

# TETRA Interoperability Certificate

## Airbus, Tetra System Rel 5.5, SwMI – Sepura, STP8000, Terminal

Berlin, September 2014

Latest Certified SwMI SW Release:	W15 15.2-0	Latest Certified Terminal SW Release:	1711 013 02937
Latest Certified SwMI HW Release:	M98F (DXTip)	Latest Certified Terminal HW Release:	PSNTW201T300R0001

ISCTI (Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione) certifies, that the Airbus, Tetra System Rel 5.5, 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 fully witnessed single test session between Airbus and Sepura on September 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**  
**16 October 2014**  
**v 1**

## Certified features

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

<b>Tetra Association TTR001-04:Auth</b>	
<b>SwMI Initiated (non-mutual) Authentication</b>	Partial
<b>SwMI Initiated Authentication made Mutual by MS</b>	Partial
<b>TEI Query</b>	Partial
<b>Tetra Association TTR001-21:Callout</b>	
<b>Full Callout</b>	-
<b>Simple Callout</b>	Partial
<b>Interaction with other services and events</b>	Partial
<b>Callout Test and Callout Availability</b>	Partial
<b>Callout Text and Callout Pre-Coded Status</b>	Partial
<b>Storage of Callout Information</b>	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-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	Airbus Berlin September 2014	Airbus Berlin June 2014	Cassidian Helsinki October 2012	
SwMI Type	Airbus Tetra System Rel5.5	Airbus Tetra System Rel5.5		
SwMI HW Release	M98F (DXTip)	M98F (DXTip)	M98F (DXTip)	
SwMI SW Release	W15 15.2-0	W15 15.2-0	W15 15.2-0	
Terminal Type	STP8000	STP8000		
Terminal HW Release	PSNTW201T300R0001	PSNTW201T300R0001	PSNTW201T300R0001	
Terminal SW Release	1711 013 02937	1711 013 02937	1711 013 02937	
SwMI Paladine Callout Application SW release	TECC DXT 1.1.1	TECC DXT 1.1.1	NA	
SwMI Testbench 5.5 Callout Application SW release	6.2.4.0	6.2.4.0	NA	

TIP Specs and TIP Compliance Test Plans				
Core	TTR001-01 v6.0.0 IOP001-01 v3.0.0 TIC-RT001-01 v261	-	TTR001-01 v5.1.1 IOP001-01 v2.6.4 TIC-RT001-01 v2.5.4	
SDS	TTR001-02 v2.1.1 IOP001-02 v2.0.0 TIC-RT001-02 v213	-	TTR001-02 v2.0.1 IOP001-02 v2.0.0 TIC-RT001-02 v2.1.2	
DGNA	TTR001-03 v2.0.0 IOP001-03 v2.0.1 TIC-RT001-03 v221	-	TTR001-03 v2.0.0 IOP001-03 v2.0.1 TIC-RT001-03 v2.2.1	
Auth	TTR001-04 v3.0.0 IOP001-04 v2.0.0 TIC-RT001-04 v223	-	TTR001-04 v3.0.0 IOP001-04 v2.0.0 TIC-RT001-04 v2.2.3	
Callout	TTR001-21 v1.0.0 IOP001-21 v1.0.0 TIC-RT001-21 v104	TTR001-21 v1.0.0 IOP001-21 v1.0.0 TIC-RT001-21 v104	NA	

# Feature compliance report

Test Session	Airbus Berlin September 2014	Airbus Berlin June 2014	Cassidian Helsinki October 2012
<b>Core</b>			
Registration	Incomplete 4_pass_of_5	-	PASSED Regression 1_pass_of_5
ITSI attach	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
SwMI initiated location updating	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
LA timer based Periodic location updating	Incomplete 1_pass_of_2	-	PASSED Regression 1_pass_of_2
De-registration	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
Group Management	Incomplete 9_pass_of_13	-	PASSED Regression 5_pass_of_15
Single group attachment	Incomplete 4_pass_of_7	-	PASSED Regression 2_pass_of_7
Multiple group attachment	Incomplete 4_pass_of_6	-	PASSED Regression 1_pass_of_6
MS initiated group detachment	Not Supported	-	PASSED Complete 2_pass_of_2
SwMI initiated group management	Incomplete 2_pass_of_2	-	Regression 0_pass_of_2
Group call	Incomplete 9_pass_of_12	-	PASSED Regression 2_pass_of_12
Normal group call	PASSED Complete 6_pass_of_6	-	Regression 0_pass_of_6
Late entry	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
Priority Group scanning	Incomplete 2_pass_of_3	-	PASSED Regression 1_pass_of_3
Call setup modifications	Not Supported	-	Not Supported



