TETRA ASSOCIATION

ISCTI

DMO TETRA Interoperability Certificate

Motorola, MTP850, DM Terminal

Brussels, April 2010

Latest Certified DM Terminal SW Release:	MR5.11.1
Latest Certified DM Terminal HW Release:	PT911B

ISCTI (Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione) certifies that the Motorola MTP850 DM Terminal has been subject to interoperability testing for the features listed in the "Certified features" tables of of this certificate with the following DM Terminals Motorola MTP850, Sepura STP8000, Sepura SRG3900, EADS THR9, Motorola MTP850s, Motorola TCR1000, Cleartone CM5000, Teltronic MDT400, Teltronic HTT500, 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).

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

Detailed test results and explanation about the procedure used to provide verdicts are listed in the Test Report associated to this Certificate.

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Certified feature

DMO Core Test Session Brussels, April 2010 Motorola MTP850	Motorola MTP850	Sepura STP8000	Sepura SRG3900	EADS THR9	Motorola MTP850s	Motorola TCR1000	Cleartone CM5000	Teltronic MDT400	Teltronic HTT500
Features									
TTR002-01 DMO Core									
Registration	Certified	Certified	Certified	Certified	Certified	Certified	Certified	Certified	Certified
Group Call	Partial	Partial	Partial	Partial	Partial	Partial	Partial	Partial	Partial
Individual Call	Partial	Partial	Partial	Partial	Partial	-	Partial	Partial	Partial
Status Call	Partial	Partial	Partial	Partial	Partial	-	Partial	-	Partial
SDS TL	Certified	Certified	Certified	-	Certified	-	Certified	-	Certified
TTR002-05 DMO AIE-Core (*)									
DMO AIE Encryption	Partial	Partial	Partial	Partial	Partial	Partial	Partial	-	-

Feature Compliance Overview

The "Certified features" tables 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 certified DM Terminal is highlighted in light blue. The main features are indicated with grey background and the associated sub-features (or second level features) have white background.

The verdict assigned to a sub-feature as showed in the "Certified features" tables is derived by the Feature compliance report tables.

Verdict	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.
Time_limited	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 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 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.

X_pass_of_Y	Y test cases were required and X were passed.

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 Association web site

(http://www.tetra-association.com/tetramou.aspx?&id=2636).

The feature results are shown in the tables below.

Information on equipment under test and document references

Test Session Place/Date	Brussels, April 2010
DM Terminal Type	Motorola MTP850
DM Terminal HW release	PT911B
DM Terminal SW release	MR5.11.1
DM Terminal 1 Type	Sepura STP8000
DM Terminal 1 HW release	PSNTW201T300P0001
DM Terminal 1 SW release	1667 008 02937
DM Terminal 2 Type	Sepura SRG3900
DM Terminal 2 HW release	MSUTW201T2C0G00
DM Terminal 2 SW release	166700803577
DM Terminal 3 Type	EADS THR9
DM Terminal 3 HW release	RC-20
DM Terminal 3 SW release	6.53-4
DM Terminal 4 Type	Motorola MTP850s
DM Terminal 4 HW release	PT912BS
DM Terminal 4 SW release	MR5.11
DM Terminal 5 Type	Motorola TCR1000
DM Terminal 5 HW release	PT919S
DM Terminal 5 SW release	MR9.6.3
DM Terminal 6 Type	Cleartone CM5000
DM Terminal 6 HW release	1.0
DM Terminal 6 SW release	MR01.XXX.036
DM Terminal 7 Type	Teltronic MDT400
DM Terminal 7 HW release	CCP 00.09
DM Terminal 7 SW release	V20
DM Terminal 8 Type	Teltronic HTT500
DM Terminal 8 HW release	CCP 00.03
DM Terminal 8 SW release	V07
TIP Specs and TIP Compliance Test Plans	
DCore	TTR002-01 v2.1.1 IOP002-01 v1.0.1 TIC-RT002-01 v1.2.1
DAIE-Core	TTR002-05 v1.0.0 IOP002-05 v1.0.0 TIC-RT002-05_DMO-AIE-Core v1.0.3

