



Title: WinnForum Ts-0122 test results clarification

Lab: DEKRA Testing and Certification, Inc.

Contact: Vinayak Thotton Veettil
vinayak.thotton@dekra.com,
+1 703 655 5450

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1. Introduction

Dekra Certification Inc has created this document to clarify the test reports that are created by DEKRA Certification Inc for Telrad Networks to certify Telrad's CBSD as described below against Winn Forum Test Specification 0122 (SAS-CBSD communication)

2. Device Details

Identification of item tested	Breeze Compact Base Station
Trademark.....	
Model and /or type reference.....	CMP.XT-BS-3.X
Other identification of the product	TBD
Final HW version	004-002-00
Final SW version	0700.07617
Features.....	CBSD, Domain Proxy, LTE-TDD 48
Domain Proxy Identifier	BreezeVIEW
Domain Proxy Final SW Version	7.0.0.028
Manufacturer	Telrad Networks Ltd. 1 Bat Sheva Street, P.O.B. 6118, Lod 711600, Israel

3. Specification Status

Test Specification: Winn Forum TS-0122-V1.0.0.

4. *KDB 940660 Section 3.3 Test Cases for Section 96.39 CBSD General Requirements*

Requirements and Responses:

a) CBSDs

1) Confirm that the device will only transmit after it receives authorization from a SAS.

Response: Verified in test case WINNF.FT.D.HBT.2

2) Check the device registration and authorization with the SAS – determine if the device behaves appropriately for successful and unsuccessful registrations. The device should not be transmitting without authorization from the SAS.

Response: Verified in test cases WINNF.FT.D.REG.2, WINNF.FT.D.REG.9, WINNF.FT.D.REG.11, WINNF.FT.D.REG.13, WINNF.FT.D.REG.15, WINNF.FT.D.REG.17, WINNF.FT.D.REG.19

3) Confirm that the device changes its operating power and/or channel in response to a command from the SAS.

Response: Verified in test case WINNF.PT.C.HBT

4) Confirm that the device correctly configures based on the different license classes.

Response: Verified in test cases WINNF.FT.C.SCS.1, WINNF.FT.C.SCS.2, WINNF.FT.C.SCS.3, WINNF.FT.C.SCS.4, WINNF.FT.C.SCS.5

5) Confirm that the device transmits at a power level less than or equal to the maximum power level approved by the SAS.

Response: Verified in test case WINNF.PT.C.HBT

6) Confirm that the device transmits with a bandwidth less than or equal to the SAS specified bandwidth.

Response: Verified in test case WINNF.PT.C.HBT

7) Confirm that the device transmits on the SAS specified frequency.

Response: Verified in test cases WINNF.FT.D.HBT.2, WINNF.FT.C.HBT.3, WINNF.FT.C.HBT.4, WINNF.FT.C.HBT.5, WINNF.FT.C.HBT.6, WINNF.FT.C.HBT.7, WINNF.FT.D.HBT.8, WINNF.FT.C.HBT.9, WINNF.FT.C.HBT.10, WINNF.FT.C.HBT.11, WINNF.PT.C.HBT

8) Confirm that the device stops transmission in response to a command from the SAS, within a period as required by Part 96.

Response: Verified in test cases WINNF.FT.D.RLQ.2, WINNF.FT.D.RLQ.4, WINNF.FT.D.RLQ.6, WINNF.FT.D.DRG.2, WINNF.FT.D.DRG.4, WINNF.FT.C.DRG.5

9) Confirm that the device sends measurements data in response to the command from the SAS.

Response: Verified in test cases WINNF.FT.C.MES.3, WINNF.FT.D.MES.5

10) For devices with geo-location, confirm that it notifies the SAS of a new location when it is beyond the required distance parameter (± 50 m) within the required time frame.

Response: Tested devices do not support condition C2 and hence this is NA.

11) Confirm that the device is capable of reporting the signal level (measurement data) and frequency to SAS.

Response: Verified in test cases WINNF.FT.C.MES.3, WINNF.FT.D.MES.5

12) For a device that operates as a Category A CBSD and then desires to operate as a Category B CBSD (or vice versa), confirm that it re-registers with the SAS for the updated authorization status.

Response: Tested devices operate always as Category B.

13) When CBSDs communicate through a management system, confirm compliance with all requirements.

Response: The tested product has a Domain Proxy implementation; hence all relevant test cases mentioned in the above bullets are selected as such.

14) When communication between the CBSD and SAS is lost:

- i) Describe how the CBSD would react if the communications between the device and the SAS is lost. Confirm that the CBSD stops transmission once it loses the link to the SAS.
- ii) Describe the process for re-establishment of the communications and confirm that the CBSD acts accordingly.
- iii) Confirm power-on restart process for registration (re-registration) occurs as expected.
- iv) Confirm the process for de-registration occurs as expected.