Resource Queuing based on Call Priority	Incomplete 0_pass_of_1	-	Regression 0_pass_of_1
Broadcast Call	Not Supported	-	Not Supported
Limited coverage notification	Incomplete 0_pass_of_1	-	PASSED Complete 1_pass_of_1
Individual call	Incomplete 5_pass_of_10	-	Regression 0_pass_of_10
Simplex individual call	Incomplete 3_pass_of_4	-	Regression 0_pass_of_4
Duplex individual call	PASSED Complete 2_pass_of_2	-	Regression 0_pass_of_2
Call setup modifications	Incomplete 0_pass_of_2	-	Regression 0_pass_of_2
Resource Queuing based on Call Priority	Incomplete 0_pass_of_2	-	Regression 0_pass_of_2
Indication of imminent call disconnection	Not Supported	-	Not Supported
Status messages	PASSED Complete 4_pass_of_4	-	Regression 0_pass_of_4
Individual addressed Status transfer	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
Group addressed Status transfer	PASSED Complete 3_pass_of_3	-	Regression 0_pass_of_3
Pre-emptive Priority Call	Incomplete 0_pass_of_5	-	Regression Incomplete 2_pass_of_6
Pre-emption of Resources	Incomplete 0_pass_of_2	-	PASSED Regression 1_pass_of_2
Pre-emption of Busy Users	Incomplete 0_pass_of_3	-	PASSED Regression 1_pass_of_4
Emergency Call	Incomplete 3_pass_of_5	-	PASSED Regression 1_pass_of_5
Pre-emption of Resources	PASSED Complete 2_pass_of_2	-	Regression 0_pass_of_2
Pre-emption of Busy Users	Incomplete 0_pass_of_1	-	PASSED Complete 1_pass_of_1
Call setup modifications	Incomplete 1_pass_of_2	-	Regression 0_pass_of_2
Call disconnection by non-call owner	Not Supported	-	Not Supported
Cell Re-selection	Incomplete 11_pass_of_22	-	PASSED Regression 10_pass_of_21
Undeclared	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1

Unannounced	PASSED Complete 3_pass_of_3	-	Regression 0_pass_of_3
Announced - with Call Restoration	Incomplete 5_pass_of_12	-	PASSED Regression 6_pass_of_11
Announced - without Call Restoration	Incomplete 2_pass_of_4	-	PASSED Regression 2_pass_of_4
Expedited	Incomplete 0_pass_of_2	-	PASSED Complete 2_pass_of_2
PSTN interconnect	Incomplete 4_pass_of_6	-	PASSED Regression 2_pass_of_6
TETRA Originated Call	Incomplete 1_pass_of_2	-	PASSED Regression 1_pass_of_2
PSTN Originated Call	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
DTMF over-dial	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
Emergency Telephone Calls	Incomplete 1_pass_of_2	-	PASSED Regression 1_pass_of_2
MS-ISDN Numbering	Incomplete 2_pass_of_4	-	Regression 0_pass_of_4
MS ISDN - Voice Call	PASSED Complete 1_pass_of_2	-	Regression 0_pass_of_2
MS-ISDN Status	Incomplete 1_pass_of_2	-	Regression 0_pass_of_2
In Call Signalling	Incomplete 6_pass_of_8	-	PASSED Regression 2_pass_of_8
Slow Signalling on Traffic Channel (SACCH)	PASSED Complete 4_pass_of_4	-	Regression 0_pass_of_4
Fast Signalling on Traffic Channel (FACCH)	Incomplete 2_pass_of_4	-	PASSED Regression 2_pass_of_4
Subscriber Class Procedures	Incomplete 4_pass_of_7	-	PASSED Regression 6_pass_of_10
Cell Selection based on Subscriber Class	Incomplete 0_pass_of_2	-	PASSED Complete 4_pass_of_4
Subscriber Class Delivery during Location Update	Incomplete 1_pass_of_2	-	PASSED Regression 2_pass_of_3
Use of Preferred Subscriber Classes	Incomplete 3_pass_of_3	-	Regression 0_pass_of_3
Common Secondary Control Channels	Incomplete 0_pass_of_7	-	PASSED Regression 1_pass_of_7
One C-SCCH per cell	Incomplete 0_pass_of_4	-	Regression 0_pass_of_4

