Homeland 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_CONF_TEST_REQ

November 2018

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 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 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.
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.

Contents

Figures and Tables

1   Introduction

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) 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-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 the TIA TR8.25 Compliance Assessment Subcommittee, and then within the P25 CAP. 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 (TBD after final review).

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 Radio Frequency Sub-System (CSS)*

[4]   ISSI CSSI Equipment Test SDOC template[1]

[5]   ISSI CSSI Equipment Test STR template[2]

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 tests will validate the SIP, SDP and RTP messages that are exchanged during specific test cases between the FNE equipment under test and the conformance test tool.

---

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

[2] SDOC template available on request. Send request for ISSI CSSI SDOC template to P25CAP@hq.dhs.gov.
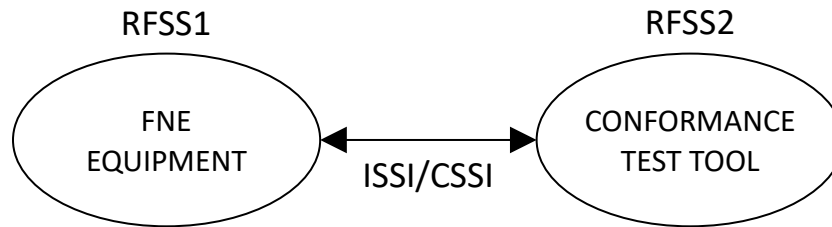
Figure 1. Conformance Test Diagram

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 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 CSS based equipment or native console equipment (see next section for native console explanation).

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 CSS based console or a native console is under test, and the test case calls for the CSS to initiate the test case, it is expected that a console subscriber unit (registered to the CSS based or native console under test) 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 RFSS or a Group Home RFSS roles of a Console Sub System (CSS based) or a native console (see next section for console explanation). The Inter-WACN, Inter-System or Intra-System connection type can be used for testing.

When a CSSI of a CSS base console is under test, the test tool simulates a Group Home RFSS. The CSS based console under test will only be tested as a Group Serving RFSS role, using the Inter-WACN, Inter-System or Intra-System connection type.

When a CSSI of a native console is under test, the test tool simulates a Group Serving RFSS or a Group Home RFSS. The Native Console under test will tested as a Group Home RFSS and Group Serving RFSS roles, using the Inter-WACN or Inter-System connection type.

2.4   CSS Based Console Versus Native Console

CSS based console is the console of a Console Sub System (CSS). A CSS is essentially an RFSS designed without support for RF sites. Conformance testing will test CSS based consoles in the Group Serving role.

An RF Subsystem (RFSS) may have both consoles and RF sites. A console that exists within an RFSS with RF sites shall be referred to as a 'native console.' Note that a manufacturer may refer to a native console as an embedded console. Conformance testing will test Native Consoles in the Group Home and Group Serving roles.

2.5   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 CSS (and native 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].

2.6   Conformance Test Tool Description

The ISSI/CSSI interface test tool solution enables conformance 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.

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. The test cases listed in Table 1 must have a PASS test case result in order to be considered P25 CAP Compliant. Testing can be executed when the ISSI is configured as an Inter-WACN connection type or an Inter-System connection type.

Table 1. Required PASS Test Cases

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 Services Conformance Tests

Test Cases [1]	ISSI-RFSS Full Rate Group Voice Services Conformance Tests
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

Test Cases [1]	ISSI-RFSS Full Rate Group Voice Services Conformance Tests
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
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. The test cases listed in Table 3 must have a PASS test case result in order to be considered P25 CAP Compliant. Testing can be executed when the ISSI is configured as an Inter-WACN connection type or an Inter-System connection type.

Table 3. Required PASS Test Cases

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 Services Conformance Tests

Test Cases [1]	ISSI-RFSS Half Rate Group Voice Services Conformance Tests
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

Test Cases [1]	ISSI-RFSS Half Rate Group Voice Services Conformance Tests
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
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. The test cases listed in Table 5 must have a PASS test case result in order to be considered P25 CAP Compliant. Testing can be executed when the ISSI is configured as an Inter-WACN connection type or an Inter-System connection type.

