

# TETRA Interoperability Certificate

## EASTCOM, eTRA, SwMI – Sepura, STP8000, Terminal

Hangzhou, October 2014

Latest Certified SwMI SW Release:	Rel 4.0	Latest Certified Terminal SW Release:	1703 005 02937
Latest Certified SwMI HW Release:	eTRANET_TP	Latest Certified Terminal HW Release:	PSNXW0C1T300M00

ISCTI (Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione) certifies, that the EASTCOM, eTRA, SwMI and the Sepura, STP8000, terminal have been subject to interoperability testing for the “certified” features listed on second page of this certificate, 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).

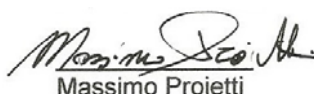
A breakdown into the feature details is given in the Feature Compliance Overview section of this certificate.

This certificate has been issued following a partially witnessed single test session between EASTCOM and Sepura 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.

**IOP test engineer**

**Radio Office Manager**

  
Roberto Feroci

  
Massimo Proietti

Giuseppe Pierri



ISCTI - V.le America 201, 00144 Rome, Italy  
Ph.: +39 06 5444 2135,  
Fax: +39 06 5410904  
e-mail: [tetra\\_ctc.iscom@mise.gov.it](mailto:tetra_ctc.iscom@mise.gov.it)  
Web: [www.mise.gov.it](http://www.mise.gov.it)

**Date of issue**  
**28 October 2014**  
**v 1**

## Certified features

<b>Tetra Association TTR001-01:Core</b>	
<b>Registration</b>	Certified
<b>Group Management</b>	Certified
<b>Group call</b>	Certified
<b>Individual call</b>	Certified
<b>Status messages</b>	Certified
<b>Pre-emptive Priority Call</b>	Certified
<b>Emergency Call</b>	Certified
<b>Cell Re-selection</b>	Certified
<b>PSTN interconnect</b>	Certified
<b>MS-ISDN Numbering</b>	-
<b>In Call Signalling</b>	Certified
<b>Subscriber Class Procedures</b>	Certified
<b>Common Secondary Control Channels</b>	Certified
<b>BS Fallback Operation</b>	Certified
<b>Energy Economy Mode</b>	-
<b>Transmit Inhibit</b>	Certified
<b>Mixed band operation</b>	-
<b>Tetra Association TTR001-02:SDS</b>	
<b>SDS Type 1, 2 or 3</b>	-
<b>SDS-TL</b>	Certified
<b>Store and Forward</b>	Certified
<b>Tetra Association TTR001-03:DGNA</b>	
<b>Support for individually addressed DGNA</b>	Certified
<b>Support for group addressed DGNA</b>	Certified
<b>Tolerance of unsupported DGNA functions</b>	-

<b>Tetra Association TTR001-04:Auth</b>	
<b>SwMI Initiated (non-mutual) Authentication</b>	Certified
<b>SwMI Initiated Authentication made Mutual by MS</b>	Certified
<b>TEI Query</b>	-
<b>Tetra Association TTR001-05:PD</b>	
<b>Context Management</b>	Certified
<b>Single Slot Packet Data</b>	Certified
<b>Multi Slot Packet Data</b>	Certified
<b>TEDS</b>	-
<b>Mixed band operation</b>	-
<b>Tetra Association TTR001-09:AL</b>	
<b>Ambience Listening</b>	Certified
<b>Interaction with Transmit Inhibit</b>	Certified
<b>Tetra Association TTR001-13:ED</b>	
<b>Enable and temporary disable of an MS</b>	Certified
<b>Permanent disable of an MS</b>	-

# 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-feature, the outcomes 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 light blue background.

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

Outcome	Definition
<b>Certified</b>	All required tests have been performed and passed
<b>Partial</b>	Not all the required tests 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 which is the result of an 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
<b>Passed</b>	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.
<b>Incomplete</b>	Not all Mandated tests (as per TIC-RT indication) have been executed
<b>Failed</b>	At least one of mandated test or steps of tests linked to this functionality failed to match the TIP specification relevant to this feature.

