

DMO TETRA Interoperability Certificate

Hytera, MT680 Plus DMO Gateway

Bad Mnder, September 2015

Latest Certified MT680 Plus SW Release:	V3.07.12.095
Latest Certified MT680 Plus HW Release:	126800

ISCTI (Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione) certifies that the Hytera MT680 Plus Gateway has been subject to interoperability testing for the "certified" features listed on second page of this certificate with the following DM terminals: Hytera Z1p and Hytera PT580H Plus and the Hytera, ACCESSNET-T IP SwMI in accordance with the TETRA Interoperability Profiles, TIP compliance Test Plan and related TETRA interoperability requirement tables.

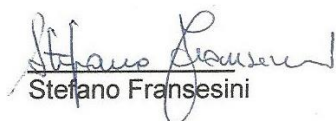
The table lists all the available TETRA interoperability profiles, and summarizes the main functionalities of every profile according to the TETRA interoperability requirement tables.

A feature is "Certified" when it has been successfully tested during the last test session with one of the testing method described in the TETRA process document part 1 (TPD001-01).

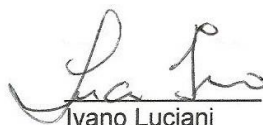
A breakdown into the feature details is given in the Feature Compliance Overview section of this certificate.

This certificate has been issued following a single test session between Hytera and Hytera on September 2015. Detailed test results are listed in the Test Report associated to this Certificate. Details and explanation about the procedure used to provide verdicts are in the TIC process TPD001-01.

IOP test engineer


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Date of issue:
26 November 2015
V2

Certified features

Test Session Bad Mnder, September 2015 Hytera MT680 Plus	Hytera ACCESSNET- T IP	Hytera Z1p	Hytera PT580H Plus
Hardware	PV 09.01	130000	115801
Software	PV 09.01	V3.07.12.095	V3.07.12.095
Feature TTR002-02 Gateway			
Registration	Certified	Certified	Certified
Presence Signal	Certified	Certified	Certified
Usage Restriction Types	Certified	Certified	Certified
Individual Call	Certified	Certified	Certified
Group Call	Certified	Certified	Certified
Status	-	-	-
SDS-TL	Certified	Certified	Certified
Pre-emption	-	-	-

Feature Compliance Overview

The first pages of this certificate provide an indication about the main interoperable TETRA features for each TIP specification (as described in the TIC-RT). The main interoperable TETRA features results depend on a set of sub-feature, the verdicts associated to each sub-feature are directly derived from the analysis of the performed test cases.

The results associated to each feature and sub-feature are shown in the “Feature compliance report” table below. The main features are indicated with grey background and the associated sub-features (or second level features) have white background.

The outcome assigned to a sub-feature as showed on Page 2, is derived by the Feature compliance report tables.

Outcome	Definition
Certified	All required tests have been performed and passed.
Partial	Not all the required test cases have been performed, but none have failed.
-	Feature cannot be certified e.g. it is not supported by at least one product, no tests were performed, or some tests were performed but at least one failed.

The verdict assigned to a sub-feature is the result of the analysis of the test case results listed in the Test Report. The verdict assigned to each sub-feature is derived from one or several test case results or test steps result, the TETRA Interoperability requirement tables (TIC-RTs) indicate the link between sub-features and test cases for the certified set of equipment capabilities (see Test Report).

Verdict	Definition
Passed	All mandated tests or steps of tests linked to this functionality (as per TIC-RT indication) are compliant with the TIP specification relevant to this feature.
Incomplete	Not all Mandated tests (as per TIC-RT indication) have been executed (ran out of time)
Failed	At least one of the required test cases has failed.
No_Equipment	At least one of the required test cases has not been executed due to unavailability of a needed equipment.
	The Result is not relevant (or needed) to verify the SwMI and/or Gateway features

The verdict associated to the feature gives also indication about the method used to test that feature. The allowed testing Methods are listed in the table below, a complete description of the procedures and constraints associated to each of them can be found in the “TPD001-01 TETRA Interoperability Certification Process Description” document.

Testing Method	Description
Complete	All mandated tests associated to the feature have been executed.
Spot	Only a selection of the mandatory test cases associated to the feature has been executed during the test session. These tests are a subset of the tests performed on an equivalent software which has been “completely” tested against the same functionality on a different equipment, see manufacturer declaration in annex B.
Regression	Only a selection of the mandatory the test cases associated to the feature is executed during the test session. These tests are a subset of the tests performed on a previous version of the same software which has been complete tested in a previous test session against the same functionality, see manufacturer declaration in annex B.

