



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.2150.1

(05/2001)

SERIES Q: SWITCHING AND SIGNALLING

Broadband ISDN – Signalling ATM adaptation layer
(SAAL)

Signalling Transport Converter on MTP3 and MTP3b

ITU-T Recommendation Q.2150.1

(Formerly CCITT Recommendation)

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For further details, please refer to the list of ITU-T Recommendations.

Signalling Transport Converter on MTP3 and MTP3b

Summary

This Recommendation specifies the Signalling Transport Converter on MTP3 and MTP3b. This Signalling Transport Converter on MTP utilizes the services offered by the Message Transfer Part of Signalling System No. 7. The sublayer structure, the PDU structures of the signalling transport converter sublayer, and the mechanisms for the provision of the generic signalling transport service are defined in depth.

The intent of this Recommendation is to provide a protocol specification that can be used in the ISDN and B-ISDN environment for the provision of a signalling transport service. In particular, this protocol provides a Generic Signalling Transport Service that is used by AAL type 2 and Bearer Independent Call Control (BICC) signalling protocols.

Source

ITU-T Recommendation Q.2150.1 was revised by ITU-T Study Group 11 (2001-2004) and approved under the WTSA Resolution 1 procedure on 15 May 2001.

Keywords

ATM Adaptation Layer (AAL), Asynchronous Transfer Mode (ATM), Bearer Independent Call Control (BICC), Broadband Integrated Services Digital Network (B-ISDN), Message Transfer Part (MTP), Signalling AAL (SAAL), Signalling Transport Converter (STC).

FOREWORD

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ITU-T Recommendation Q.2150.1

Signalling Transport Converter on MTP3 and MTP3b

1 Scope

This Recommendation specifies the signalling transport converter sublayer on top of the message transfer part (MTP) specified in ITU-T Q.704 [4] "MTP3" and ITU-T Q.2210 [6] "MTP3b"; both Recommendations specify the peer-to-peer protocol for the transfer of information and control between any pair of MTP level 3 entities. Since the service provided by either of these Recommendations is the same, this Recommendation only describes the actions in terms of MTP3 for clarity of expression. This Recommendation covers the specification of the sublayer structure, the PDU structures of the signalling transport converter sublayer, and the mechanisms for the provision of the Generic Signalling Transport Service.

When this Signalling Transport Converter on MTP is applied for a signalling protocol entity, that entity is liberated from considering peculiarities of the underlying signalling transport service. This is achieved by relying on a Generic Signalling Transport Service that is provided, for example, by the sublayer specified in this Recommendation.

This Recommendation describes the interactions between the Signalling Transport Converter (STC) and the next higher layer, e.g. the AAL type 2 or BICC signalling protocol entity, between the STC and the Message Transfer Part, and between the STC and layer management.

2 References

2.1 Normative references

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Q.2150.0 (2001), *Generic signalling transport service*.
- [2] ITU-T Q.701 (1993), *Functional description of the message transfer part (MTP) of Signalling System No. 7*.
- [3] ITU-T Q.703 (1996), *Signalling link*.
- [4] ITU-T Q.704 (1996), *Signalling network functions and messages*.
- [5] ITU-T Q.764 (1999), *Signalling System No. 7 – ISDN User Part signalling procedures*.
- [6] ITU-T Q.2210 (1996), *Message transfer part level 3 functions and messages using the services of ITU-T Recommendation Q.2140*.
- [7] ITU-T X.200 (1994), *Information technology – Open Systems Interconnection – Basic reference model: The basic model*.
- [8] ITU-T X.210 (1993), *Information technology – Open Systems Interconnection – Basic reference model: Conventions for the definition of OSI services*.

2.2 Bibliography

The following ITU-T Recommendations and other publications contain information that may be useful to understanding the usage of this Recommendation. There are no additional provisions of this Recommendation derived from these publications.

- [9] ITU-T Q.2140 (1995), *B-ISDN ATM adaptation layer – Service specific coordination function for signalling at the network node interface (SSCF at NNI)*.
- [10] ITU-T Q.2630.1 (1999), *AAL type 2 signalling protocol – Capability Set 1*.
- [11] ITU-T Q.2630.2 (2000), *AAL type 2 signalling protocol – Capability Set 2*.
- [12] ITU-T Q.1901 (2001), *Bearer independent call control protocol*.
- [13] ITU-T Q.1902.1 (2001), *Bearer independent call control protocol CS2 functional description*.
- [14] IETF RFC 791 (1981), *Internet Protocol*.
- [15] IETF RFC 2474 (1998), *Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers*.

3 Definitions

This Recommendation is based upon the concepts developed in ITU-T X.200 [7] and X.210 [8].

