DHS SCIENCE AND TECHNOLOGY

P25 CAP Program Updates

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Progress to Date - Published

- [Inter RF Subsystem (ISSI)/Console Subsystem Interface (CSSI) Conformance Testing Requirements Compliance Assessment Bulletin (CAB)](#)

- [ISSI/CSSI Conformance Equipment Test Supplier's Declaration of Compliance (SDOC) template](#)

- ISSI/CSSI Conformance Equipment Test Summary Test Report (STR) template *

- [Comment Tables](#) on ISSI/CSSI Conformance Testing documents — outlines comments received and how they were addressed

- Conformance Test Pass/Fail Criteria for CSSI and ISSI *

- Conformance Test Cases *
    - ISSI testing of a RF Subsystem (RFSS)
    - CSSI testing of a RFSS
    - CSSI testing of a Console Subsystem (CSS)

* Documents are not posted on P25 CAP website, but available by email request to P25CAP@hq.dhs.gov

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Conformance Test Cases

- 3 test case documents: **CSSI-CSS Under Test**, **CSSI-RFSS Under Test**, and **ISSI-RFSS Under Test**

- Pass/Fail Criteria Document – messaging examples & allowed parameter values

- Single link testing of either the ISSI or CSSI against test tool

- Testing of Frequency Division Multiple Access (Full Rate) and Time Division Multiple Access (Half Rate) traffic

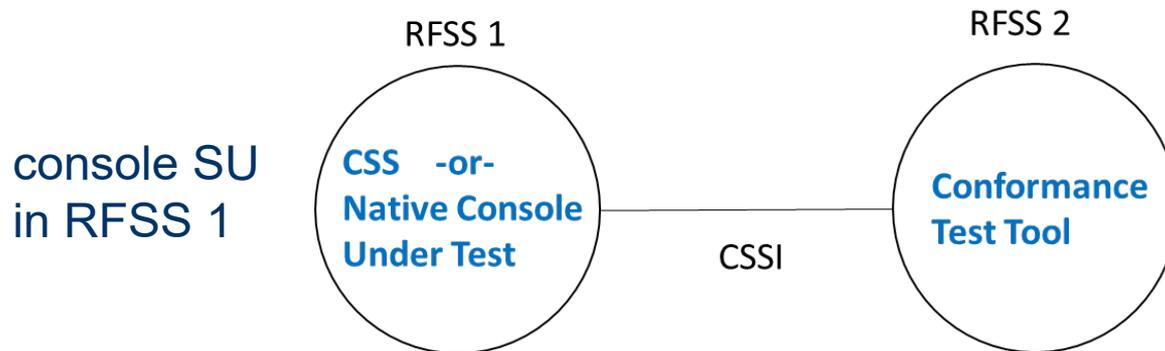- Testing of Supplementary Data features

ISSI

- Unconfirmed Group Call
- Emergency Unconfirmed Group Call
- Confirmed Group Call (No Resources & Delayed Resources)
- Emergency Alarm
- Emergency Alarm Cancel
- Group Emergency Cancel
- Call Alert

CSSI

- Unconfirmed Group Call
- Emergency Unconfirmed Group Call
- Confirmed Group Call (No Resources & Delayed Resources)
- Emergency Alarm
- Emergency Alarm Cancel
- Group Emergency Cancel
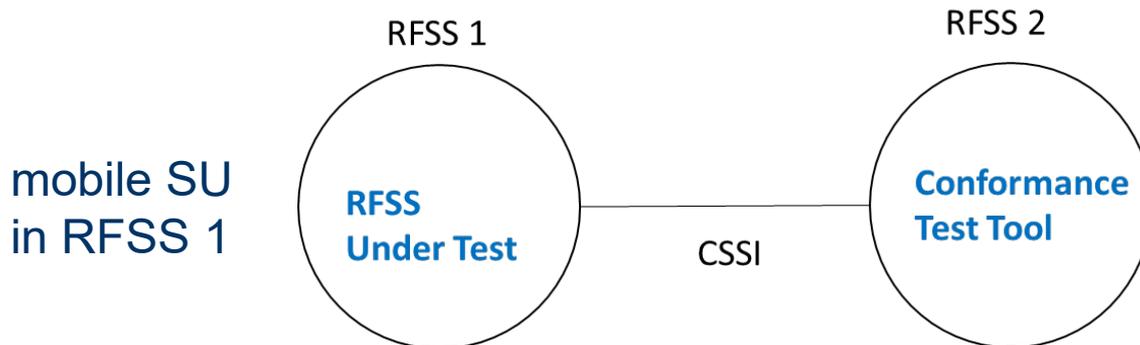- Unit to Unit Call with and without Target Availability Check
- Call Alert

