



SLOVENSKI STANDARD

SIST ETS 300 008:199+

01-a UfYW199+

**Digitalno omrežje z integriranimi storitvami (ISDN) - Signalizacija št. 7 - Sporočilno
-prenosni del (MTP) za podporo mednarodnega vzajemnega povezovanja**

Integrated Services Digital Network (ISDN); Signalling System No.7; Message Transfer
Part (MTP) to support international interconnection

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ICS:

33.080

Digitalno omrežje z
integriranimi storitvami
(ISDN)

Integrated Services Digital
Network (ISDN)

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EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 008

December 1991

Source: ETSI TC-SPS

Reference: T/S 43-01

ICS: 33.080

Key words: ISDN, SS7

**Integrated Services Digital Network (ISDN);
CCITT Signalling System No. 7
Message Transfer Part (MTP) to support international
interconnection**

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI), as working document T/S 43-01, and was adopted having passed through the ETSI standards approval procedure.

This ETS is based on CCITT Recommendations Q.701 to Q.708 as given in the CCITT Blue Book, 1988. The requirements of these CCITT Recommendations shall apply unless modified by the statements provided in Clauses 4 and 5 of this ETS and, in addition, shall include the specific requirements contained in Clause 6.

The CEPT Recommendation for the Message Transfer Part (MTP), see CEPT T/S 43-01, April 1987, may continue to be used for the early introduction of services e.g. GSM, GAP Phase 2 and the ISDN MOU.

Where CEPT Recommendation T/S 43-01 does not already conform with the CCITT Blue Book MTP, the appropriate sections of CCITT Recommendation Q.701 together with the additions contained in this ETS shall resolve any interworking problems between this ETS and CEPT Recommendation T/S 43-01.

CCITT Recommendations Q.709 [9] and Q.791 apply as appropriate, unmodified, since they have no impact on interworking and are considered for guidance only.

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1 Scope

The scope of this ETS is the further development of the CCITT Signalling System No. 7 protocols for both the Integrated Services Digital Network (ISDN) and Public Switched Telephone Network (PSTN) following the publication of CCITT Recommendations Q.701 to Q.708 [1] to [8].

This ETS is applicable to the international network and is not meant to restrict national networks.

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation Q.701 (1988): "Functional description of the message transfer part (MTP) of Signalling System No.7".
- [2] CCITT Recommendation Q.702 (1988): "Signalling data link".
- [3] CCITT Recommendation Q.703 (1988): "Signalling link".
- [4] CCITT Recommendation Q.704 (1988): "Signalling network functions and messages".
- [5] CCITT Recommendation Q.705 (1988): "Signalling network structure".
- [6] CCITT Recommendation Q.706 (1988): "Message transfer part signalling performance".
- [7] CCITT Recommendation Q.707 (1988): "Testing and maintenance".
- [8] CCITT Recommendation Q.708 (1988): "Numbering of international signalling point codes".
- [9] CCITT Recommendation Q.709 (1988): "Hypothetical signalling reference connection".
- [10] CCITT Recommendation Q.791 (1988): "Monitoring and measurements for Signalling System No.7 networks".
- [11] CEPT Recommendation T/S 43-01 (April 1987): "CCITT No.7 Message Transfer Part (MTP)".

3 Symbols and abbreviations

For the purposes of this ETS, the following abbreviations apply.

DPC	Destination Point Code
ISDN	Integrated Services Digital Network
LSSU	Link Status Signal Unit
MSU	Message Signal Unit
MTP	Message Transfer Part
PSTN	Public Switched Telecommunications Network

SIF	Signalling Information Field
SIO	Service Information Field
STP	Signalling Transfer Point
SP	Signalling Point
TFP	transfer-prohibited signal
TRA	transfer-restart-allowed signal
UPU	User Part Unavailable

4 Exceptions to CCITT Recommendations Q.701 to Q.708

The following exceptions to CCITT Recommendations Q.701 to Q.708 [1] to [8], as specified in the Blue Book, 1988, shall apply.

4.1 National options

No national options, or remarks, with regard to national options shall apply to this ETS.

