

# SS7 MTP-L3 and M3UA IETF ETSI 2003

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## STATEM OF COMPLIANCE

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# 1 GENERAL

## 1.1 Introduction

This document details how the Ericsson SS7 MTPL3& M3UA IETF signaling component conforms with the ETSI standards Reference [1] and Reference [2].

Since the ETSI standards frequently references the ITU-standards Reference [3], Reference [4], Reference [5], and Reference [6], this document also shows how the Ericsson SS7 MTPL3& M3UA IETF signaling component conforms with these standards.

## 1.2 Concept

The terms that are used are:

<b>C</b>	The Ericsson signaling component complies with the specified section in the standard.
<b>N</b>	The Ericsson signaling component does not comply with the specified section in the standard.
<b>P</b>	The Ericsson signaling component complies partly with the specified section in the standard.
<b>-</b>	There is nothing to implement in the referred section (always placed in column C).





## 2 Compliance Lists

### 2.1 ETS 300 008-1

Table 1

References	C	N	P	Comments
Intellectual Property Rights	-			
Foreword	-			
Endorsement notice	-			
1. Scope	-			
2. References	-			
3. Abbreviations	-			
4. Modifications to ITU-T Recommendations Q.701 to Q.708	-			
4.1 National options	X			
4.2 Signaling data links	X			
4.3 Network Indicator	X			
5. Modifications to ITU-T Recommendation Q.701	X			General compliance to ITU-T Q.704 is described in Section 2.3 on page 4
6. Modifications to ITU-T Recommendation Q.703	-			
7. Modifications to ITU-T Recommendation Q.704	-			GeneXal compliance to ITU-T Q.704 is described in Section 2.4 on page 7
7.1 Signaling link management	X			
7.2 Subclause 14.2.1	X			
7.3 Table 1/Q.704	X			
7.4 Subclause 15.17.4	X			
7.5 SDL changes	X			
8. Modifications to ITU-T Recommendation Q.705	X			General compliance to ITU-T Q.705 is described in Section 2.5 on page 10
9. Modifications to ITU-T Recommendation Q.706	-			

Table 1

References	C	N	P	Comments
Annex ZA (normative): Specific requirements	-			
ZA.1 Signaling link loading	-			
ZA.1.1 Basic definition	-			
ZA.1.2 Maximum signaling link load during normal operation	-			
ZA.1.3 Minimum signaling link load handling capability	-			
ZA.1.4 Message length influence	-			
ZA.1.5 Graphic representation	-			
Bibliography	-			
History	-			

## 2.2 EN 301 004-1

Table 2

References	C	N	P	Comments
Clause 1	-			
Clause 2	-			
Clause 3	X			
Annex ZA (normative): Additional Requirements	-			
Annex ZB (informative): Applicability	-			

## 2.3 ITU-T Q.701

Table 3

References	C	N	P	Comments
1. Introduction	-			
2. Signaling system structure	-			
3. Message Transfer Part and the signaling network	-			
3.1 General	-			
3.1.1 Signaling network components			X	Note 1 on Page 15





Table 3

References	C	N	P	Comments
3.1.2 Signaling modes	X			
3.1.3 Signaling point modes	X			
3.1.4 Message labelling	X			
3.2 Signaling message handling functions	X			
3.3 Signaling network management functions	X			
3.4 Testing and maintenance functions	X			
3.5 Use of signaling network	X			
4 Message transfer capability	X			
5 Differences from Blue Book	-			See Section 2.4 on page 7
6 Compatibility in the Message Transfer Part	X			
7 Interworking of yellow, red and blue MTP implementation	-			
7.1 Yellow Book to Red Book interworking		X		
7.1.1 Level 2 flow control		X		
7.1.2 Transfer restricted and Transfer controlled procedures		X		
7.1.3 Transfer allowed/Transfer prohibited acknowledgments		X		
7.1.4 Management inhibiting procedure		X		
7.2 Red Book to Blue Book interworking	-			
7.2.1 Signaling Point Restart		X		
7.2.2 Q.703 and Q.704 timer values	X			
7.2.3 User flow control	X			
7.2.4 Management inhibit test procedure		X		
7.2.5 SIF length increase		X		
7.2.6 SIF length increase (National networks option)		X		
7.2.7 Processor outage		X		

*Table 3*

References	C	N	P	Comments
7.3 Yellow Book to Blue Book interworking		X		
7.4 Blue Book to the present version interworking	X			
7.5 Red Book to the present version interworking	X			
8 Primitives and parameters of the Message Transfer Part	X			



