing. All the test cases shall be tested. Testing can be executed when the ISSI is configured as an Inter-WACN connection type or an Inter-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 5 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 6.

Table 5. Required PASS Test Case Numbers

| | | | | | |
|-------|-------|-------|-------|-------|-------|
| 5.1.1 | 5.1.2 | 5.2.1 | 5.2.2 | 5.3.1 | 5.3.2 |
|-------|-------|-------|-------|-------|-------|

The ISSI supplementary data services shall be tested for conformance in accordance with the test cases in P25-CAB-ISSI-RFSS_CONF_TEST_CASES [1].

Table 6. ISSI-RFSS Supplementary Data Conformance Test Cases

| Test Cases [1] | ISSI-RFSS Supplementary Data Conformance Test Case Descriptions |
|----------------|---|
| 5.1 | Emergency Alarm |
| 5.1.1 | ** Emergency Alarm initiated by a mSU Home to RFSS1 and Registered in RFSS2; Group Home RFSS 2 |
| 5.1.2 | ** Emergency Alarm initiated by a mSU Home to RFSS2 and Registered in RFSS1; Group Home RFSS 1 |
| 5.2 | Emergency Alarm Cancel |
| 5.2.1 | ** Emergency Alarm Cancel initiated by a mSU Home to RFSS1 and Registered in RFSS2; Group Home RFSS 2 |
| 5.2.2 | ** Emergency Alarm Cancel initiated by a mSU Home to RFSS2 and Registered in RFSS1; Group Home RFSS 1 |
| 5.3 | Group Emergency Cancel |

| Test Cases [1] | ISSI-RFSS Supplementary Data Conformance Test Case Descriptions |
|----------------|---|
| 5.3.1 | ** Group Emergency Cancel initiated by a mSU Home to RFSS1 and Registered in RFSS2; Group Home RFSS 2 |
| 5.3.2 | ** Group Emergency Cancel initiated by a mSU Home to RFSS2 and Registered in RFSS1; Group Home RFSS 1 |
| 5.4 | Call Alert |
| 5.4.1 | Call Alert from mSU1 to mSU2; mSU1 home to RFSS1 and registered in RFSS2; mSU2 home to RFSS2 and registered in RFSS1 |
| 5.4.2 | Call Alert from mSU2 to mSU1; mSU1 home to RFSS1 and registered in RFSS2; mSU2 home to RFSS2 and registered in RFSS1 |

4 CSSI Conformance Testing Requirements - RFSS

4.1 Full Rate Group Voice Services

The CSSI test cases in Table 8 apply to Radio Frequency Sub-System (RFSS) testing. All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 7 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 8.

Table 7. Required PASS Test Case Numbers

| | | |
|-------|-------|-------|
| 3.2.1 | 3.3.1 | 3.4.1 |
|-------|-------|-------|

The full rate group services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-RFSS_CONF_TEST_CASES [2].

Table 8. CSSI-RFSS Full Rate Group Voice Conformance Test Cases

| Test Cases [2] | CSSI-RFSS Full Rate Group Voice Conformance Test Case Descriptions |
|----------------|---|
| 3.1 | Full Rate Unconfirmed Group Call - Group Home Role |
| 3.1.1 | RFSS Initiates Unconfirmed Group Call |
| 3.1.2 | RFSS Receives Unconfirmed Group Call |
| 3.2 | Full Rate Emergency Unconfirmed Group Call - Group Home Role |
| 3.2.1 | ** RFSS Initiates Emergency Unconfirmed Group Call |
| 3.3 | Full Rate Confirmed Group Call - Group Home Role - Delayed Resources |
| 3.3.1 | ** RFSS Receives Confirmed Group Call |
| 3.4 | Full Rate Confirmed Group Call - Group Home Role - No Resources |
| 3.4.1 | ** RFSS Receives Confirmed Group Call |

4.2 Half Rate Group Voice Services

The CSSI test cases in Table 10 apply to Radio Frequency Sub-System (RFSS) testing. All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 9 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 10.

Table 9. Required PASS Test Case Numbers

| | | |
|-------|-------|-------|
| 4.2.1 | 4.3.1 | 4.4.1 |
|-------|-------|-------|

The half rate group services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-RFSS_CONF_TEST_CASES [2].