4 Abbreviations

This Recommendation uses the following abbreviations:

AAL	ATM Adaptation Layer
ATM	Asynchronous Transfer Mode
CL	Congestion Level
DPC	Destination Point Code
MTP	Message Transfer Part
NI	Network Indicator
NNI	Network Node Interface
OPC	Originating Point Code
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
SAP	Service Access Point
SDL	Specification and Description Language
SDU	Service Data Unit
SI	Service Indicator
SIO	Service Information Octet
SLS	Signalling Link Selection code
STC	Signalling Transport Converter

5 General description of the Signalling Transport Converter on MTP3 and MTP3b

5.1 Structure of the Signalling Transport Converter on MTP

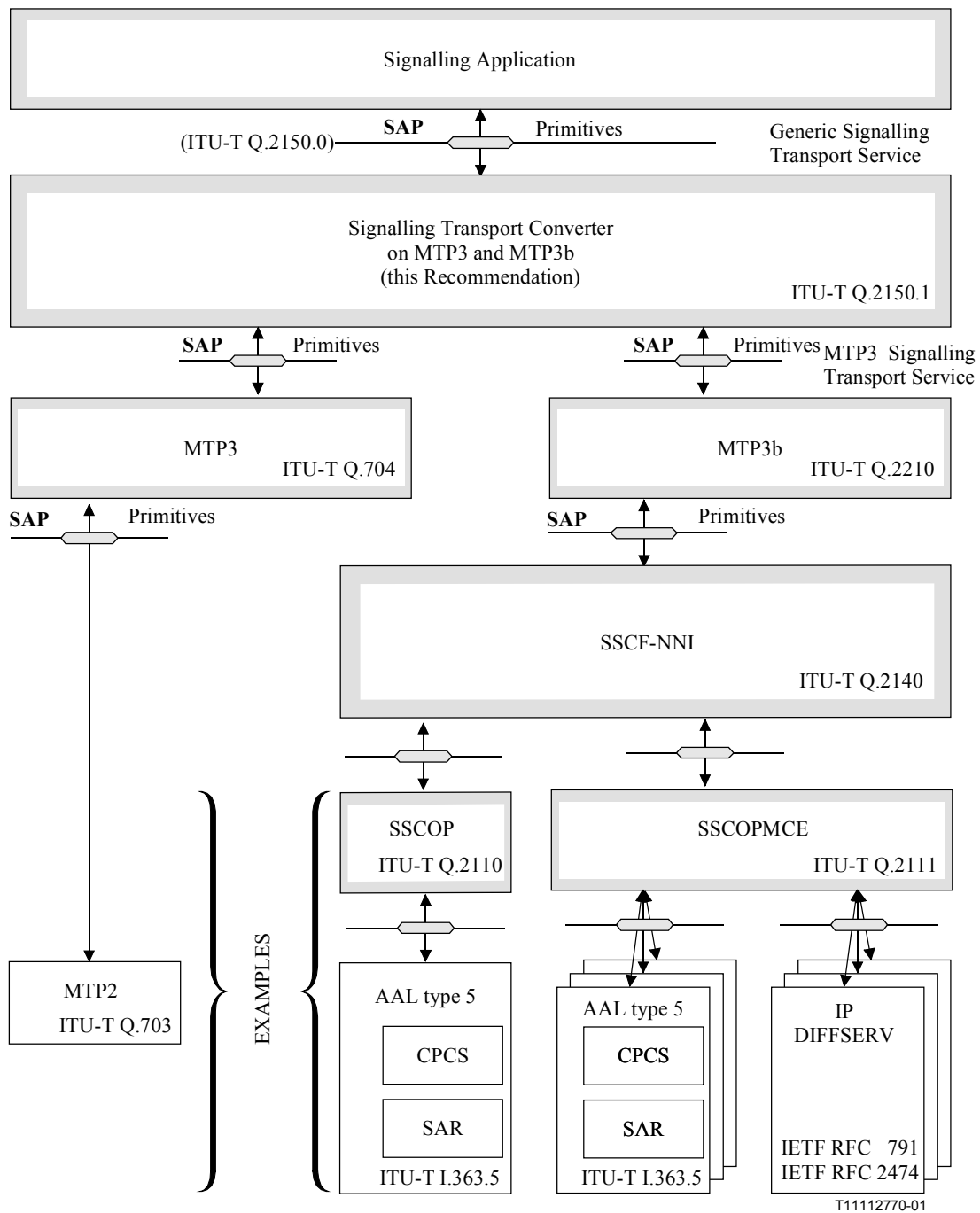
The sublayer providing the Signalling Transport Converter (STC) resides on top of the Message Transfer Part. It uses the services provided by level 3 of the Message Transfer Part defined in ITU-T Q.704 [4] and Q.2210 [6].

The STC provides the service that is requested by the Generic Signalling Transport Service defined in ITU-T Q.2150.0 [1], where the signalling protocol makes use of this service. The complete protocol stack is illustrated in Figure 5-1.

This Recommendation specifies:

- the interactions between the STC and the signalling protocol entity;
- the interactions between the STC and the MTP level 3 sublayer; and
- the interactions between the STC and layer management.

Figure 5-1



NOTE – The Service Access Points shown in this diagram are for modelling purposes only. They are not necessarily visible or accessible from outside.

Figure 5-1/Q.2150.1 – Structure of the Signalling Transport Converter on MTP

5.2 Services provided by the STC

The STC provides for the transparent transfer of data, i.e. signalling application (STC user) data between peer STC users. The supporting communication resources to achieve this transfer stay invisible to the signalling application.