## 2.4 ITU-T Q.704

Table 4

References	C	N	P	Comments
1 Introduction	-			
1.1 General characteristics of the signaling network functions	X			
1.2 Signaling message handling	X			
1.3 Signaling network management			X	Note 2 on Page 15
2 Signaling message handling	X			
3 Signaling network management	-			
3.1 General			X	Note 2 on Page 15
3.2 Status of signaling links	X			
3.3 Procedures used in connection with link status changes	-			
3.3.1 Signaling link failed	X			
3.3.2 Signaling link restored	X			
3.3.3 Signaling link deactivated	X			
3.3.4 Signaling link activated	X			
3.3.5 Signaling link blocked			X	Note 6 on Page 15
3.3.6 Signaling link unblocked	X			
3.3.7 Signaling link inhibited	X			
3.3.8 Signaling link uninhibited	X			
3.4 Status of signaling routes	X			
3.5 Procedures used in connection with route status changes	X			
3.6 Status of signaling points	X			
3.7 Procedures used in connection with point status changes	X			
3.8 Signaling network congestion	X			
4 Signaling traffic management	-			
4.1 General	-			
4.2 Normal routing situation	X			Note 7 on Page 15
4.3 Signaling link unavailability	X			
4.4 Signaling link availability	X			
4.5 Signaling route unavailability	X			

Table 4

References	C	N	P	Comments
4.6 Signaling route availability	X			
4.7 Signaling route restriction	X			
4.8 Signaling point availability	X			
5 Changeover	-			
5.1 General	X			
5.2 Network configurations for changeover	X			
5.3 Changeover initiation and actions	X			
5.4 Buffer updating procedure	X			
5.5 Retrieval and diversion of traffic	X			
5.6 Emergency changeover procedures			X	Note 4 on Page 15
5.7 Procedures in abnormal conditions	X			
6 Changeback	X			
7 Forced rerouting	X			
8 Controlled rerouting initiation and actions	X			
9 MTP restart	X			Note 8 on Page 15
10 Management inhibiting	X			
11 Signaling traffic flow control	X			
12 Signaling link management	-			
12.1 General			X	Note 2 on Page 15
12.2 Basic signaling link management procedures	X			
12.3 Signaling link management procedures based on automatic allocation of signaling terminals		X		
12.4 Signaling link management procedures based on automatic allocation of signaling data links		X		
12.5 Automatic allocation of signaling terminals		X		
12.6 Automatic allocation of signaling data links		X		



Table 4

References	C	N	P	Comments
12.7 Different signaling link management procedures at the two ends of a link set	X			
13 Signaling route management	-			
13.1 General	X			
13.2 Transfer prohibited	X			
13.3 Transfer-allowed	X			
13.4 Transfer-restricted (National option)	X			Note 3 on Page 15
13.5 Signaling-route-set-test	X			
13.6 Transfer-controlled (International network)	X			
13.7 Transfer-controlled (National option with congestion priorities)	X			
13.8 Transfer-controlled (National option without congestion priorities)	X			
13.9 Signaling-route-set-congestion -test (National Option)	X			
14 Common characteristics of message signal unit formats	X			
15 Format and codes of signaling network management messages	-			
15.1 General	X			
15.2 Label	X			
15.3 Heading code (H0)	X			
15.4 Changeover message	X			
15.5 Changeback message	X			
15.6 Emergency changeover message	X			
15.7 Transfer-prohibited message	X			
15.8 Transfer-allowed message	X			
15.9 Transfer-restricted message (national option)	X			
15.10 Signaling-route-set-test message	X			
15.11 Management inhibit message	X			

Table 4

References	C	N	P	Comments
15.12 Traffic restart allowed message	X			
15.13 Signaling-data-link-connection-order message		X		
15.14 Signaling-data-link-connection-acknowledgement message		X		
15.15 Transfer-controlled message	X			
15.16 Signaling-route-set-congestion-test message (national option)	X			
15.17 User Part unavailable message	X			
16 Static transition diagrams, abbreviations and timers	-			
16.1 General	-			
16.2 Drafting conventions	-			
16.3 Signaling message handling	-			
16.4 Signaling traffic management	-			
16.5 Signaling link management	-			
16.6 Signaling route management	-			
16.7 Abbreviations used in Figures 23 onwards	-			
16.8 Timers and timer values			X	Note 5 on Page 15

## 2.5 ITU-T Q.705

Table 5

Reference	C	N	P	Comments
1. Introduction	-			
2. Network components	X			
3. Structural independence of international and national signaling networks	X			
4. Consideration common to both international and national signaling networks	-			
4.1 Availability of the network	X			



Table 5

Reference	C	N	P	Comments
4.2 Message transfer delay	X			
4.3 Message sequence control	X			
4.4 Number of signaling links used in load sharing	X			
4.5 Satellite working			X	Note 5 on Page 15
5. International signaling network	X			
6. Signaling network for cross-border traffic	-			
6.1 General	X			
6.2 Use of international hierarchical level	-			
6.2.1	X			
6.2.2		X		Note 9 on Page 15
6.2.3	X			
6.2.4	-			
6.3 Integrated numbering of national signaling networks	-			
6.4 Interworking of national signaling networks	-			
7. National signaling network	-			
8. Procedures prevent unauthorized use of an STP (optional)	-			
8.1 General	-			
8.2 Identifying unauthorized SS No. 7 messages	X			Note 10 on Page 15
8.3 Treatment of unauthorized SS No. 7 messages			X	Note 11 on Page 15
8.4 Measurements			X	Note 12 on Page 16
8.5 Notification to unauthorized user			X	Note 13 on Page 16
9. SS No. 7 Planning Tools	-			
A.1. General	X			
A.2. Basic network structure (example)	X			
A.3. Routing	X			

