



TETRA SwMI Interoperability Certificate

19 June 2002

Nokia Telecommunications

Telelaboratoriet (TDC Mobil A/S) has witnessed that the Nokia infrastructure is operating in accordance with

TTR 001-04 v1.0.0 (Nov 2000), TETRA Interoperability Profile (TIP)
version 3 Part 4: Authentication

for the following features:

Features	Tested(Yes/No)
• MS initiated location updating with authentication	Yes
• SwMI initiated location updating with authentication	No

The tests have been performed on Nokia NTS 2.1 infrastructure on the 19th-21th of March 2001 with hardware release DXT64 and software release (DXT64: W2 2.17-0 CD2, TBS400: TBCPGM 5.23-0), and the 2th-5th of October 2001 with hardware release DXT64 and software release (DXT64: W2 2.17-0 CD12, TBS400: TBCPGM 5.23-0).

The test results for the tested features can be found in table 1 and 2 of this certificate.

Authorised IOP test engineer

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Telelaboratoriet (TDC Mobil A/S) has made every effort to ensure that tests have been made correctly, and in accordance with TIP V3 Authentication. Telelaboratoriet (TDC Mobil A/S) has no liability for the test results, or towards the manufacturers.

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Information about the equipment used for testing

The tests performed on 19th-21th of March 2001 were performed using the following terminals:

Manufacturer	Terminal Type	Software/Hardware Release No.
Nokia ¹	THR420E	SW: HY11.03-9 HW: HRU 420-02
Marconi/OTE	PUMA T1	SW: 2.1.M HW: 02.01
Teltronic	MDT 400	SW: 01.02.01 HW: 01.03
Simoco Digital Systems	SRP1000	SW: 4313-327-72097 HW: PS3TT001T30000B
Simoco Digital Systems	SRM1000	SW: 4313-327-84844 HW: MS1TT001T20C0000

The tests performed on 2th-5th of October 2001 were performed using the following terminals:

Manufacturer	Terminal Type	Software/Hardware Release No.
Nokia	THR 850	SW: 2.16-0 HW: JL1-11
Marconi/OTE	PUMA T1	SW: 2.1.M HW: 02.01
Marconi/OTE	PUMA T2	SW: TB23817F HW: 774-0162/01.01

¹ Terminals in their native system have not been targeted by IOP tests.



Additional information about the tests performed

The tests were performed in the 380-400 MHz band. The SwMI was operating with the following configuration:

MCC	238
MNC	2
Colour code	42
LA1 (Høje Tåstrup) carrier frequency (BS Tx)	393.6625 MHz
LA2 (Høje Tåstrup) carrier frequency (BS Tx)	393.5125 MHz
PSTN gateway	16777184
Subscriber classes	FFFF ₁₆

Test Results

The table indicates whether or not tests addressing a specific requirement of the TIP specification have been performed, whether or not the requirement is applicable for the combination of the SwMI and the terminal, and the result of the test if executed. Each entry of the table may take one of six values: -: No test performed, N/A: Not applicable, P: Pass, F: Fail, I: Inconclusive or NTA: No test case being available. NTA will only be allocated if both SwMI and terminal has indicated that they support (comply with) the corresponding feature (requirement); if either has indicated the feature (requirement) as not being supported then the entry will be N/A. In case of all entries of a row being N/A it should be assumed that this feature is not supported by the SwMI.

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 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.

Table 1: Test performed on the 19th-21th March 2001

Abbreviations:

- : Not performed.
- N/A: Not applicable
- P: Pass
- F: Fail
- I: Inconclusive
- NTA: No test case available

Nokia SwMI	Marconi/OTE PUMA T1	Teltronic MDT 400	Simoco Digital Systems SRM1000	Simoco Digital Systems SRP1000
7 Authentication functions (Test case Number index)				
7.1 MS initiated location update with authentication, success (5.1)	P	P	P	P
7.1 MS initiated location update with authentication, failure (5.2)	P ¹	P ¹	P ²	P ²
7.1 MS initiated location update with authentication, roaming (5.3)	P	P	P	P
7.2 SwMI initiated location update with authentication, success	NTA	NTA	NTA	NTA
7.2 SwMI initiated location update with authentication, failure	NTA	NTA	NTA	NTA

Comments:

- 1) The authentication key in the SwMI is changed and the mismatch in the computation process leads to the result that the SwMI rejects the authentication of the MS.
- 2) The authentication key in the MS is changed and the mismatch in the computation process leads to the result that the SwMI rejects the authentication of the MS.



Table 2: Test performed on the 2th-5th October 2001

Abbreviations:

- : Not performed.
- N/A: Not applicable
- P: Pass
- F: Fail
- I: Inconclusive
- NTA: No test case available

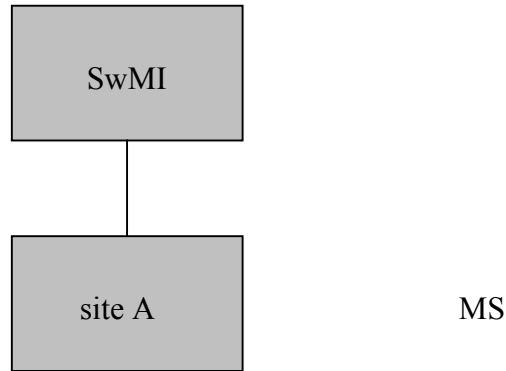
Nokia SwMI	Nokia THR 850	Marconi/OTE PUMA T1	Marconi/OTE PUMA T2
7 Authentication functions (Test case Number index)			
7.1 MS initiated location update with authentication, success (5.1)	P	P	P
7.1 MS initiated location update with authentication, failure (5.2)	P ¹	I ²	I ²
7.1 MS initiated location update with authentication, roaming (5.3)	P	P	P
7.2 SwMI initiated location update with authentication, success	NTA	NTA	NTA
7.2 SwMI initiated location update with authentication, failure	NTA	NTA	NTA

Comments:

- 1) The authentication key in the SwMI is changed and the mismatch in the computation process leads to the result that the SwMI rejects the authentication of the MS.
- 2) The SwMI log file is missing.

Test setup description

All tests except the cell re-selection test are carried out on a single site system with one carrier using standard antenna configurations.



For the cell re-selection test, an additional site is activated and the roaming MS is connected to the system via RF cables as illustrated below.

