



IST doc.10

# TETRA Terminal Interoperability Certificate

February 2003

**NOKIA**

Manufacturer	Terminal Type	Software/Hardware Release No.	Dates of testing
NOKIA	THR 850	SW: 4.70-1 HW THR-3	19-21 February 2003

ISCTI (Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione) has witnessed that the NOKIA terminal is operating in accordance with:

### ***TETRA Interoperability Profile:***

TIP v2 Core - TTR 001-01 ver 2.1.1, March 2000  
TIP v3 SDS - TTR 001-02 ver 1.0.1, August 2001  
TIP v3 PD - TTR 001-05 ver 1.0.0, November 2000

The test results for the tested features can be found in the tables of this certificate.

Authorised IOP test engineer

(Ivano Luciani)

Radio Office Manager

(Ing. A. La Padula)

ISCTI has made every effort to ensure that tests have been made correctly, and in accordance with the relevant TIPs. ISCTI has no liability for the test results, or towards the manufacturers.

ISCTI  
V.le America 201  
00144 Rome, Italy

Tif. +39 06 5444 2663  
Fax +39 06 5410904

E-mail: Web-

site: <http://www.comunicazioni.it>



## Information about the equipment used for testing

**Tested during the February 2003 IOP Test Session:**

The tests were performed using the following SwMI:

<b>Manufacturer</b>	<b>Infrastructure</b>	<b>Software/Hardware Release no.</b>
<b>Frequentis/ Damm</b>	<b>Motorola Compact TETRA</b>	<b>SW: Release 2 HW: CTS100 / CTS200</b>

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## Additional information about the test performed

The tests were performed at the premises of Frequentis in Vienna in the 380-400 MHz band .

The THR850 was full tested for the additional features (compared to the April 2002 certificate) and regression tested for previous tested features.

The SwMI was operating with the following configuration:

MCC	232
MNC	08
Colour code	47
LA10 carrier frequency (BS Tx)	391.0125 MHz
LA11 carrier frequency (BS Tx)	391.2625 MHz 391.5125 MHz 391.7625 MHz
LA21 carrier frequency (BS Tx)	422.5000 MHz
LA31 carrier frequency (BS Tx)	465.0000 MHz
ISDN gateway number	+43-1-81150-2703
Subscriber classes	FFFF <sub>16</sub>

## Test Results

The test results are shown in the tables below.

Test results and the certificates from previous IOP test session are available on TETRA MoU web site (<http://www.tetramou.com/interoperability>).

Tables indicate whether or not tests addressing a specific requirement of the TIP specification have been performed, whether or not the requirement is applicable for the SwMI, and the result of the test if executed. Each entry of the table may take one of seven values:

- : No test performed.
- N/A**: Not applicable for the SwMI
- NTPA**: No Test Plan/case Available
- No**: Not supported by Terminal
- P** : Pass
- F** : Fail
- I** : Inconclusive

The test results have been derived from examining the behaviour of a live system. The verdicts indicated are based on the log evaluation of the information exchange between the SwMI and the terminals indicated in the following tables. The verdicts reflect the fact that at the time of the IOP testing it was/was not possible to demonstrate a behaviour that was in accordance with the related requirement.

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**Table 1: Test performed CORE TIP V2**

Frequentis/Damm SwMI	Nokia THR850
<b>6 Registration</b>	
6.1 ITSI attach	P
6.2 ITSI attach including group attachment	-
6.3 Roaming location updating	P
6.4 De-registration	P
<b>7 Individual call</b>	
7.1 Call setup	
7.1.1 Hook signalling Semi-duplex	No
7.1.1 Hook signalling Semi-duplex, Queuing	No
7.1.1 Hook signalling Duplex	-
7.1.2 Direct through-connect Semi-duplex	N/A
7.1.2 Direct through-connect Semi-duplex, queuing	N/A
7.1.2 Direct through-connect Duplex	N/A
7.1.3 Call setup Modifications	
7.1.3.1.1 By SwMI, Direct to Hook	-
7.1.3.1.2 By SwMI, Hook to Direct	N/A
7.1.3.2 By called Party (7.1.3.2.3 Core 3)	-
7.2 Transmission control	
7.2.1 End of transmission, Hook signalling	P
7.2.1 End of transmission, Direct call	N/A
7.2.2 Request to transmit, Hook signalling	P
7.2.2 Request to transmit, Direct call	N/A
7.2.3 Request for speech item, Hook signalling	-
7.2.3 Pre-emptive speech item request	P
7.3 Call maintenance	NTPA
7.4 Call disconnection (by calling party- simplex)	P
7.4 Call disconnection (by calling party - duplex)	P
7.5 Emergency individual call	N/A
7.5.1 Emergency speech item request	N/A
7.5.2 Emergency individual call modification	N/A
<b>8 Group management</b>	
8.4 MS Attachment of the selected group	P
8.4 MS Attachment of the selected group (Rejection)	P
8.4 MS Attachment of the null group	-
8.4 MS Change of the selected group	-
8.6 MS initiated detachment	-
8.7 SwMI initiated group attachment and detachment	
8.7.1 SwMI initiated detachment (5.4.1)	N/A
8.7.2 SwMI initiated attachment (5.4.1)	N/A
8.7.3 SwMI initiated group reporting	N/A