Two C-SCCH per cell	Incomplete 0_pass_of_3	-	PASSED Regression 1_pass_of_3
Three C-SCCH per cell	Incomplete 0_pass_of_2	-	Regression 0_pass_of_2
BS Fallback Operation	Incomplete 8_pass_of_10	-	PASSED Regression 2_pass_of_10
Switch to/from BS Fallback Operation	Incomplete 1_pass_of_2	-	PASSED Regression 1_pass_of_2
Roaming with BS Fallback Operation	Incomplete 2_pass_of_2	-	Regression 0_pass_of_2
Services with BS Fallback Operation	Incomplete 5_pass_of_6	-	PASSED Regression 1_pass_of_6
Energy Economy Mode	Not Supported	-	
Energy Economy Mode Operation	Not Supported	-	Not Supported
Transmit Inhibit	Incomplete 7_pass_of_9	-	PASSED Regression 1_pass_of_5
TXI Activation & De-Activation	Incomplete 3_pass_of_4	-	Regression 0_pass_of_1
TXI Activation & De-Activation with TxI Status available to the Dispatcher	Incomplete 3_pass_of_4	-	PASSED Regression 1_pass_of_3
Receipt of group addressed service during TXI	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
Mixed band operation	Incomplete 0_pass_of_4	-	PASSED Regression 1_pass_of_4
Mixed band operation, inter-cell	Incomplete 0_pass_of_4	-	PASSED Regression 1_pass_of_4
Mixed band operation, intra-cell	Not Supported	-	Not Supported
Mixed band operation, Full	Not Supported	-	Regression 0_pass_of_1
<b>Short Data Service (SDS)</b>			
SDS Type 1, 2 or 3		-	
SDS Type 1	Not Supported	-	Not Supported
SDS Type 2	Not Supported	-	Not Supported
SDS Type 3	Not Supported	-	Not Supported

SDS-TL	Incomplete 9_pass_of_16	-	PASSED Regression 1_pass_of_11
Individually Addressed	PASSED Complete 2_pass_of_2	-	Regression 0_pass_of_2
Group Addressed	Incomplete 1_pass_of_2	-	PASSED Regression 1_pass_of_2
Using MS-ISDN dialling	PASSED Complete 2_pass_of_2	-	Regression 0_pass_of_2
Using UCS2 coding scheme	Incomplete 2_pass_of_4	-	Regression 0_pass_of_3
Using 7-bit coding scheme	Incomplete 2_pass_of_4	-	Regression 0_pass_of_2
Using 8-bit Latin 1 coding scheme	Incomplete 1_pass_of_2	-	NA
Using 8-bit Latin 5 coding scheme	Incomplete 0_pass_of_1	-	NA
Using 8-bit Latin 9 coding scheme	Not Supported	-	NA
Store and Forward	Incomplete 2_pass_of_9	-	PASSED Regression 1_pass_of_4
Individually Addressed	Incomplete 2_pass_of_6	-	PASSED Regression 1_pass_of_3
Group Addressed	Incomplete 0_pass_of_3	-	Regression 0_pass_of_1
<b>Dynamic Group Number Assignment (DGNA)</b>			
Support for individually addressed DGNA	Incomplete 3_pass_of_6	-	PASSED Regression 2_pass_of_6
Support for individually addressed DGNA assignment without attachment	Not Supported	-	Not Supported
Support for individually addressed DGNA assignment with attachment as selected group	Not Supported	-	Not Supported
Support for individually addressed DGNA assignment with attachment as scanned group	Incomplete 2_pass_of_4	-	PASSED Regression 1_pass_of_4