Table 10. CSSI-RFSS Half Rate Group Voice Conformance Test Cases

| Test Cases [2] | CSSI-RFSS Half Rate Group Voice Conformance Test Case Descriptions |
|----------------|---|
| 4.1 | Half Rate Unconfirmed Group Call - Group Home Role |
| 4.1.1 | RFSS Initiates Unconfirmed Group Call |
| 4.1.2 | RFSS Receives Unconfirmed Group Call |
| 4.2 | Half Rate Emergency Unconfirmed Group Call - Group Home Role |
| 4.2.1 | ** RFSS Initiates Emergency Unconfirmed Group Call |
| 4.3 | Half Rate Confirmed Group Call - Group Home Role - Delayed Resources |
| 4.3.1 | ** RFSS Receives Confirmed Group Call |
| 4.4 | Half Rate Confirmed Group Call - Group Home Role - No Resources |
| 4.4.1 | ** RFSS Receives Confirmed Group Call |

4.3 Full Rate Unit To Unit Voice Services

The CSSI test cases in Table 11 apply to a Radio Frequency Sub-System (RFSS). All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

The full rate unit to unit voice services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-RFSS_CONF_TEST_CASES [2].

Table 11. CSSI-RFSS Full Rate Unit To Unit Voice Conformance Test Cases

| Test Cases [2] | CSSI-RFSS Full Rate Unit To Unit Voice Conformance Test Case Descriptions |
|----------------|--|
| 5.1 | RFSS1 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 5.1.1 | RFSS1 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 5.2 | RFSS2 (cSU) Initiated Unit to Unit Call with Target Availability Check |
| 5.2.1 | CSS2 (cSU) Initiated Unit to Unit Call with Target Availability Check |
| 5.3 | RFSS1 (mSU) Initiated Unit to Unit Call without Target Availability Check |
| 5.3.1 | RFSS1 (mSU) Initiated Unit to Unit Call without Target Availability Check |
| 5.4 | RFSS2 (cSU) Initiated Unit to Unit Call without Target Availability Check |

| Test Cases [2] | CSSI-RFSS Full Rate Unit To Unit Voice Conformance Test Case Descriptions |
|----------------|---|
| 5.4.1 | CSS2 (cSU) Initiated Unit to Unit Call without Target Availability Check |

4.4 Half Rate Unit To Unit Voice Services

The CSSI test cases in Table 12 apply to a Radio Frequency Sub-System (RFSS). All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

The half rate unit to unit voice services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-RFSS_CONF_TEST_CASES [2].

Table 12. CSSI-RFSS Half Rate Unit To Unit Voice Conformance Test Cases

| Test Cases [2] | CSSI-RFSS Half Rate Unit To Unit Voice Conformance Test case Descriptions |
|----------------|--|
| 6.1 | RFSS1 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 6.1.1 | RFSS1 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 6.2 | RFSS2 (cSU) Initiated Unit to Unit Call with Target Availability Check |
| 6.2.1 | CSS2 (cSU) Initiated Unit to Unit Call with Target Availability Check |
| 6.3 | RFSS1 (mSU) Initiated Unit to Unit Call without Target Availability Check |
| 6.3.1 | RFSS1 (mSU) Initiated Unit to Unit Call without Target Availability Check |
| 6.4 | RFSS2 (cSU) Initiated Unit to Unit Call without Target Availability Check |
| 6.4.1 | CSS2 (cSU) Initiated Unit to Unit Call without Target Availability Check |

4.5 Supplementary Data Services

The CSSI test cases in Table 14 apply to a Radio Frequency Sub-System (RFSS). All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 13 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 14.

Table 13. Required PASS Test Case Numbers

| | | | | |
|-------|-------|-------|-------|-------|
| 7.1.1 | 7.2.1 | 7.2.2 | 7.3.1 | 7.3.2 |
|-------|-------|-------|-------|-------|

The supplementary data services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-RFSS_CONF_TEST_CASES [2].