4.2 Signalling data links

A standard bit rate of 64 kbit/s on signalling data links shall apply.

If signalling data links are to be provided over an analogue transmission path, any necessary digital to analogue or analogue to digital conversion shall be on the multiplexed transmission link after interface point C, as defined in figure 2 of CCITT Recommendation Q.702 [2].

4.3 Timer values

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The timer values included in CCITT Recommendations Q.703 [3], Q.704 [4] and Q.707 [7] shall apply, with the following exceptions.

4.3.1 CCITT Recommendation Q.703

These timers shall not apply: T1 (4,8 kbit/s), T2 low, T2 high, T4n (4,8 kbit/s), T4e (4,8 kbit/s), T6 (4,8 kbit/s) and T7 (4,8 kbit/s).

4.3.2 CCITT Recommendation Q.704

These timers shall not apply: T7, T11, T15, T16 and T24.

Timer values to be modified in CCITT Recommendation Q.704 [4], § 16.8:

- T18 Timer within a signalling point whose MTP restarts, for supervising link and linkset activation as well as the receipt of routing information. The value is implementation and network dependent. Criteria to choose T18 are given in CCITT Recommendation Q.704 [4], § 9.2.
- T19 Supervision timer during MTP restart to avoid possible ping-pong of transfer-prohibited signal (TFP) and traffic-restart-allowed signal (TRA) messages: 67 to 69 seconds.
- T20 Overall MTP restart timer at the signalling point whose MTP restarts: 59 to 61 seconds.
- T21 Overall MTP restart timer at a signalling point adjacent to one whose MTP restarts: 63 to 65 seconds.

NOTE: The values of the MTP restart timers (T18 to T21) defined above are for use during normal operation. It might be advantageous for the network operator(s) to define an alternative value for each timer for use in potential network failures. Such an emergency might be recognised by an abnormally large number of outages, and it would be at the discretion of the operator(s) to use the emergency set of timer values within the network. Thus, the selection of the appropriate timer set is within the responsibility of the network administration.

4.4 Signalling link management

Of the requirements in CCITT Recommendation Q.704 [4], only the basic signalling link management functions of § 12.2 shall apply and § 12.3, § 12.4, § 12.5 and § 12.6 shall not apply.

4.5 Procedures to prevent unauthorised use of a signalling transfer point

While CCITT Recommendation Q.705 [5] is intended as a guidance document only, it should be noted that the optional procedure for the prevention of unauthorised use of a Signalling Transfer Point (STP) as specified in CCITT Recommendation Q.705 [5], § 8, shall not be essential.

4.6 Network Indicator

Only the value 00 shall be used for the Network Indicator.

4.7 Signalling Point (SP) restart

CCITT Recommendation Q.704 [4], § 9, shall be replaced by the following.

9 MTP restart

9.1 General

When a signalling point is isolated from the network for some time, it cannot be sure that its routing data are still valid (note that circumstances might cause the management entity to isolate the node, i.e. make all links unavailable, in order to facilitate recovery from a partial isolation). Thus, problems could be present when the sending of User traffic is resumed, due to wrong routing data as well as due to many parallel activities (e.g. link activation, changebacks, etc.) which have to be performed within the node whose MTP is restarting.

The objective of the MTP restart procedure is to protect both the node whose MTP is restarting, and the network. This is done by giving the restarting MTP time to activate sufficient links, and to exchange enough routing data with the network, before User traffic is restarted. Note that in this context "sufficient" and "enough" mean that potential remaining problems should not cause the node to fail again.

A central part of the restart procedure is the exchange of network status information between the restarting MTP and the adjacent nodes. In order for the procedure to make sense, the network status should not change significantly during this information exchange. As a consequence there is an overall restart time defined for the node whose MTP is restarting as well as for the adjacent nodes. During this time, all activities within the node whose MTP is restarting as well as the adjacent nodes should be completed. This requires that the time available is used in an efficient way.

As a basis of the restart procedure it is assumed that most of the signalling points within the network are accessible. Thus, at the beginning of the restart procedure, all concerned routes are considered to be allowed, and the update of the network status is performed by the exchange of transfer-prohibited signal (TFP) messages.