Feature compliance report

DMO Test Session Brussels, April 2010 Motorola MTP850	Motorola MTP850	Sepura STP8000	Sepura SRG3900	EADS THR9	Motorola MTP850s	Motorola TCR1000	Cleartone CM5000	Teltronic MDT400	Teltronic HTT500
TTR002-01 Core									
Registration	**PASSED Complete 2_pass_of_2**	**PASSED Complete 2_pass_of_2**	**PASSED Complete 2_pass_of_2**	**PASSED Complete 2_pass_of_2**	**PASSED Complete 2_pass_of_2**	**PASSED Complete 2_pass_of_2**	**PASSED Complete 2_pass_of_2**	**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	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	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	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1	PASSED Complete 1_pass_of_1
Group Call	**Time_Limited 39_pass_of_44**	**Time_Limited 40_pass_of_43**	**Time_Limited 40_pass_of_43**	**Time_Limited 41_pass_of_44**	**Time_Limited 39_pass_of_44**	**Time_Limited 38_pass_of_43**	**Time_Limited 41_pass_of_44**	**Time_Limited 42_pass_of_45**	**Time_Limited 36_pass_of_40**
Intra-MNI Group Calls	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 8_pass_of_8	PASSED Complete 6_pass_of_6

DMO Test Session Brussels, April 2010 Motorola MTP850	Motorola MTP850	Sepura STP8000	Sepura SRG3900	EADS THR9	Motorola MTP850s	Motorola TCR1000	Cleartone CM5000	Teltronic MDT400	Teltronic HTT500
Inter-MNI Group Calls	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 5_pass_of_5	Time_Limited 1_pass_of_2
Emergency Group Calls	PASSED Complete 6_pass_of_6	PASSED Complete 5_pass_of_5	PASSED Complete 5_pass_of_5	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 5_pass_of_5	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6
Pre-emptive priority Calls	Time_Limited 0_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 0_pass_of_4	Time_Limited 0_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 2_pass_of_4
Group Call Maintenance	PASSED 19_pass_of_20	PASSED 19_pass_of_20	PASSED 19_pass_of_20	PASSED 19_pass_of_20	PASSED 19_pass_of_20	PASSED 19_pass_of_20	PASSED 19_pass_of_20	PASSED 19_pass_of_20	PASSED 19_pass_of_20
Late Entry Group Calls	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 6_pass_of_6	Time_Limited 2_pass_of_3
Open Group Calls	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 6_pass_of_6	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4
Individual Call	**Time_Limited 10_pass_of_21**	**Time_Limited 11_pass_of_21**	**Time_Limited 11_pass_of_21**	**Time_Limited 7_pass_of_21**	**Time_Limited 10_pass_of_21**	**Time_Limited 0_pass_of_3**	**Time_Limited 10_pass_of_21**	**Time_Limited 13_pass_of_25**	**Time_Limited 7_pass_of_15**

DMO Test Session Brussels, April 2010 Motorola MTP850	Motorola MTP850	Sepura STP8000	Sepura SRG3900	EADS THR9	Motorola MTP850s	Motorola TCR1000	Cleartone CM5000	Teltronic MDT400	Teltronic HTT500
Intra-MNI Individual Calls	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	**Not_Supported**	PASSED Complete 4_pass_of_4	Time_Limited 5_pass_of_7	PASSED Complete 4_pass_of_4
Inter-MNI Individual Calls	Time_Limited 4_pass_of_6	Time_Limited 4_pass_of_6	Time_Limited 4_pass_of_6	Time_Limited 2_pass_of_6	Time_Limited 4_pass_of_6	**Not_Supported**	Time_Limited 4_pass_of_6	Time_Limited 5_pass_of_8	**Not_Supported**
Pre-emptive priority Calls	Time_Limited 0_pass_of_6	Time_Limited 1_pass_of_6	Time_Limited 1_pass_of_6	Time_Limited 0_pass_of_6	Time_Limited 0_pass_of_6	**Not_Supported**	Time_Limited 0_pass_of_6	Time_Limited 1_pass_of_6	Time_Limited 1_pass_of_6
Individual Call maintenance	Time_Limited 2_pass_of_5	Time_Limited 2_pass_of_5	Time_Limited 2_pass_of_5	Time_Limited 1_pass_of_5	Time_Limited 2_pass_of_5	Time_Limited 0_pass_of_3	Time_Limited 2_pass_of_5	Time_Limited 2_pass_of_5	Time_Limited 2_pass_of_5
Individual Call with Presence Check	Time_Limited 0_pass_of_9	Time_Limited 0_pass_of_9	Time_Limited 0_pass_of_9	Time_Limited 0_pass_of_9	Time_Limited 0_pass_of_9	Time_Limited 0_pass_of_3	Time_Limited 0_pass_of_9	Time_Limited 0_pass_of_11	Time_Limited 0_pass_of_7
Individual call without Presence Check	Time_Limited 6_pass_of_8	Time_Limited 7_pass_of_8	Time_Limited 7_pass_of_8	Time_Limited 4_pass_of_8	Time_Limited 6_pass_of_8	**Not_Supported**	Time_Limited 6_pass_of_8	Time_Limited 8_pass_of_9	Time_Limited 5_pass_of_6
Individual Late Entry	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	PASSED Complete 4_pass_of_4	Time_Limited 3_pass_of_4	PASSED Complete 4_pass_of_4	**Not_Supported**	PASSED Complete 4_pass_of_4	PASSED Complete 5_pass_of_5	PASSED Complete 2_pass_of_2