Table 14. CSSI-RFSS Supplementary Data Conformance Test Cases

| Test Cases [2] | CSSI-RFSS Supplementary Data Conformance Test Case Descriptions |
|----------------|---|
| 7.1 | Emergency Alarm |
| 7.1.1 | ** Emergency Alarm initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 1 |

| Test Cases [2] | CSSI-RFSS Supplementary Data Conformance Test Case Descriptions |
|----------------|--|
| 7.2 | Emergency Alarm Cancel |
| 7.2.1 | ** Emergency Alarm Cancel initiated by a cSU Home to RFSS2; Group Home RFSS 1 |
| 7.2.2 | ** Emergency Alarm Cancel initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 1 |
| 7.3 | Group Emergency Cancel |
| 7.3.1 | ** Group Emergency Cancel initiated by a cSU Home to RFSS2; Group Home RFSS 1 |
| 7.3.2 | ** Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 1 |
| 7.4 | Call Alert - RFSS1 (mSU) Initiated |
| 7.4.1 | Call Alert Initiated by a mSU Home to RFSS1 |
| 7.5 | Call Alert - RFSS2 (cSU) Initiated |
| 7.5.1 | Call Alert Initiated by a cSU Home to RFSS2 |

5 CSSI Conformance Testing Requirements - Console

5.1 Full Rate Group Voice Services

The CSSI test cases in Table 16 apply to a CSSBased Console or a Console integrated with a RFSS (native console). All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 15 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 16.

Table 15. Required PASS Test Case Numbers

| | | |
|-------|-------|-------|
| 3.2.1 | 3.3.1 | 3.4.1 |
|-------|-------|-------|

The full rate group services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-CSS_CONF_TEST_CASES [3].

Table 16. CSSI-CSS Full Rate Group Voice Conformance Test Cases

| Test Cases [3] | CSSI-CSS Full Rate Group Voice Conformance Test Case Descriptions |
|----------------|--|
| 3.1 | Full Rate Unconfirmed Group Call - Group Serving Role |
| 3.1.1 | Console Initiates Unconfirmed Group Call |
| 3.1.2 | Console Receives Unconfirmed Group Call |
| 3.2 | Full Rate Emergency Unconfirmed Group Call - Group Serving Role |
| 3.2.1 | ** Console Receives Emergency Unconfirmed Group Call |
| 3.3 | Full Rate Confirmed Group Call - Group Serving Role - Delayed Resources |
| 3.3.1 | ** Console Initiates Confirmed Group Call |
| 3.4 | Full Rate Confirmed Group Call - Group Serving Role - No Resources |

| Test Cases [3] | CSSI-CSS Full Rate Group Voice Conformance Test Case Descriptions |
|----------------|---|
| 3.4.1 | ** Console Initiates Confirmed Group Call |

5.2 Half Rate Group Voice Services

The CSSI test cases in Table 18 apply to a CSS-Based Console or a Console integrated with a RFSS (native console). All the test cases shall be tested. All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 17 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 18.

Table 17. Required PASS Test Case Numbers

| | | |
|-------|-------|-------|
| 4.2.1 | 4.3.1 | 4.4.1 |
|-------|-------|-------|

The half rate group services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-CSS_CONF_TEST_CASES [3].

Table 18. CSSI-CSS Half Rate Group Voice Conformance Test Cases

| Test Cases [3] | CSSI-CSS Half Rate Group Voice Conformance Test Case Descriptions |
|----------------|--|
| 4.1 | Half Rate Unconfirmed Group Call - Group Serving Role |
| 4.1.1 | Console Initiates Unconfirmed Group Call |
| 4.1.2 | Console Receives Unconfirmed Group Call |
| 4.2 | Half Rate Emergency Unconfirmed Group Call - Group Serving Role |
| 4.2.1 | ** Console Receives Emergency Unconfirmed Group Call |
| 4.3 | Half Rate Confirmed Group Call - Group Serving Role - Delayed Resources |
| 4.3.1 | ** Console Initiates Confirmed Group Call |
| 4.4 | Half Rate Confirmed Group Call - Group Serving Role - No Resources |
| 4.4.1 | ** Console Initiates Confirmed Group Call |

5.3 Full Rate Unit To Unit Voice Services

The CSSI test cases in Table 19 apply to a CSS-Based Console or a Console integrated with a RFSS (native console). All the test cases shall be tested. All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

The full rate unit to unit services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-CSS_CONF_TEST_CASES [3].