Response: Loss of communication with SAS is verified in test cases WINNF.FT.C.HBT.9, WINNF.FT.C.HBT.10, WINNF.FT.D.RLQ.4, WINNF.FT.D.RLQ.6, WINNF.FT.D.DRG.4, WINNF.FT.C.DRG.5

Response (Oct19th2018): I. When communication between the CBSD and SAS is lost:

If our Domain Proxy mode lost connectivity with the SAS servers, it result on Heartbeat loss. So our system react as Heartbeat lost, and this situation is covered on test WINNF.FT.C.HBT.10 (Heartbeat Response Absent on Subsequent Heartbeat).

5. **Not Applicable test cases**

Section	Test Case ID	Test Case Title	Comment
6.1.4.1.1	WINNF.FT.C.REG.1	Multi-Step registration	Note 1
6.1.4.1.3	WINNF.FT.C.REG.3	Single-Step registration for Category A CBSD	Note 1
6.1.4.1.4	WINNF.FT.D.REG.4	Domain Proxy Single-Step registration for Cat A CBSD	Note 2
6.1.4.1.5	WINNF.FT.C.REG.5	Single-Step registration for CBSD with CPI signed data	Note 1
6.1.4.1.6	WINNF.FT.D.REG.6	Domain Proxy Single-Step registration for CBSD with CPI signed data	Note 2
6.1.4.1.7	WINNF.FT.C.REG.7	Registration due to change of an installation parameter	Note 2

6.1.4.2.1	WINNF.FT.C.REG.8	Missing Required parameters (responseCode 102)	Note 1
6.1.4.2.3	WINNF.FT.C.REG.10	Pending registration (responseCode 200)	Note 1
6.1.4.2.5	WINNF.FT.C.REG.12	Invalid parameter (responseCode 103)	Note 1
6.1.4.2.7	WINNF.FT.C.REG.14	Blacklisted CBSD (responseCode 101)	Note 1
6.1.4.2.9	WINNF.FT.C.REG.16	Unsupported SAS protocol version (responseCode 100)	Note 1
6.1.4.2.11	WINNF.FT.C.REG.18	Group Error (responseCode 201)	Note 1
Section	Test Case ID	Test Case Title	Comment
6.1.4.3.1	WINNF.FT.C.REG.20	Category A CBSD location update	Note 2
6.4.4.1.1	WINNF.FT.C.HBT.1	Heartbeat Success Case (first Heartbeat Response)	Note 1
6.5.4.2.1	WINNF.FT.C.MES.1	Registration Response contains measReportConfig	Note 1
6.5.4.2.2	WINNF.FT.D.MES.2	Domain Proxy Registration Response contains measReportConfig	Note 2
6.5.4.2.4	WINNF.FT.C.MES.4	Heartbeat Response contains measReportConfig	Note 1
6.6.4.1.1	WINNF.FT.C.RLQ.1	Successful Relinquishment	Note 1
6.6.4.2.1	WINNF.FT.C.RLQ.3	Unsuccessful Relinquishment, responseCode=102	Note 1
6.6.4.3.1	WINNF.FT.C.RLQ.5	Unsuccessful Relinquishment, responseCode=103	Note 1
6.7.4.1.1	WINNF.FT.C.DRG.1	Successful Deregistration	Note 1
6.7.4.2.1	WINNF.FT.C.DRG.3	Deregistration responseCode=102	Note 1

Note 1: These test cases are applicable only for CBSDs and not for implementations using a Domain Proxy. There are corresponding test cases which tests similar features for a domain proxy implementation and these have been tested as applicable.

Note 2: Not applicable as per the matrix in section 6 of this document, depicting conditional applicability based on features supported by the device under test.

6. *Supported Features*

Condition	Feature Description	Applicability
C1	Mandatory for UUT which supports multi-step registration message	Y
C2	Mandatory for UUT which supports single-step registration with no CPI-signed data in the registration message. By definition, this is a subset of Category A devices which determine all registration information, including location, without CPI intervention.	N
C3	Mandatory for UUT which supports single-step registration containing CPI-signed data in the registration message.	N
C4	Mandatory for UUT which supports RECEIVED_POWER_WITHOUT_GRANT measurement report type.	N
C5	Mandatory for UUT which supports RECEIVED_POWER_WITH_GRANT measurement report type.	Y
C6	Mandatory for UUT which supports parameter change being made at the UUT and prior to sending a deregistration.	N