

Project 25 (P25) Compliance Assessment Program (CAP) Coordination Meeting for P25 Inter RF Subsystem Interface (ISSI)/Console Subsystem Interface (CSSI) Conformance Testing

Open Session: Agenda and Summary

Location	Las Vegas, NV
Date	August 8, 2018
Time	2:30 - 5:00 p.m. PDT
Meeting Room	Sands Expo Convention Center, meeting room Casanova 605-606
Call-in Access	(866) 951-1151, conference ID: 7492054#

2:30 - 2:40 p.m.	Welcome and Introductions – Sridhar Kowdley Importance of ISSI/CSSI P25 CAP testing
2:40 - 3:00 p.m.	Organizations Involved with Conformance Testing
3:00 - 3:30 p.m.	Scope of ISSI/CSSI Conformance Testing
3:30 - 4:00 p.m.	Logistics for Conformance Testing
4:00 - 4:15 p.m.	Providing Conformance Testing - Denver Department of Interior Lab
4:15 - 4:45 p.m.	Valid8 Test Tool Demonstration
4:45 - 5:00 p.m.	Questions/Next Steps/Schedule

Importance of ISSI/CSSI Conformance Testing

Sridhar Kowdley opened the meeting reviewing the need for ISSI/CSSI Conformance testing. He briefly described the P25 CAP ISSI/CSSI Conformance testing program that DHS (Department of Homeland Security) is developing.

Organizations Involved with Conformance Testing

The key organizations involved with the Conformance testing are: DHS Science and Technology Directorate (S&T)/P25 CAP Advisory Panel – managing P25 CAP testing; APCO International – conformance test case development; Valid8 – conformance test tool development; Department of Interior (DOI) Test Lab – Running the P25 ISSI/CSSI conformance test Lab; NTIA ITS – conformance test tool software review; P25 Manufacturers – providing P25 CSSI/ISSI equipment for pilot testing.

Overview of the ISSI/CSSI Conformance Test Plan

The TIA-102 ISSI Conformance Test Procedures were used as a starting point in the development of test cases that will also include half-rate voice messages or Time Division Multiple Access (TDMA), console testing and some key supplementary data messages. The test cases are simplified to single link testing: Radio Frequency Subsystem (RFSS) to RFSS or Console Subsystem (CSS) to RFSS.

Three test case documents will be developed covering ISSI testing between two RFSSs and testing between a CSS and an RFSS. Three ISSI/CSSI connection types will also be included: Inter-WACN (Wide Area Communications Network), Inter-System and Intra-system (CSSI testing only).

Status of ISSI/CSSI Conformance Test Case Development

The Voice and Supplementary Data test cases for ISSI and CSSI conformance testing have been defined. Session Initiation Protocol (SIP)/Session Description Protocol (SDP) and Real-Time Transport Protocol (RTP) message blocks are defined for full rate voice or Frequency Division Multiple Access (FDMA). Half rate (TDMA) message blocks are still being defined. An identifier scheme (WACN, SYSTEM, RFSS, Group, Mobile Subscriber Unit and Console Subscriber Unit Identifiers) was determined and integrated into the test cases. The test case message block flows are being reviewed with Valid8. Test case documents have been started.

Conformance Test Cases

ISSI Conformance test cases (FDMA and TDMA) include Unit Registration, Group Registration, Group Supplementary Data Interest, Unconfirmed Group Call, Confirmed Group Call, Emergency Confirmed Group Call, Emergency Alarm and Call Alert.

CSSI Conformance test cases (FDMA and TDMA) include Group Registration, Group Supplementary Data Interest, Unconfirmed Group Call, Confirmed Group Call, Emergency Confirmed Group Call, Unit to Unit Call, Emergency Alarm, Emergency Alarm Cancel/Group Emergency Cancel and Call Alert.

Logistics of Conformance Testing

The needs for testing were described. Documented test cases and a verified test tool are the basic requirements. It would be best if the test tool could test equipment when co-located with the equipment or remotely from the equipment under test. There may be instances where it would be best if the test tool would not generate traffic and monitor ISSI/CSSI traffic flows in both directions during calls initiated by subscriber users or console users.

The testing shall be performed by an ISO 17025 accredited P25 CAP Test Lab, preferably with a field testing accreditation. The field testing accreditation would allow ISSI/CSSI equipment to be tested where the equipment was located rather than transporting the equipment to the P25 test lab locations. The test tool needs to be informed by P25 ISSI/CSSI manufacturers.

Conformance Testing of Equipment in DOI Test Lab

The ISSI/CSSI Conformance test program calls for the Denver DOI test lab to seek ISO 17025 Laboratory Accreditation. Because ISSI and sometimes CSSI equipment is difficult to transport, the plan would be to offer conformance testing at manufacturer locations. Cloud-based testing may also be possible and will be investigated. DHS S&T plans on funding the conformance test lab for approximately three years with the hope that an existing or new laboratory partner will fill the need in the future.

Valid8 Test Tool Demonstration

Valid8 personnel performed a simulation of their test tool.

Questions/Next Steps/Schedule

The tentative schedule calls for Zetron providing a Console sub-system with CSSI functionality to Valid8 by the end of August 2018. Implementation and testing will begin as soon as possible. The DOI Test Lab's 17025 Accreditation is required, but this schedule is currently unknown. Complete CSS-CSSI test case documentation is scheduled for September 2018. ISSI Conformance testing for an RFSS is scheduled for late September 2018. Completed test documentation for ISSI - RFSS testing is scheduled for late October 2018. CSSI Conformance testing for an RFSS is scheduled for late October 2018. Completed test documentation for CSSI - RFSS testing is scheduled for late November 2018.