Support for individually addressed DGNA assignment with rejected attachment	Not Supported	-	Not Supported
Support for individually addressed assignment for pre-programmed group	Incomplete 1_pass_of_3	-	PASSED Regression 1_pass_of_3
Support for group addressed DGNA		-	
Support for group addressed DGNA assignment	Not Supported	-	Not Supported
Management of 'group assignment lifetime'	Not Supported	-	Not Supported
Support for group addressed DGNA deassignment	Not Supported	-	Not Supported
Tolerance of unsupported DGNA functions		-	
MS tolerance of unsupported individual addressed DGNA signalling	Not Supported	-	Not Supported
MS tolerance of unsupported group addressed DGNA signalling	Not Supported	-	Not Supported
<b>Authentication</b>			
SwMI Initiated (non-mutual) Authentication	Incomplete 2_pass_of_3	-	PASSED Regression 1_pass_of_3
Attach with authentication	Incomplete 0_pass_of_1	-	PASSED Complete 1_pass_of_1
Roaming with authentication	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
SwMI rejects MS during authentication	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
MS rejects SwMI during authentication	Not Supported	-	Not Supported
SwMI Initiated Authentication made Mutual by MS	Incomplete 1_pass_of_2	-	PASSED Regression 1_pass_of_2
Attach with authentication	Incomplete 0_pass_of_1	-	PASSED Complete 1_pass_of_1

Roaming with authentication	PASSED Complete 1_pass_of_1	-	Regression 0_pass_of_1
TEI Query	Incomplete 0_pass_of_1	-	Regression 0_pass_of_1
TEI Query Operation	Incomplete 0_pass_of_1	-	Regression 0_pass_of_1
<b>Callout</b>			
Full Callout			
Individually Addressed Full Callout with request for Terminal Receipt message and with request for User Receipt message	Not Supported	Not Supported	NA
Group Addressed Full Callout without request for Terminal Receipt message and without request for User Receipt message	Not Supported	Not Supported	NA
Using current selected group during Full Callout	Not Supported	Not Supported	NA
Full Callout with immediate change to Callout Group	Not Supported	Not Supported	NA
Full Callout with change to Callout Group on non-rejecting user response	Not Supported	Not Supported	NA
Full Callout with rejecting User Receipt message	Not Supported	Not Supported	NA
Full Callout with timeout for User Receipt message	Not Supported	Not Supported	NA
Callout Incident Information messages	Not Supported	Not Supported	NA
Group Call to Callout Group	Not Supported	Not Supported	NA
End of Full Callout	Not Supported	Not Supported	NA
Simple Callout	Incomplete 1_pass_of_6	PASSED Complete 6_pass_of_6	

Individually Addressed Callout with request for Terminal Receipt message and with request for User Receipt message	PASSED complete 1_pass_of_1	PASSED Complete 1_pass_of_1	NA
Individually Addressed Callout with request for Terminal Receipt message and without request for User Receipt message	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Group Addressed Callout without request for Terminal Receipt message and without request for User Receipt message	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Group Addressed Callout without request for Terminal Receipt message and with request for User Receipt message	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Simple Callout with rejecting User Receipt message	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Simple Callout with timeout for User Receipt message	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Interaction with other services and events	Incomplete 4_pass_of_28	Incomplete 24_pass_of_28	
Interaction with previous Callout	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Interaction with emergency call	Incomplete 0_pass_of_3	PASSED Complete 3_pass_of_3	NA
Interaction with non-emergency call	Incomplete 0_pass_of_11	PASSED Complete 11_pass_of_11	NA
Interaction with data and status	Incomplete 5_pass_of_13	Incomplete 8_pass_of_13	NA

Interaction with local services	Not Supported	Not Supported	NA
Manual exit	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Callout Test and Callout Availability	Incomplete 0_pass_of_3	PASSED Complete 3_pass_of_3	
Callout Test	Incomplete 0_pass_of_2	PASSED Complete 2_pass_of_2	NA
Callout Availability	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Callout Text and Callout Pre-Coded Status	Incomplete 2_pass_of_10	PASSED Complete 9_pass_of_9	
Callout Text	Incomplete 1_pass_of_3	PASSED Complete 3_pass_of_3	NA
Concatenated Callout Text	Incomplete 0_pass_of_1	Not Supported	NA
Callout Pre-Coded Status	Incomplete 1_pass_of_6	PASSED Complete 6_pass_of_6	NA
Storage of Callout Information	Incomplete 0_pass_of_2	PASSED Complete 2_pass_of_2	
Viewing Callout information from previous Callout(s)	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA
Deletion of Callout information from previous Callout(s)	Incomplete 0_pass_of_1	PASSED Complete 1_pass_of_1	NA