Table 19. CSSI-CSS Full Rate Unit To Unit Voice Conformance Test Cases

| Test Cases [3] | CSSI-CSS Full Rate Unit Voice Conformance Test Case Descriptions |
|----------------|--|
| 5.1 | RFSS1 (cSU) Initiated Unit to Unit Call with Target Availability Check |
| 5.1.1 | RFSS1 (Console) Initiated Unit to Unit Call with Target Availability Check |
| 5.2 | RFSS2 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 5.2.1 | RFSS2 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 5.3 | RFSS1 (cSU) Initiated Unit to Unit Call without Target Availability Check |
| 5.3.1 | RFSS1 (Console) Initiated Unit to Unit Call without Target Availability Check |
| 5.4 | RFSS2 (mSU) Initiated Unit to Unit Call without Target Availability Check |
| 5.4.1 | RFSS2 (mSU) Initiated Unit to Unit Call without Target Availability Check |

5.4 Half Rate Unit To Unit Voice Services

The CSSI test cases in Table 20 apply to a CSS-Based Console or a Console integrated with a RFSS (native console). All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

The half rate unit to unit services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-CSS_CONF_TEST_CASES [3].

Table 20. CSSI-CSS Half Rate Unit To Unit Voice Conformance Test Cases

| Test Cases [3] | CSSI-CSS Half Rate Unit To Unit Voice Conformance Test Case Descriptions |
|----------------|--|
| 6.1 | RFSS1 (cSU) Initiated Unit to Unit Call with Target Availability Check |
| 6.1.1 | RFSS1 (Console) Initiated Unit to Unit Call with Target Availability Check |
| 6.2 | RFSS2 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 6.2.1 | RFSS2 (mSU) Initiated Unit to Unit Call with Target Availability Check |
| 6.3 | RFSS1 (cSU) Initiated Unit to Unit Call without Target Availability Check |
| 6.3.1 | RFSS1 (Console) Initiated Unit to Unit Call without Target Availability Check |
| 6.4 | RFSS2 (mSU) Initiated Unit to Unit Call without Target Availability Check |
| 6.4.1 | RFSS2 (mSU) Initiated Unit to Unit Call without Target Availability Check |

5.5 Supplementary Data Services

The CSSI test cases in Table 22 apply to a CSS-Based Console or a Console integrated with a RFSS (native console). All the test cases shall be tested. Testing can be executed when the CSSI is configured as an Inter-WACN connection type, an Inter-System connection type or an Intra-System connection type.

P25 CAP has defined certain test cases as ‘required PASS’ test cases. ‘Required PASS’ means that the test case results shall be a PASS if the equipment is to be considered P25 CAP Compliant. Only P25 CAP Compliant equipment will be posted as ‘Approved (Grant Eligible) Equipment on the P25 CAP webpage. Table 21 lists the ‘Required PASS’ test case numbers. These test cases are noted with a double asterisk (**) in Table 22.

Table 21. Required PASS Test Case Numbers

| | | | | |
|-------|-------|-------|-------|-------|
| 7.1.1 | 7.2.1 | 7.2.2 | 7.3.1 | 7.3.2 |
|-------|-------|-------|-------|-------|

The supplementary data services shall be tested for conformance in accordance with the test cases in P25-CAB-CSSI-CSS_CONF_TEST_CASES [3].

Table 22. CSSI-CSS Supplementary Data Test Cases

| Test Cases [3] | CSSI-Console Supplementary Data Test Case Descriptions |
|----------------|---|
| 7.1 | Emergency Alarm (test tool initiated, acknowledged by Console) |
| 7.1.1 | ** Emergency Alarm initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2 (received by Console) |
| 7.2 | Emergency Alarm Cancel |
| 7.2.1 | ** Emergency Alarm Cancel initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2 (received by Console) |
| 7.2.2 | ** Emergency Alarm Cancel initiated by a Console Home to RFSS1; Group Home RFSS 2 |
| 7.3 | Group Emergency Cancel |
| 7.3.1 | ** Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2 (received by Console) |
| 7.3.2 | ** Group Emergency Cancel initiated by a Console Home to RFSS1; Group Home RFSS 2 |
| 7.4 | Call Alert - RFSS1 (cSU) Initiated |
| 7.4.1 | Call Alert Initiated by a Console Home to RFSS1 |
| 7.5 | Call Alert - RFSS2 (mSU) Initiated |
| 7.5.1 | Call Alert Initiated by a mSU Home to RFSS2 |

6 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 Compliance Assessment Bulletin.

Table 23. P25 CAP Exceptions

| Exception | Date | Details |
|-----------|------|---------|
| none | | |