Table 5. Required PASS Test Cases

5.1.1	5.1.2	5.1.3	5.1.4	5.1.5
5.1.6	5.1.7	5.1.8		
5.2.1	5.2.2	5.2.3	5.2.4	5.2.5
5.2.6	5.2.7	5.2.8		
5.3.1	5.3.2	5.3.3	5.3.4	5.3.5
5.3.6	5.3.7	5.3.8		

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 Services Conformance Tests

Test Cases [1]	ISSI-RFSS Supplementary Data Services Conformance Tests
5.1	**Emergency Alarm**
5.1.1	Emergency Alarm initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 2
5.1.2	Emergency Alarm initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 1

Test Cases [1]	ISSI-RFSS Supplementary Data Services Conformance Tests
5.1.3	Emergency Alarm initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2
5.1.4	Emergency Alarm initiated by a mSU home to and Registered in RFSS2; Group Home RFSS 1
5.1.5	Emergency Alarm initiated by a mSU Home to RFSS1 and Registered in RFSS2; Group Home RFSS 2
5.1.6	Emergency Alarm initiated by a mSU home to RFSS1 and Registered in RFSS2; Group Home RFSS 1
5.1.7	Emergency Alarm initiated by a mSU Home to RFSS 2 and Registered in RFSS1; Group Home RFSS 2
5.1.8	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 and Registered in RFSS1; Group Home RFSS 2
5.2.2	Emergency Alarm Cancel initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 1
5.2.3	Emergency Alarm Cancel initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2
5.2.4	Emergency Alarm Cancel initiated by a mSU home to and Registered in RFSS2; Group Home RFSS 1
5.2.5	Emergency Alarm Cancel initiated by a mSU Home to RFSS1 and Registered in RFSS2; Group Home RFSS 2
5.2.6	Emergency Alarm Cancel initiated by a mSU home to RFSS1 and Registered in RFSS2; Group Home RFSS 1
5.2.7	Emergency Alarm Cancel initiated by a mSU Home to RFSS 2 and Registered in RFSS1; Group Home RFSS 2
5.2.8	Emergency Alarm Cancel initiated by a mSU Home to RFSS2 and Registered in RFSS1; Group Home RFSS 1
5.3	**Group Emergency Cancel**
5.3.1	Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 2
5.3.2	Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 1
5.3.3	Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2
5.3.4	Group Emergency Cancel initiated by a mSU home to and Registered in RFSS2; Group Home RFSS 1
5.3.5	Group Emergency Cancel initiated by a mSU Home to RFSS1 and Registered in RFSS2; Group Home RFSS 2
5.3.6	Group Emergency Cancel initiated by a mSU home to RFSS1 and Registered in RFSS2; Group Home RFSS 1
5.3.7	Group Emergency Cancel initiated by a mSU Home to RFSS 2 and Registered in RFSS1; Group Home RFSS 2

Test Cases [1]	ISSI-RFSS Supplementary Data Services Conformance Tests
5.3.8	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 Test 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. The test cases listed in Table 7 must have a PASS test case result in order to be considered P25 CAP Compliant. 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.

Table 7. Required PASS Test Cases

3.2.1	3.4.1	3.5.1	3.6.1	3.7.1	3.8.1

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 Services Conformance Tests

Test Cases [2]	CSSI-RFSS Full Rate Voice Services Conformance Tests
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 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
3.5	**Full Rate Confirmed Group Call - Group Home Role - Delayed Resources**
3.5.1	RFSS Receives Confirmed Group Call
3.6	**Full Rate Confirmed Group Call - Group Serving Role - Delayed Resources**
3.6.1	RFSS Receives Confirmed Group Call
3.7	**Full Rate Confirmed Group Call - Group Home Role - No Resources**
3.7.1	RFSS Receives Confirmed Group Call
3.8	**Full Rate Confirmed Group Call - Group Serving Role - No Resources**
3.8.1	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. The test cases listed in Table 9 must have a PASS test case result in order to be considered P25 CAP Compliant. 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.

