DMO TETRA Interoperability Certificate

Sepura, STP8000, DMO Terminal

Cambridge, October 2014

Latest Certified DM Terminal SW Release:	PSNTW201T300R0001
Latest Certified DM Terminal HW Release:	171101302937

ISCTI (Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione) certifies that the Sepura STP8000, DM Terminal has been subject to interoperability testing for the features DMO Core and DMO Air Interface Encryption listed in the "Certified features" tables of this certificate with the following DM Terminals Sepura, STP8000 and Sepura SRG3900, in accordance with the TETRA Interoperability Profiles, TIP compliance Test Plan and related TETRA interoperability requirement tables.

The certificate features associated to each DM terminal are shown in the "Certificate features" 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 fully witnessed single test session on October 2014. 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.

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Date of issue:

4 November 2014

V 1

Certified feature

DMO Core Test Session Cambridge, October 2014 Sepura STP8000	Sepura STP8000	Sepura SRG3900
TTR002-01 DMO Core		
Registration	Certified	Certified
Group Call	-	Partial
Individual Call	Partial	Partial
Status Call	-	Certified
SDS TL	-	Partial
TTR002-05 DMO AIE-Core		
DMO AIE Encryption	Partial	Partial

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 result depend on a set of sub-features, 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 blue background and the associated sub-features (or second level features) have white background.

The outcome assigned to a feature as shown 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 outcome is derived from 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 or sub-feature.
Incomplete	Not all Mandated tests (as per TIC-RT indication) have been executed.
Failed	At least one of mandated test or steps of tests linked to this functionality failed to match the TIP specification relevant to this feature or sub-feature.

The verdict associated to the feature or sub-feature gives also indication about the method used to test that feature or sub-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 or sub-feature have been executed.
Spot	Only a selection of the mandatory test cases associated to the feature or sub-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 the associated Test Report.
Regression	Only a selection of the mandatory the test cases associated to the feature or sub-feature has been 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 "completely" tested in a previous test session against the same functionality, see manufacturer definition in the associated Test Report
Regression on spot	The regression method has been applied on the verdicts based on the spot testing method.
Witnessed	The TIP heading lines in the Feature Compliance Report indicate whether each TIP is partially or fully witnessed by the Certification Body. Additionally, for a partially-witnessed TIP, the number of witnessed test cases that passed is shown for each the feature and sub-feature. There may have been some un-witnessed passed tests and they will 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	At least one MS 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 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 web site (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	Cambridge, October 2014
DM Terminal Type	Sepura STP8000
DM Terminal HW release	171101302937
DM Terminal SW release	PSNTW201T300R0001
DM Terminal 1 Type	Sepura SRG3900
DM Terminal 1 HW release	1711 013 03577
DM Terminal 1 SW release	MSUTW201T2C0G00

TIP Specs and TIP Compliance Test Plans	
DCore	TTR02-01_v211_DCore IOP002-01_v103_DCore TIC-RT002-01_v123_DCore
DAIE-Core	TTR02-05-1_v106_DAIE-Core IOP002-05_v100_DAIE TIC-RT002-05-1_v106_DAIE-Core

Feature compliance report

DMO Test Session Cambridge, October 2014 Sepura STP8000	Sepura STP8000	Sepura SRG3900
TTR02-01 DCore		
Registration	**PASSED** **Complete** **2_pass_of_2**	**PASSED** **Complete** **2_pass_of_2**
Activation/Deactivation	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1
RF Carrier Selection	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1
Group Call	**Incomplete** **0_pass_of_43**	**Incomplete** **28_pass_of_43**
Intra-MNI Group Calls	Incomplete 0_pass_of_6	Incomplete 0_pass_of_6
Inter-MNI Group Calls	Incomplete 0_pass_of_4	PASSED Complete 4_pass_of_4
Emergency Group Calls	Incomplete 0_pass_of_6	Incomplete 2_pass_of_6
Pre-emptive priority Calls	Incomplete 0_pass_of_4	PASSED Complete 4_pass_of_4

DMO Test Session Cambridge, October 2014 Sepura STP8000	Sepura STP8000	Sepura SRG3900
Group Call Maintenance	Incomplete 0_pass_of_19	Incomplete 12_pass_of_19
Late Entry Group Calls	Incomplete 0_pass_of_4	Incomplete 2_pass_of_4
Open Group Calls	Incomplete 0_pass_of_6	PASSED Complete 6_pass_of_6
Individual Call	**Incomplete 2_pass_of_20**	**Incomplete 8_pass_of_20**
Intra-MNI Individual Calls	Incomplete 0_pass_of_4	Incomplete 0_pass_of_4
Inter-MNI Individual Calls	Incomplete 0_pass_of_6	Incomplete 2_pass_of_6
Pre-emptive priority Calls	Incomplete 0_pass_of_6	Incomplete 4_pass_of_6
Individual Call maintenance	Incomplete 2_pass_of_4	Incomplete 2_pass_of_4
Individual Call with Presence Check	Incomplete 2_pass_of_8	PASSED Complete 8_pass_of_8
Individual call without Presence Check	Incomplete 0_pass_of_8	Incomplete 0_pass_of_8
Individual Late Entry	Incomplete 0_pass_of_4	Incomplete 0_pass_of_4
Status Call	**Incomplete 0_pass_of_16**	**PASSED Complete 16_pass_of_16**

DMO Test Session Cambridge, October 2014 Sepura STP8000	Sepura STP8000	Sepura SRG3900
Individual Status Calls	Incomplete 0_pass_of_2	PASSED Complete 2_pass_of_2
Group Status call	Incomplete 0_pass_of_12	PASSED Complete 12_pass_of_12
Status sent in a Voice Call	Incomplete 0_pass_of_6	PASSED Complete 6_pass_of_6
Status sent out of a Call	Incomplete 0_pass_of_8	PASSED Complete 8_pass_of_8
SDS TL	**Incomplete 0_pass_of_4**	**Incomplete 2_pass_of_4**
Individual SDS-TL Calls	Incomplete 0_pass_of_2	Incomplete 0_pass_of_2
Group SDS-TL call	Incomplete 0_pass_of_2	PASSED Complete 2_pass_of_2
TTR02-05 DAIE-Core		
DMO AIE Encryption	**Incomplete 2_pass_of_20**	**Incomplete 8_pass_of_20**
Encrypted Group Calls	Incomplete 0_pass_of_8	Incomplete 4_pass_of_8
Encrypted Individual Calls	Incomplete 0_pass_of_4	Incomplete 0_pass_of_4

DMO Test Session Cambridge, October 2014 Sepura STP8000	Sepura STP8000	Sepura SRG3900
Encrypted Status messages	Incomplete 0_pass_of_2	PASSED Complete 2_pass_of_2
Pre-emption of encrypted activity	Incomplete 0_pass_of_2	Incomplete 0_pass_of_2
Handling mismatched keys	Incomplete 2_pass_of_4	Incomplete 2_pass_of_4