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Storitve in protokoli za napredna omreġja (SPAN) ï MTP/SCCP/SSCOP in SIGTRAN (prenos SS7 preko IP) ï Uporabniġka prilagodilna plast sporoļ ilno-prenosnega dela 3 (M3UA) [prevzeti RFC 3332 (2002), spremenjen]

Services and Protocols for Advanced Networks (SPAN); MTP/SCCP/SSCOP and SIGTRAN (Message of SS7 over IP); Message transfer part 3 User Adaptation layer (M3UA) [Endorsement of RFC 3332 (2002), modified]

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Technical Specification

Services and Protocols for Advanced Networks (SPAN); MTP/SCCP/SSCOP and SIGTRAN (Message of SS7 over IP); Message transfer part 3 User Adaptation layer (M3UA)

[Endorsement of RFC 3332 (2002), modified]

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

Endorsement notice

The Elements of the Internet Engineering Task Force Request for Comments RFC 3332 [1] apply, with the following modifications.

Introduction

The present document records the changes to the Internet Engineering Task Force (IETF) RFC 3332 [1]. This RFC specifies an Internet standard track protocol for the transport of Signalling Systems No.7 (SS7) information over IP using the Stream Control Transmission Protocol.

1 Scope

The present document specifies the requirements for the MTP3 User Adaptation layer (M3UA), when used in conjunction with the Stream Control Transmission Protocol (SCTP) for the transport of the Signalling System No.7 Message Transport Part 3 (MTP3) information over the Internet Protocol (IP). The document endorses and constrains where relevant the SIGTRAN (IETF) RFC 3332 [1] of M3UA.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
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[1] IETF RFC 3332 (2002): "Signaling System 7 (SS7) Message Transfer Part 3 (MTP3) - User Adaptation Layer (M3UA)", G. Sidebottom, K. Morneault, J. Pastor-Balbas.

[2] ETSI TS 102 144: "Services and Protocols for Advanced Networks (SPAN); MTP/SCCP/SSCOP and SIGTRAN; SCTP [Endorsement of RFC 2960 and RFC 3309 , modified]".

[3] ETSI EN 300 008-1: "Integrated Services Digital Network (ISDN); Signalling System No.7; Message Transfer Part (MTP) to support international interconnection; Part 1: Protocol specification [ITU-T Recommendations Q.701, Q.702, Q.703, Q.704, Q.705, Q.706, Q.707 and Q.708 modified]".

[4] ITU-T Recommendation Q.704: "Specifications of Signalling System No. 7, Message Transfer Part, Signalling network functions and messages".

[5] ETSI EG 201 693: "Integrated Services Digital Network (ISDN); Signalling System No.7; Master list of codepoints".

[6] ETSI TS 102 141: "Services and Protocols for Advanced Networks (SPAN); MTP/SCCP/SSCOP and SIGTRAN (Transport of SS7 over IP); Message transfer part 2 User Adaptation layer (M2UA) [Endorsement of RFC 3331 (2002), modified]".

[7] ETSI TS 102 143: "Services and Protocols for Advanced Networks (SPAN); MTP/SCCP/SSCOP and SIGTRAN (Transport of SS7 over IP); Signalling connection control part User Adaptation layer (SUA) [Endorsement of SIGTRAN-SUA-14 (December 2002), modified]".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

example 1: text used to clarify abstract rules by applying them literally

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AS	Application Server
ASP	AS Process
BEAT	heartBEAT
BEAT Ack	heartBEAT Acknowledgement
DAUD	Destination state AUDit
DRST	Destination ReSTricted
DUNA	Destination UNAvailable
DUPU	Destination User Part Unavailable
IANA	Internet Assigned Numbers Authority
IETF	Internet Engineering Task Force
IP	Internet Protocol
RFC	Request For Comment
SCTP	Stream Control Transmission Protocol
SG	Signalling Gateway
SGP	SG Process
SS7	Signalling System Number 7
TCP	Transmission Control Protocol

4 General considerations applicable to transport of Signalling System No. 7 over IP

The elements of SIGTRAN adaptation layers apply with the following exceptions and restrictions. The considerations in this clause are common to TS 102 141 [6], the present document and TS 102 143 [7].

4.1 Transport protocol

The protocol underlying the adaptation layer for transport of SS No.7 signalling information in IP networks shall be SCTP.

4.2 SCTP considerations

The SCTP used shall conform to TS 102 144 [2].

The SCTP payload protocol identifier for messages pertaining to an adaptation layer shall be the one assigned by IANA for that layer. Adaptation layer messages received with neither the IANA payload protocol identifier nor payload protocol identifier equal to 0 shall be silently discarded.

Unordered user messages shall not be used.

4.3 National options

No national options excluded by ETSI standards shall apply to the present document.

4.4 Application Server mode

The Broadcast mode shall not be used.

4.5 Application Server state handling

If multiple Application Server Processes (ASPs) are used within the AS, the AS shall be considered active when the first ASP becomes active, and shall remain active until the last ASP becomes inactive.

4.6 Dynamic registration

Dynamic registration shall not be used for configuration management. The configuration of the system shall be modified only by the management system, and not by the protocol itself.

4.7 Message distribution to the Application Server

The key to enable messages to be distributed to the appropriate AS shall have a granularity no smaller than is allowed by the network management messages appropriate to that layer.

4.8 Receipt of unrecognized messages

If a message with an unrecognized message class is received, a Management Error message shall be returned with Error Code "Unsupported Message Class".

5 Considerations applicable to M3UA

5.1 National options

No national options excluded by EN 300 008-1 [3] shall apply to the present document.

5.2 Dynamic registration

Dynamic registration of Routing Keys shall not be used for configuration management. The configuration of the system shall be modified only by the management system, and not by the protocol itself.

5.3 Message distribution to the Application Server

The Routing Key to enable messages to be distributed to the appropriate AS shall have a granularity no smaller than Point Code.

5.4 M3UA procedures

The M3UA procedures shall be as defined in RFC 3332 [1] augmented by ITU-T Recommendation Q.704 [4] as modified by EN 300 008-1 [3], except where otherwise defined below.

6 Modifications to RFC 3332

Modifications to RFC 3332 [1] are listed according to the sections and subsections of RFC 3332 [1].

Subsection 1.3.1 Protocol Architecture

SCTP shall be used as the transport protocol for M3UA. TCP shall not be used as the transport protocol for M3UA.

Subsection 1.3.2.1 Support for the Transport of MTP3-User Messages

The maximum signalling information field size shall be 272 octets.

Subsection 1.3.2.3 Interworking with MTP3 Network Management Functions

M3UA at the ASP shall be enabled to initiate audit of availability of remote SS7 destinations. Restricted or congested states should not be audited.