DMO Test Session Brussels, April 2010 Motorola MTP850	Motorola MTP850	Sepura STP8000	Sepura SRG3900	EADS THR9	Motorola MTP850s	Motorola TCR1000	Cleartone CM5000	Teltronic MDT400	Teltronic HTT500
Status Call	**Time_Limited 12_pass_of_18**	**Time_Limited 15_pass_of_18**	**Time_Limited 15_pass_of_18**	**Time_Limited 8_pass_of_18**	**Time_Limited 12_pass_of_18**		**Time_Limited 8_pass_of_18**		**Time_Limited 15_pass_of_18**
Individual Status Calls	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2
Group Status call	Time_Limited 10_pass_of_16	Time_Limited 13_pass_of_16	Time_Limited 13_pass_of_16	Time_Limited 6_pass_of_16	Time_Limited 10_pass_of_16	**Not_Supported**	Time_Limited 6_pass_of_16	**Not_Supported**	Time_Limited 13_pass_of_16
SDS TL	**PASSED Complete 4_pass_of_4**	**PASSED Complete 4_pass_of_4**	**PASSED Complete 4_pass_of_4**		**PASSED Complete 4_pass_of_4**		**PASSED Complete 4_pass_of_4**		**PASSED Complete 4_pass_of_4**
Individual SDS-TL Calls	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2
Group SDS-TL call	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2

DMO Test Session Brussels, April 2010 Motorola MTP850	Motorola MTP850	Sepura STP8000	Sepura SRG3900	EADS THR9	Motorola MTP850s	Motorola TCR1000	Cleartone CM5000	Teltronic MDT400	Teltronic HTT500
TTR002-05 DMO AIE-Core									
DMO AIE Encryption	**Time_Limited No_Equipment 9_pass_of_18**	**Time_Limited No_Equipment 11_pass_of_18**	**Time_Limited No_Equipment 11_pass_of_18**	**Time_Limited No_Equipment 11_pass_of_18**	**Time_Limited No_Equipment 9_pass_of_18**	**Time_Limited No_Equipment 8_pass_of_14**	**Time_Limited No_Equipment 9_pass_of_18**		
Encrypted Group Calls	Time_Limited No_Equipment 4_pass_of_8	Time_Limited No_Equipment 5_pass_of_8	Time_Limited No_Equipment 5_pass_of_8	Time_Limited No_Equipment 5_pass_of_8	Time_Limited No_Equipment 4_pass_of_8	Time_Limited No_Equipment 5_pass_of_8	Time_Limited No_Equipment 4_pass_of_8		
Encrypted Individual Calls	Time_Limited 0_pass_of_2	Time_Limited 0_pass_of_2	Time_Limited 0_pass_of_2	Time_Limited 0_pass_of_2	Time_Limited 0_pass_of_2	**Not_Supported**	Time_Limited 0_pass_of_2		
Encrypted Status messages	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	**Not_Supported**	PASSED Complete 2_pass_of_2		
Pre-emption of encrypted activity	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2	PASSED Complete 2_pass_of_2		
Handling mismatched keys	Time_Limited 1_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 2_pass_of_4	Time_Limited 1_pass_of_4	Time_Limited 1_pass_of_4	Time_Limited 1_pass_of_4		

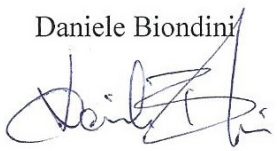
Annex A

List of Revisions of the Certificate

Date	Ver.	Modification
09.08.2010	1	First published version
18.11.2010	2	updating: the certificate has been changed according to CR 323. In particular, tests 2.1.1 and 3.1.9 have been removed.

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