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
<b>Complete</b>	All mandated tests associated to the feature have been executed
<b>Spot</b>	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 the associated Test Report
<b>Regression</b>	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 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
<b>Regression on spot</b>	The regression method has been applied on the verdicts based on the spot testing method
<b>Witnessed</b>	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 features cannot be tested. The following table describes meaning of the used abbreviation:

Indication	Definition
<b>Not supported</b>	The SwMI and/or MS do not support the minimum features required to verify these items

ISCTI has made every effort to ensure that every result has 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 SwMI and Terminal under test in the last four test sessions 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 Date/Place	EASTCOM Hangzhou October 2014			
SwMI Type	eTRA			
SwMI HW Release	eTRANET_TP			
SwMI SW Release	Rel 4.0			
Terminal Type	STP8000			
Terminal HW Release	PSNXWOC1T300M00			
Terminal SW Release	1703 005 02937			
TIP Specs and TIP Compliance Test Plans				
Core	TTR001-01 v6.0.0 IOP001-01 v3.0.0 TIC-RT001-01 v261			
SDS	TTR001-02 v2.0.1 IOP001-02 v2.0.0 TIC-RT001-02 v213			

DGNA	TTR001-03 v2.0.0 IOP001-03 v2.0.1 TIC-RT001-03 v221			
Auth	TTR001-04 v3.0.0 IOP001-04 v2.0.0 TIC-RT001-04 v223			
PD	TTR001-09 v2.0.0 IOP001-09 v1.1.0 TIC-RT001-09 v122			
AL	TTR001-13 v2.0.0 IOP001-13 v1.0.0 TIC-RT001-13 v146			
ED	TTR001-03 v2.0.0 IOP001-03 v2.0.1 TIC-RT001-03 v221			

# Feature compliance report

Test Session	EASTCOM Hangzhou October 2014			
<b>Core</b>				
Registration	PASSED Complete (witnessed 4 passes) 5_pass_of_5			
ITSI attach	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
SwMI initiated location updating	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
LA timer based Periodic location updating	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
De-registration	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Group Management	PASSED Complete (witnessed 7 passes) 10_pass_of_10			
Single group attachment	PASSED Complete (witnessed 4 passes) 6_pass_of_6			
Multiple group attachment	PASSED Complete (witnessed 3 passes) 5_pass_of_5			
MS initiated group detachment	Not Supported			
SwMI initiated group management	Not Supported			
Group call	PASSED Complete (witnessed 5 passes) 12_pass_of_12			
Normal group call	PASSED Complete (witnessed 2 passes) 5_pass_of_5			
Late entry	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Priority Group scanning	PASSED Complete (witnessed 1 passes) 3_pass_of_3			



Call setup modifications	PASSED Complete (witnessed 0 passes) 1_pass_of_1			
Resource Queuing based on Call Priority	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
Broadcast Call	Not Supported			
Limited coverage notification	Not Supported			
Individual call	PASSED Complete (witnessed 3 passes) 10_pass_of_10			
Simplex individual call	PASSED Complete (witnessed 1 passes) 4_pass_of_4			
Duplex individual call	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
Call setup modifications	Not Supported			
Resource Queuing based on Call Priority	PASSED Complete (witnessed 1 passes) 4_pass_of_4			
Indication of imminent call disconnection	Not Supported			
Status messages	PASSED Complete (witnessed 3 passes) 4_pass_of_4			
Individual addressed Status transfer	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Group addressed Status transfer	PASSED Complete (witnessed 2 passes) 3_pass_of_3			
Pre-emptive Priority Call	PASSED Complete (witnessed 5 passes) 7_pass_of_7			
Pre-emption of Resources	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Pre-emption of Busy Users	PASSED Complete (witnessed 3 passes) 5_pass_of_5			
Emergency Call	PASSED Complete (witnessed 2 passes) 3_pass_of_3			
Pre-emption of Resources	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Pre-emption of Busy Users	PASSED Complete (witnessed 0 passes) 1_pass_of_1			