Table 9. Required PASS Test Cases

4.2.1	4.4.1	4.5.1	4.6.1	4.7.1	4.8.1

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 Services Conformance Tests

Test Cases [2]	CSSI-RFSS Half Rate Group Voice Services Conformance Tests
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 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
4.5	**Half Rate Confirmed Group Call - Group Home Role - Delayed Resources**
4.5.1	RFSS Receives Confirmed Group Call
4.6	**Half Rate Confirmed Group Call - Group Serving Role - Delayed Resources**
4.6.1	RFSS Receives Confirmed Group Call
4.7	**Half Rate Confirmed Group Call - Group Home Role - No Resources**
4.7.1	RFSS Receives Confirmed Group Call
4.8	**Half Rate Confirmed Group Call - Group Serving Role - No Resources**
4.8.1	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 Services Conformance Tests

Test Cases [2]	CSSI-RFSS Full Rate Unit To Unit Voice Services Conformance Tests
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

Test Cases [2]	CSSI-RFSS Full Rate Unit To Unit Voice Services Conformance Tests
5.2	**RFSS2 (cSU) Initiated Unit to Unit Call with Target Availability Check**
5.2.1	RFSS2 (cSU) Initiated Unit to Unit Call with 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 Services Conformance Tests

Test Cases [2]	CSSI-RFSS Half Rate Unit To Unit Voice Services Conformance Tests
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	RFSS2 (cSU) Initiated Unit to Unit Call with 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. The test cases listed in Table 13 must have a PASS test case result in order to be considered P25 CAP Compliant. 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.

Table 13. Required PASS Test Cases

7.1.1	7.1.2	7.2.1	7.2.2	7.2.3	7.2.4
7.3.1	7.3.2	7.3.3	7.3.4		

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 Services Conformance Tests

Test Cases [2]	CSSI-RFSS Supplementary Data Services Conformance Tests
7.1	**Emergency Alarm**
7.1.1	Emergency Alarm initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 2
7.1.2	Emergency Alarm initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 1
7.2	**Emergency Alarm Cancel**
7.2.1	Emergency Alarm Cancel initiated by a cSU Home RFSS2; Group Home RFSS 2

Test Cases [2]	CSSI-RFSS Supplementary Data Services Conformance Tests
7.2.2	Emergency Alarm Cancel initiated by a cSU Home to RFSS2; Group Home RFSS 1
7.2.3	Emergency Alarm Cancel initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 2
7.2.4	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 RFSS2; Group Home RFSS 2
7.3.2	Group Emergency Cancel initiated by a cSU Home to RFSS2; Group Home RFSS 1
7.3.3	Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS1; Group Home RFSS 2
7.3.4	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 Test Requirements - CSS Based or Native Console

5.1   Full Rate Group Voice Services

The CSSI test cases in Table 17 apply to a CSS Based Console or a Native Console. All the test cases shall be tested when the CSSI of a Native Console is configured as an Inter-WACN or Inter-System connection type. The CSSI of a CSS Based Console can be configured with an Inter-WACN, Inter-System or Intra-System connection type but testing of the CSS Based Console is limited to test cases in the Group Serving role.

The test cases listed in Table 15 must have a PASS test case result in order to be considered P25 CAP Compliant when the CSSI of a native console is configured with an Inter-WACN connection type or with an Inter-System connection type.

Table 15. Required PASS Test Cases for a Native Console with Inter-WACN or Inter-System connection

3.2.1	3.4.1	3.5.1	3.6.1	3.7.1	3.8.1

The test cases listed in Table 16 must have a PASS test case result in order to be considered P25 CAP Compliant when the CSSI of a CSS Based console is configured with an Intra-System connection type.