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Frequentis/Damm SwMI	Nokia THR850
8.7.4 SwMI initiated registration with group report request	N/A
8.7.5 SwMI initiated registration without group report request	N/A
<b>9 Group call</b>	
9.1 Call setup	-
9.1 Call setup (Queuing)	-
9.1.1 Call setup modifications, Point-to-multipoint to point-to-point	N/A
9.1.1 Call setup modifications, Call priority	NTPA
9.2.1 End of transmission	-
9.2.2 Request to transmit	-
9.2.3.Pre emptive speech item request	-
9.3 Call disconnection (by SwMI)	-
9.4 Late entry	-
9.5 Emergency group call .	
9.5 Emergency group call (Setup to busy group)	P
9.5.1 Emergency speech item request	P
9.5.2 Emergency group call modification	N/A
<b>10 Cell re-selection</b>	
10.1 Undeclared cell re-selection	P
10.2 Unannounced cell re-selection with call restoration	
10.2.1 (Queuing Group call)	P
10.2.1 (Group call)	P
10.2.1 (individual call)	No
10.2.1 (Queuing, individual call)	No
10.2.2 Announced cell re-selection without preferred neighbour selected with call restoration	
10.2.2 (Group call)	P
10.2.2 (Queuing, group call)	P
10.2.2 (Pre-emption, group call)	P
10.2.2 (individual call, traffic) TX	P
10.2.2 (individual call, traffic) Rx	P
10.2.2 (individual call, inactivity)	P
10.2.2 (Queuing, individual call, traffic) Tx	P
10.2.2 (Queuing, individual call, traffic) RX	P
10.2.2 (Queuing, individual call, inactivity)	P
<b>11 Short data service</b>	
11.1.3.1 Status messages (MS to dispatcher)	-
11.1.3.2 Status messages (MS to MS)	P
8.1.3Text messaging	-
<b>12 Telephone call</b>	
12.1 Gateway Addresses	P
12.2 Call Set-up	

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Frequentis/Damm SwMI	Nokia THR850
12.2.1 MS Originated, Late Through-Connect	P
12.2.2 MS Originated, Early Through-Connect	-
12.2.3 MS Originated, Call Queued	P
12.2.4 MS Terminated	P
12.3 Call Maintenance	NTPA
12.4 DTMF Over-dial	N/A
12.5 Disconnect Causes	P
12.6 Emergency telephone call	N/A

**Table 2: Test performed SDS TIP V3**

Frequentis/Damm SwMI	Nokia THR850
<b>7 User defined data type 1, 2 and 3</b>	
7 Type 1	NTPA
7 Type 2	NTPA
7 Type 3	-
<b>8 User defined data type 4</b>	
8 Without SDS-TL	NA
8.1.2 With SDS-TL MS to MS, Standard Report	P
8.1.2 With SDS-TL MS to MS, Standard Report with Store and Forward	NA
8.1.3 With SDS-TL MS to MS, Short Report	P
8.2 Text messaging	
8.2.1.4 no acknowledgement requested	P
8.2.2 MS to MS, Short report	P

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**Table 3: Test performed PACKET DATA TIP V3**

Frequentis/Damm SwMI	Nokia THR850
<b>7 Packet Data functions</b>	
7.1 Context Activation (Test case number index)	
7.1.1 TE IPCP Initiated, Static Address (TE supplied)	P
7.1.2 TE IPCP Initiated, Dynamic Address	P
7.1.6 Provisioning Reject	P
7.2 Context Deactivation	
7.2.1 MS initiated deactivation	P
7.2.2 SwMI initiated deactivation	P
7.3 PDCH Access	
7.3.1 MS Initiated Access on the MCCH	P
7.3.1 MS Initiated Access on the MCCH (Roaming without Data transmission, STANBY state)	P
7.3.2 SwMI Initiated Access on the MCCH	P
7.3.3 MS Initiated Access Reject	P
7.4 Sn Data transfer	
7.4 Sn Data transfer	P
7.5 End of Data	
7.5.1 normal	P
7.5.2 MS timer Expired	NTPA
7.5.3 MS channel change	NTPA
7.6 Advanced Link Set-up	
7.6.1 MS initiated Advance Link Set-up	P
7.6.2 MS initiated Advance Link Reset	NTPA
7.6.3 SwMI initiated Advance Link Reset	NTPA
7.7 Advanced Link Data Transfer	
7.7.1 normal Downlink	P
7.7.2 Downlink, Lost Segment	NTPA
7.7.3 Downlink, Lost Segment and AR	NTPA
7.7.4 normal Up link	P
7.8 Advanced Link Disconnection	
7.8.1 MS initiated context deactivation	NTPA
7.8.2 SwMI initiated context deactivation	NTPA
7.10 Link Reconnect	
7.10.1 BS Data	NTPA
7.10.2 MS Data (Roaming during Data transmission, READY state)	F(A)
7.10.2 MS Data (Roaming without Data transmission, READY state)	-

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**Comments:**

**Note (A) – MS uses AL-SETUP instead of AL-RECONNECT**

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