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Conformance Testing Methods

- **CSSI-CSS Under Test**

console SU in RFSS 1

RFSS 1
CSS -or- Native Console Under Test
CSSI
RFSS 2
Conformance Test Tool

a) console SU initiated, received by test tool

b) test tool initiated, received by console SU

- **CSSI-RFSS Under Test**

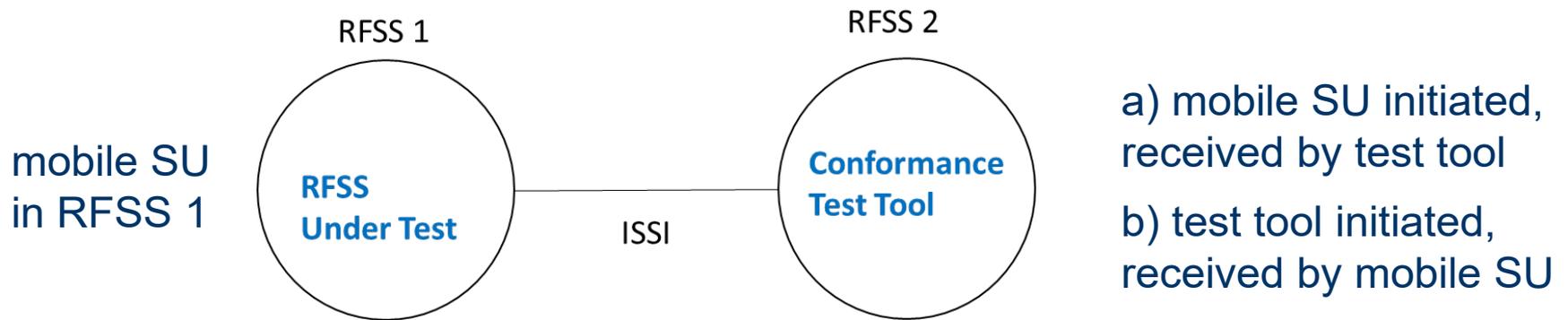mobile SU in RFSS 1

RFSS 1
RFSS Under Test
CSSI
RFSS 2
Conformance Test Tool

a) mobile SU initiated, received by test tool

b) test tool initiated, received by mobile SU

Conformance Testing Methods

- **ISSI-RFSS Under Test**

mobile SU in RFSS 1

RFSS 1 — RFSS Under Test

ISSI

RFSS 2 — Conformance Test Tool

a) mobile SU initiated, received by test tool

b) test tool initiated, received by mobile SU

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Conformance Test Status

- **CSSI-CSS Under Test**: All 25 test cases coded in the Valid8 P25 Conformance Test Tool

  - Verified in Self Test: 25

    - Verified against Reference implementation:

      - Executed Against Reference Implementations: 25

        - Analyzing results in detail with the teams

      - Verification against reference implementation expected to be completed by August 23

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Conformance Test Status

- **CSSI-RFSS Under Test**: 25

  - Verified in Self Test: 25

  - Verified against reference implementation: 0 (waiting for RFSS vendors)

- **ISSI-RFSS Under Test**: 40

  - Verified in Self Test: 40

  - Verified against reference implementation: 0 (waiting for RFSS vendors)

Next Steps:

- Valid8 to work with RFSS Vendors

- Vendors willing to participate in conformance test development include: Harris, EF Johnson Technologies, Etherstack, Zetron and Avtec

Comment Adjudication

- **Public Comment Period closed on July 19, 2019**
    - Testing Rules CAB
    - ISSI/CSSI Interoperability Testing Requirements CAB
    - ISSI/CSSI Interoperability Equipment Test SDOC template
    - ISSI/CSSI Interoperability Equipment Test STR template
- Next Steps
    - Finalization of documents and publication (September 30, 2019 Estimated)

CAB Testing Rules

Rule #	Rule Description
1	Any (conventional only, conventional/trunked FDMA only, or conventional/trunked FDMA/TDMA) new product (new hardware, new software and never been P25 CAP tested before) must be tested to [CAI-CAB-2018].
2	If the product started the P25 CAP testing process using [CAI-CAB-2017], the product can finish the testing process and be submitted as tested under the 2017 CAB.
3	Products that support conventional/trunked FDMA/TDMA and have already been tested to [CAI-CAB-2017], do not need to be gap tested to [CAI-CAB-2018]. • Gap testing for Rule 3 refers to testing of the new test cases and changes that were added to [CAI-CAB-2017], which then became [CAI-CAB-2018].
4	Products that only support conventional FDMA or conventional/trunked FDMA and tested to [CAI-CAB-2016], do not need to be gap tested to [CAI-CAB-2017] or [CAI-CAB-2018]. • Gap testing for Rule 4 refers to testing of the new test cases and changes that were added to [CAI-CAB-2016], which then became [CAI-CAB-2017].
5	Given rules 1-4, any product that has already been tested and submitted under [CAI-CAB-2017], may be gap tested and new SDOC and STR submitted under [CAI-CAB-2018].
6	Any time modifications/updates are made to a product (a particular model or a model class) that would change previously reported SDOC and STR test case results, the product manufacturer is required to gap test the test case results that changed and submit a new SDOC and STR using the latest published CABs.
7	If a product is still available for procurement five years after the product was originally approved by P25 CAP and the STR results are still valid, the product manufacturer is required to submit a new SDOC that confirms the product is still P25 CAP Compliant.

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