Regression on spot	The regression method has been applied on the verdicts based on the spot testing method.
Witnessed	The CB has witnessed that the identified number of tests were successfully passed. Other tests have been found to be successful based on the log file evaluation.

Depending on equipment capabilities declared by the manufacturer, some features or sub-feature cannot be tested. The following table describes meaning of the used abbreviation:

Indication	Definition
Not supported	The SwMI and/or MS and/or GW-nr do not support the minimum features required to verify these items

ISCTI has made every effort to ensure that every result have been correctly evaluated in accordance with the relevant TIPs, Test Plans and TIC-RTs. ISCTI has no liability for the test results, or towards the manufacturers.

The table on the following page lists HW and SW releases of the SwMI, the Gateway and the DM Terminals under test in the test session and the used TIP specifications, Test Plans, and TIC-RTs.

This Certificate and Certificates from previous test sessions are available on the TETRA + Critical Communications Association website (<http://www.tandcca.com/interop/page/12476>).

The feature results are shown in the tables below.

Information on equipment under test and document references

Test Session Place/Date	Hytera Bad Mnder, September 2015
SwMI Type	ACCESSNET-T IP
SwMI HW Release	PV 09.01
SwMI SW Release	PV 09.01
DM GW MT680 Plus Type	Hytera MT680 Plus
DM GW MT680 Plus HW release	126800
DM GW MT680 Plus SW release	V3.07.12.095
DM Terminal 1 Type	Hytera Z1p
DM Terminal 1 HW release	130000
DM Terminal 1 SW release	V3.07.12.095
DM Terminal 2 Type	Hytera PT580H Plus
DM Terminal 2 HW release	115801
DM Terminal 2 SW release	V3.07.12.095
TIP Specs and TIP Compliance Test Plans	
Gateway	TTR002-02 v110 IOP002-02 v102 TIC-RT002-02 v111

Feature compliance report

Test Session Hytera, September 2015 Hytera MT680 Plus	Hytera ACCESSNET-T IP	Hytera Z1p	Hytera PT580H Plus
Feature TTR002-02 Gateway			
Registration	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	Spot 0_pass_of_2
Registration	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	Spot 0_pass_of_2
Presence Signal	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1
Presence Signal	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1
Usage Restriction Types	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Spot 1_pass_of_4
Single Address	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	Spot 0_pass_of_1
Two Addresses	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	Spot 0_pass_of_1

Three addresses	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	Spot 0_pass_of_1
Single MNI	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1
Complying with URT Validity Time	Not Supported	Not Supported	Not Supported
Individual Call	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Spot 1_pass_of_6
DMO to TMO individual call	PASSED Complete 3_pass_of_3	PASSED Complete 3_pass_of_3	Spot 0_pass_of_3
TMO to DMO individual call	PASSED Complete 3_pass_of_3	PASSED Complete 3_pass_of_3	PASSED Spot 1_pass_of_3
Group Call	PASSED Complete 15_pass_of_15	PASSED Complete 15_pass_of_15	PASSED Spot 2_pass_of_15
DMO to TMO group call	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	Spot 0_pass_of_6
TMO to DMO group call	PASSED Complete 3_pass_of_3	PASSED Complete 3_pass_of_3	PASSED Spot 1_pass_of_3
Call Maintenance (including Changeover)	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Spot 1_pass_of_6

Status	FAILED Complete 3_pass_of_5	FAILED Complete 3_pass_of_5	FAILED Spot 2_pass_of_5
Group addressed Status	FAILED Complete 2_pass_of_4	FAILED Complete 2_pass_of_4	FAILED Complete 2_pass_of_4
Individually addressed Status	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	Spot 0_pass_of_1
SDS-TL	PASSED Complete 3_pass_of_3	PASSED Complete 3_pass_of_3	PASSED Spot 0_pass_of_3
Group Addressed SDS-TL	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	Spot 0_pass_of_2
Individually Addressed SDS-TL	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	Spot 0_pass_of_1
Pre-emption	FAILED Complete 5_pass_of_6	FAILED Complete 5_pass_of_6	FAILED Spot 1_pass_of_6
Pre-emption of DMO terminal	FAILED Complete 1_pass_of_2	FAILED Complete 1_pass_of_2	FAILED Spot 0_pass_of_2
Pre-emption of Gateway	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Spot 1_pass_of_4

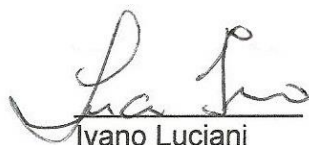
Annex A

Annex A

List of Revisions of the Certificate

Date	Ver.	Modification
15 November 2015	1	First published version
26 November 2015	2	updating: Added results on row "Status" in "Feature compliance report" table "

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