Table 16. Required PASS Test Cases for a CSS Based console with Inter-WACN, Inter-System or Intra-System connection

3.4.1	3.6.1	3.8.1

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 17. CSSI-CSS Full Rate Group Voice Services Conformance Tests

Test Cases [3]	CSSI-CSS Full Rate Group Voice Services Conformance Tests
3.1	**Full Rate Unconfirmed Group Call - Group Home Role**
3.1.1	Native Console Initiates Unconfirmed Group Call
3.1.2	Native Console Receives Unconfirmed Group Call
3.2	**Full Rate Emergency Unconfirmed Group Call - Group Home Role**
3.2.1	Native Console Receives Emergency Unconfirmed Group Call
3.3	**Full Rate Unconfirmed Group Call - Group Serving Role**
3.3.1	CSS Based or Native Console Initiates Unconfirmed Group Call
3.3.2	CSS Based or Native Console Receives Unconfirmed Group Call
3.4	**Full Rate Emergency Unconfirmed Group Call - Group Serving Role**
3.4.1	CSS Based or Native Console Receives Emergency Unconfirmed Group Call
3.5	**Full Rate Confirmed Group Call - Group Home Role - Delayed Resources**
3.5.1	Native Console Initiates Confirmed Group Call
3.6	**Full Rate Confirmed Group Call - Group Serving Role - Delayed Resources**
3.6.1	CSS Based or Native Console Initiates Confirmed Group Call
3.7	**Full Rate Confirmed Group Call - Group Home Role - No Resources**
3.7.1	Native Console Initiates Confirmed Group Call
3.8	**Full Rate Confirmed Group Call - Group Serving Role - No Resources**
3.8.1	CSS Based or Native Console Initiates Confirmed Group Call

5.2 Half Rate Group Voice Services

The CSSI test cases in Table 20 apply to a CSS Based Console or a Native Console. All the test cases shall be tested when the CSSI of a Native Console is configured as an Inter-WACN or Inter-System connection type. The CSSI of a CSS Based Console can be configured with an Inter-WACN, Inter-System or Intra-System connection type, but testing of the CSS Based Console is limited to test cases in the Group Serving role.

The test cases listed in Table 18 must have a PASS test case result in order to be considered P25 CAP Compliant when the CSSI of a native console is configured with an Inter-WACN connection type or with an Inter-System connection type.

Table 18. Required PASS Test Cases for a Native Console with Inter-WACN or Inter-System connection

4.2.1	4.4.1	4.5.1	4.6.1	4.7.1	4.8.1

The test cases listed in Table 19 must have a PASS test case result in order to be considered P25 CAP Compliant when the CSSI of a CSS Based console is configured with an Intra-System connection type.

Table 19. Required PASS Test Cases for a CSS Based console with Inter-WACN, Inter-System or Intra-System connection

4.4.1	4.6.1	4.8.1

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 20. CSSI-CSS Half Rate Group Voice Services Conformance Tests

Test Cases [3]	CSSI-CSS Half Rate Group Voice Services Conformance Tests
4.1	**Half Rate Unconfirmed Group Call - Group Home Role**
4.1.1	Native Console Initiates Unconfirmed Group Call
4.1.2	Native Console Receives Unconfirmed Group Call
4.2	**Half Rate Emergency Unconfirmed Group Call - Group Home Role**
4.2.1	Native Console Receives Emergency Unconfirmed Group Call
4.3	**Half Rate Unconfirmed Group Call - Group Serving Role**
4.3.1	CSS Based or Native Console Initiates Unconfirmed Group Call
4.3.2	CSS Based or Native Console Receives Unconfirmed Group Call
4.4	**Half Rate Emergency Unconfirmed Group Call - Group Serving Role**
4.4.1	CSS Based or Native Console Receives Emergency Unconfirmed Group Call
4.5	**Half Rate Confirmed Group Call - Group Home Role - Delayed Resources**
4.5.1	Native Console Initiates Confirmed Group Call
4.6	**Half Rate Confirmed Group Call - Group Serving Role - Delayed Resources**
4.6.1	CSS Based or Native Console Initiates Confirmed Group Call
4.7	**Half Rate Confirmed Group Call - Group Home Role - No Resources**
4.7.1	Native Console Initiates Confirmed Group Call
4.8	**Half Rate Confirmed Group Call - Group Serving Role - No Resources**
4.8.1	CSS Based or Native Console Initiates Confirmed Group Call