Call setup modifications	Not Supported			
Call disconnection by non-call owner	Not Supported			
Cell Re-selection	PASSED Complete (witnessed 7 passes) 13_pass_of_13			
Undeclared	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Unannounced	PASSED Complete (witnessed 0 passes) 2_pass_of_2			
Announced - with Call Restoration	PASSED Complete (witnessed 5 passes) 6_pass_of_6			
Announced - without Call Restoration	PASSED Complete (witnessed 1 passes) 4_pass_of_4			
Expedited	Not Supported			
PSTN interconnect	PASSED Complete (witnessed 2 passes) 5_pass_of_5			
TETRA Originated Call	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
PSTN Originated Call	PASSED Complete (witnessed 0 passes) 1_pass_of_1			
DTMF over-dial	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Emergency Telephone Calls	PASSED Complete (witnessed 0 passes) 1_pass_of_1			
MS-ISDN Numbering				
MS ISDN - Voice Call	Not Supported			
MS-ISDN Status	Not Supported			
In Call Signalling	PASSED Complete (witnessed 4 passes) 8_pass_of_8			
Slow Signalling on Traffic Channel (SACCH)	PASSED Complete (witnessed 2 passes) 4_pass_of_4			
Fast Signalling on Traffic Channel (FACCH)	PASSED Complete (witnessed 2 passes) 4_pass_of_4			

Subscriber Class Procedures	PASSED Complete (witnessed 2 passes) 5_pass_of_5			
Cell Selection based on Subscriber Class	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
Subscriber Class Delivery during Location Update	Not Supported			
Use of Preferred Subscriber Classes	PASSED Complete (witnessed 1 passes) 3_pass_of_3			
Common Secondary Control Channels	PASSED Complete (witnessed 3 passes) 6_pass_of_6			
One C-SCCH per cell	PASSED Complete (witnessed 1 passes) 3_pass_of_3			
Two C-SCCH per cell	PASSED Complete (witnessed 2 passes) 3_pass_of_3			
Three C-SCCH per cell	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
BS Fallback Operation	PASSED Complete (witnessed 7 passes) 16_pass_of_16			
Switch to/from BS Fallback Operation	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
Roaming with BS Fallback Operation	PASSED Complete (witnessed 3 passes) 6_pass_of_6			
Services with BS Fallback Operation	PASSED Complete (witnessed 3 passes) 8_pass_of_8			
Ignore a cell in Fallback Operation	Not Supported			
User selectable Fallback behaviour	Not Supported			
Energy Economy Mode				
Energy Economy Mode Operation	Not Supported			
Transmit Inhibit	PASSED Complete (witnessed 9 passes) 9_pass_of_9			
TXI Activation & De-Activation without Status message	PASSED Complete (witnessed 4 passes) 4_pass_of_4			
TXI Activation & De-Activation with Status message	PASSED Complete (witnessed 4 passes) 4_pass_of_4			

Receipt of group addressed service during TXI	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Mixed band operation				
Mixed band operation, inter-cell	Not Supported			
Mixed band operation, intra-cell	Not Supported			
Mixed band operation, Full	Not Supported			
<b>Short Data Service (SDS)</b>				
SDS Type 1, 2 or 3				
SDS Type 1	Not Supported			
SDS Type 2	Not Supported			
SDS Type 3	Not Supported			
SDS-TL	PASSED Complete (witnessed 8 passes) 13_pass_of_13			
Individually Addressed	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Group Addressed	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Using MS-ISDN dialling	Not Supported			
Using UCS2 coding scheme	PASSED Complete (witnessed 1 passes) 5_pass_of_5			
Using 7-bit coding scheme	PASSED Complete (witnessed 2 passes) 3_pass_of_3			
Using 8-bit Latin 1 coding scheme	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Using 8-bit Latin 5 coding scheme	Not Supported			
Using 8-bit Latin 9 coding scheme	Not Supported			
Store and Forward	PASSED Complete (witnessed 3 passes) 9_pass_of_9			
Individually Addressed	PASSED Complete (witnessed 3 passes) 9_pass_of_9			