Table 5

Reference	C	N	P	Comments
A.4. Action relating to failure conditions	X			
A.5. Explanatory note from the implementors forum for clarification of load sharing	X			

## 2.6 ITU-T Q.707

Table 6

References	C	N	P	Comments
1 General	-			
2 Testing	X			
3 Fault location	-			
4 Signaling network monitoring	-			
5 Formats and codes of signaling network testing and maintenance messages	X			
6 State transition diagrams	X			





## 2.7 ITU-T Q.2210

Ericsson SS7 MTP-L3 M3UA IETF is compliant with ITU-T Q.2210 except for the deviations from ITU-T Q.704 (see Section 2.4 on page 7).





### 3 Notes and Comments

- Note 1** Link groups not supported.
- Note 2** Automatic allocation or reconfiguration of signaling equipment is not supported.
- Note 3** Since version CAA9011817R2Z module can be configured to behave compliant or partly compliant to ability of TFR sending (for configuration options see parameter "Route restriction handling" in Reference [8]). Before this version only partly compliant behavior takes place. In scope of partly compliant behavior, module never initiates sending of TFR, however, an incoming TFR may lead to TFRs being broadcasted.
- Note 4** No difference between long- and short-term processor outage. All emergency changeovers are treated as being initiated by a long-term processor outage.
- Note 5** The following timers are not implemented:  
  
T7, T9, T11, T24.
- Note 6** Timer T24 not used. Signaling traffic management commences without interruptions.
- Note 7** Priorities are not set on a per linkset basis, instead priorities are set on routes in routesets.
- Note 8** Blue book restart is supported according to Q.704 (1988).
- Note 9** A signaling point is able to be involved in signaling of both national and international traffic. However, a signaling point is not able to relay traffic in between a national and international network.
- Note 10** Standard compliant behavior is a configurable option. M3-IETF will be considered fully compliant with chapter 8.2 iii) that is inhibit/allow STP access by examination of OPC and DPC combination in the incoming STP message, if the feature "Forbid messages from unknown DPC" is enabled. Point 8.2 ii) is not applicable as according to the latest version of ETS 300 008-1, v. 1.3.2, 2003 Point 8.2 ii) shall not apply.

- Note 11** OPC and DPC combination in the incoming STP message. An STP is only able to discard unauthorized SS7 messages on a SPC basis, not on a per linkset basis. Furthermore, STPs only permit discard of all unauthorized SS7 messages or all STP messages outside designated ranges (see Section 8.2 in Reference [7] and Note 15 on Page 15).
- Note 12** Only monitoring of unauthorized messages on a SPC basis is supported.
- Note 13** Restriction of the number of violation reports is not supported.



# Glossary

**DPC**

Destination Point Code

**ISDN**

Integrated Services Digital Network

**ISDN-UP**

ISDN User Part

**M3-IETF**

MTPL3&M3UA IETF

**MSU**

Message Signal Unit

**MTP**

Message Transfer Part

**OPC**

Originating Point Code

**SCCP**

Signaling Connection Control Part

**SIF**

Signaling Information Field

**SIO**

Service Information Octet

**SL**

Signaling Link

**SPC**

Signaling Point Code

**STP**

Signaling Transfer Point

**TC**

Transaction Capability

**TFR**

Transfer Restricted





## Reference List

### ETSI standards

- [1] *ETS 300 008-1, ISDN SS7 MTP to support international interconnection, V1.3.2, June 2003*
- [2] *EN 301 004-1, B-ISDN SS7 MTP-L3 to support international interconnection, V1.1.3, 1998-02*

### ITU standards

- [3] *ITU-T Recommendation Q.701 Functional Description of the Message Transfer Part (MT) of Signaling System No. 7, 03/93*
- [4] *ITU-T Recommendation Q.704 Signaling System No. 7 - Signaling Network Functions and Messages, 07/96*
- [5] *ITU-T Recommendation Q.707 Testing and Maintenance, 11/88*
- [6] *ITU-T Recommendation Q.2210 MTP level 3 functions and messages using the services of ITU-T recommendation Q.2140, 07/96*
- [7] *ITU-T Recommendation Q.705 Signaling System No. 7 - Signaling Network Structure, 03/93*

### Ericsson AB

- [8] *Configuration File Description for MTPL3 & M3UA IETF, 19073-CAA 901 1817 Uen*