5.3   Full Rate Unit To Unit Voice Services

The CSSI test cases in Table 21 apply to a CSS Based Console or a Native Console. The CSSI of a Native Console can be configured with an Inter-WACN connection or Inter-System connection type. The CSSI of a CSS Based Console can be configured with an Inter-WACN, Inter-System or 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 21. CSSI-CSS Full Rate Unit To Unit Voice Services Conformance Tests

Test Cases [3]	CSSI-CSS Full Rate Unit Voice Services Conformance Tests
5.1	**RFSS1 (cSU) Initiated Unit to Unit Call with Target Availability Check**
5.1.1	RFSS1 (CSS Based or Native 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

5.4   Half Rate Unit To Unit Voice Services

The CSSI test cases in Table 22 apply to a CSS Based Console or a Native Console. The CSSI of a Native Console can be configured with an Inter-WACN connection or Inter-System connection type. The CSSI of a CSS Based Console can be configured with an Inter-WACN, Inter-System or 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 22. CSSI-CSS Half Rate Unit To Unit Voice Services Conformance Tests

Test Cases [3]	CSSI-CSS Half Rate Unit To Unit Voice Services Conformance Tests
6.1	**RFSS1 (cSU) Initiated Unit to Unit Call with Target Availability Check**
6.1.1	RFSS1 (CSS Based or Native 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

5.5   Supplementary Data Services

The CSSI test cases in Table 25 apply to a CSS Based Console or a Native Console. All the test cases shall be tested when the CSSI of a Native Console is configured as an Inter-WACN or Inter-System connection type. The CSSI of a CSS Based Console can be configured with an Inter-WACN, Inter-System or Intra-System connection type, but testing of the CSS Based Console is limited because the CSS based console is not tested in the Group Home role.

The test cases listed in Table 23 must have a PASS test case result in order to be considered P25 CAP Compliant when the CSSI of a native console is configured with an Inter-WACN connection type or with an Inter-System connection type.

Table 23. Required PASS Test Cases for a Native Console with Inter-WACN or Inter-System connection

7.1.1	7.1.2	7.2.1	7.2.2	7.2.3
7.2.4	7.3.1	7.3.2	7.3.3	7.3.4

The test cases listed in Table 24 must have a PASS test case result in order to be considered P25 CAP Compliant when the CSSI of a CSS Based console is configured with an Intra-System connection type.

Table 24. Required PASS Test Cases for a CSS Based console with Inter-WACN, Inter-System or Intra-System connection

7.1.1	7.2.1	7.2.3	7.3.1	7.3.3

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 25. CSSI-CSS Supplementary Data Services Conformance Tests

Test Cases [3]	CSSI-CSS Supplementary Data Services Conformance Tests
7.1	**Emergency Alarm (test tool initiated, acknowledged by CSS)**
7.1.1	Emergency Alarm initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2 (received by CSS Based or Native Console)
7.1.2	Emergency Alarm initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 1 (received by Native Console)
7.2	**Emergency Alarm Cancel**
7.2.1	Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 2 (received by CSS Based or Native Console)

Test Cases [3]	CSSI-CSS Supplementary Data Services Conformance Tests
7.2.2	Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 1 (received by Native Console)
7.2.3	Group Emergency Cancel initiated by a CSS Based or Native Console Home to RFSS1; Group Home RFSS 2
7.2.4	Group Emergency Cancel initiated by a Native Console Home to RFSS1; Group Home RFSS 1
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 CSS Based or Native Console)
7.3.2	Group Emergency Cancel initiated by a mSU Home to and Registered in RFSS2; Group Home RFSS 1 (received by Native Console)
7.3.3	Group Emergency Cancel initiated by a by CSS Based or Native Console Home to RFSS1; Group Home RFSS 2
7.3.4	Group Emergency Cancel initiated by a Native Console Home to RFSS1; Group Home RFSS 1
7.4	**Call Alert - RFSS1 (cSU) Initiated**
7.4.1	Call Alert Initiated by a CSS Based or Native 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 26. P25 CAP Exceptions

Exception	Date	Details
none		