Group Addressed	Not Supported			
<b>Dynamic Group Number Assignment (DGNA)</b>				
Support for individually addressed DGNA	PASSED Complete (witnessed 6 passes) 13_pass_of_13			
Support for individually addressed DGNA assignment without attachment	PASSED Complete (witnessed 2 passes) 4_pass_of_4			
Support for individually addressed DGNA assignment with attachment as selected group	PASSED Complete (witnessed 2 passes) 3_pass_of_3			
Support for individually addressed DGNA assignment with attachment as scanned group	PASSED Complete (witnessed 2 passes) 4_pass_of_4			
Support for individually addressed DGNA assignment with rejected attachment	Not Supported			
Support for individually addressed assignment for pre-programmed group	PASSED Complete (witnessed 1 passes) 5_pass_of_5			
Support for group addressed DGNA	PASSED Complete (witnessed 2 passes) 5_pass_of_5			
Support for group addressed DGNA assignment	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Management of 'group assignment lifetime'	PASSED Complete (witnessed 0 passes) 2_pass_of_2			
Support for group addressed DGNA deassignment	PASSED Complete (witnessed 0 passes) 1_pass_of_1			

Tolerance of unsupported DGNA functions				
MS tolerance of unsupported individual addressed DGNA signalling	Not Supported			
MS tolerance of unsupported group addressed DGNA signalling	Not Supported			
<b>Authentication</b>				
SwMI Initiated (non-mutual) Authentication	PASSED Complete (witnessed 1 passes) 3_pass_of_3			
Attach with authentication	PASSED Complete (witnessed 0 passes) 1_pass_of_1			
Roaming with authentication	PASSED Complete (witnessed 0 passes) 1_pass_of_1			
SwMI rejects MS during authentication	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
MS rejects SwMI during authentication	Not Supported			
SwMI Initiated Authentication made Mutual by MS	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Attach with authentication	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Roaming with authentication	PASSED Complete (witnessed 1 passes) 1_pass_of_1			

TEI Query				
TEI Query Operation	Not Supported			
<b>Packet Data</b>				
Context Management	PASSED Complete (witnessed 5 passes) 10_pass_of_10			
Context Activation	PASSED Complete (witnessed 3 passes) 6_pass_of_6			
User authentication	PASSED Complete (witnessed 2 passes) 4_pass_of_4			
Single Slot Packet Data	PASSED Complete (witnessed 4 passes) 8_pass_of_8			
Data Transfer	PASSED Complete (witnessed 2 passes) 5_pass_of_5			
Cell re-selection	PASSED Complete (witnessed 2 passes) 3_pass_of_3			
Multi Slot Packet Data	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
Data Transfer	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
TEDS				
TEDS with Context Activation	Not Supported			
TEDS Data Transmission, using LLC Optimisation	Not Supported			

TEDS Data Transmission, not using LLC Optimisation	Not Supported			
TEDS Cell Reselection, using LLC Optimisation	Not Supported			
TEDS Cell Reselection, not using LLC Optimisation	Not Supported			
Mixed band operation				
Mixed band operation, inter-cell	Not Supported			
Mixed band operation, intra-cell	Not Supported			
<b>TETRA Ambience Listening (SS-AL)</b>				
Ambience Listening	PASSED Complete (witnessed 3 passes) 5_pass_of_5			
SS-AL Call Setup	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
MS initiated SS-AL disconnection	PASSED Complete (witnessed 1 passes) 3_pass_of_3			
No Indication to affected user	PASSED Complete (witnessed 3 passes) 5_pass_of_5			
Interaction with Transmit Inhibit	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
AL can override TxI	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
AL cannot override TxI	PASSED Complete (witnessed 0 passes) 1_pass_of_1			



Enable Disable				
Enable and temporary disable of an MS	PASSED Complete (witnessed 9 passes) 12_pass_of_12			
Enable and temporary disable of an MS without authentication	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Enable and temporary disable of an MS with authentication	PASSED Complete (witnessed 2 passes) 2_pass_of_2			
Registration of a temporary disabled MS	PASSED Complete (witnessed 1 passes) 2_pass_of_2			
Rejection of applicable invalid enable/disable requests	PASSED Complete (witnessed 1 passes) 1_pass_of_1			
Removable SIMs do not affect the subscriber or equipment that has been enabled/disabled	Not Supported			
Disabling of an MS during a call or while on the PDCH	PASSED Complete (witnessed 3 passes) 5_pass_of_5			
Permanent disable of an MS				
Permanent disable of an MS with authentication	Not Supported			
Permanently Disabled MS cannot send air interface signalling	Not Supported			