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Signalling requirements for Public Land Mobile Networks (PLMN) connected to a public switched telephone network. CCITT signalling system no.7 Message Transfer Part (MTP)

Contens *Page*

1 ADOPTION DATE

This specification shall take effect on the 1st of January 1995.

2 SCOPE

This specification covers requirement concerning Public Land Mobile Networks connected to a public switched telephone network (PSTN). CCITT signalling system no.7 Message Transfer Part (MTP). This specification replaces temporally European digital cellular telcommunication system, GSM- Signalling requirements for physical connection to the telephone network of "Televerket" Message Transfer Part (SS 63 60). The next revision of SS 63 60 will include the among the concerned operators agreed version of this specification,

3 OTHER RELATED STANDARDS

See Recommendations Q.701-707 of the 1984 years CCITT recommendations (red book), SS 63 63 61 Signalling requirements for public land mobile networks according to the paneuropean digital system, GSM connected to the public switched telephone network. CCITT Signalling system no.7 International Telephone User Part.(ITUP). and European digital cellular telcommunication system, GSM- Signalling requirements for physical connection to the telephone network of "Televerket" Signalling Connection Control Part SS 63 63 62.

4 GENERAL

To be able to transfer information between between switching nodes in a PLMN and A public network the interface between the PLMN and a public network supports the Message Transfer Part (MTP).

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5 MESSAGE TRANSFER PART (MTP)

5.1 GENERAL

The MTP to be used in the PLMN to a public network interface shall fulfil the requirements given below. They are based on Q.701-707 of the 1984 years CCITT recommendations (red book). The interface requirements are a subset of the Q.701-707 of the 1984 years CCITT recommendations (red book). In the following sections comments are given to the Q.701-707 of the 1984 years of CCITT recommendations (red book). Each section is given the same number as the concerned section to which the comment refers in the relevant recommendation.

It is possible to use a blue book implementation if the implementation takes into account interworking with a red book implementation.

5.2 RECOMMENDATION Q.701: FUNCTIONAL DESRIPTION OF THE MESSAGE TRANSFER PART

2.2 Functional levels

International TUP in accordance with SS 63 63 61 and SCCP in accordance with SS 63 63 62 are the only users of MTP defined. The additions of new users requires operational agreement.

3.1.2 Signalling mode

Non associated and associated mode of signalling is applicable.

3.1.3 Signalling point modes

At the PLMN to A public network interface STP working is applicable.

5.3 RECOMMENDATION Q 702: SIGNALLING DATA LINK

2 Signalling bit rate

Only 64 kbit/s digital signalling data links shall be used. The 64 kbit/s data link shall be a time slot in a PCM system. It shall be possible to use any time slot in a PCM system for the signalling data link.

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5 Digital Signalling data link

5.1 Signalling link derived from 2048 kbit/s digital path

Applicable

5.2 Signalling link derived from 8448 kbit/s digital path

Not applicable

5.2 Signalling link derived from 1544 kbit/s digital path

Not applicable

5.3-5.5 Not applicable

6 Analogue signalling data link

Not applicable

5.4 RECOMMENDATION Q.703: SIGNALLING LINK

2 Basic signal unit format

2.3.2 Flag

The implementation shall not require more than one flag between consecutive signal units, at the receiving side.

2.3.6 Signalling information field

A maximum signalling information length of 272 octets shall be accomodated.

3 Signalling unit delimitation

The implementation shall not require more than one flag between consecutive signal units, at the receiving side.

4 Acceptance procedure

Applicable

5 Basic error correction

Applicable

6 Error correction by Preventive Cyclic Retransmission (PCR)

Not applicable

7 Initial alignment procedure

If only one link is working in a link-set emergency alignment procedure applies.

8 Processor outage

Applicable

9 Level 2 flow control

Applicable

10 Signalling link error monitoring

Applicable

11-12 Applicable

5.5 RECOMMENDATION Q.704 SIGNALLING NETWORK FUNCTIONS AND MESSAGES

1 INTRODUCTION

Applicable

2 Signalling message handling

2.1 General

Applicable

2.2 Routing label

Only standard label is applicable.

2.3 Message routing function

Routing is only based destination point code (DPC) and signalling link selection field.

2.3.2 Load sharing

It shall be possible to load share within a link set and between link sets.It shall be possible, at a minimum, to have two active signalling links in a link set.

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2.3.4 Handling of level 3 messages

Applicable

2.3.5Handling of messages under signalling link congestion

Congestion priorities are not applicable.

2.4 Message discrimination and distribution functions

Applicable

3-3.3 Applicable

3.4 All procedures are applicable except 3.4.3 Signalling route restricted,

3.5 All are required except 3.5.3 Signalling route restricted.

3.6 Signalling network congestion

Applicable

4 Signalling traffic managment

4.1-4.6 Applicable

4.7 Signalling route restriction

Not applicable

5 Changeover

Applicable

6 Changeback

Applicable

7-8 Not applicable

9 Managment inhibiting

Applicable

10 Signalling traffic flow control

Applicable

11 Signalling link management

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Only the basic signalling link management functions (as specified in § 11.2) are required.

12 Signalling route managment

12.2 Transfer prohibited

Required

12.3 Transfer allowed

Required

12.4 Signalling route-set test

Required

12.5 Transfer-restricted

The transfer restricted procedure is not applicable.

12.6- 12.8 Transfer controlled

Required

12.9 Signalling-route-set-congestion-test

The signalling route-set-congestion-test procedure is not applicable.

13 Common characteristics of message signal unit

13.1 General

Applicable

13.2 Service information octet

Applicable

13.2.1 Service infomation

The following codes apply

0011 SCCP
0100 Telephone User Part

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13.2.2 Sub-service field

The network indicator is set to 11

13.3 Label

Applicable

Formats and codes of signalling network managment messages

The following messages are required: Transfer prohibited, Transfer allowed, Signalling route-set test for prohited destinations, and Transfer controlled. Signalling route-set test for restricted destinations, Signalling route-set congestion-test and transfer restricted are not applicable.

15 State transition diagrams

Applicable, in accordance with comments given above.

Annex ANot applicable

5.6 RECOMMEDATION Q.705: SIGNALLING NETWORK STRUCTURE

Applicable

5.7 RECOMMENDATION Q.706: MESSAGE TRANSFER PART SIGNALLING PERFORMANCE

Applicable

In terms of signalling messages per second, the signalling link shall, at a minimum, be capable of handling 150 typical Telephone User Part messages per second (in each direction). The target value is 200 messages per second.

5.8 RECOMMENDATION Q.707: TESTING AND MAINTENANCE

Applicable

An implementation shall be able to respond to a signalling link test message.