

**Services and Protocols for Advanced Networks (SPAN);
Status report of transport mechanisms and protocols
for the next generation of IP networks**



Reference

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Foreword

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

1 Scope

The present document describes the status of the documents worked on by Special Task Force (STF) 226.

2 References

For the purposes of this Technical Report (TR) the following references apply:

- [1] 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]".
 - [2] ETSI TS 102 142: "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]".
 - [3] 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]".
 - [4] ETSI TS 102 144: "Services and Protocols for Advanced Networks (SPAN); MTP/SCCP/SSCOP and SIGTRAN (Transport of SS7 over IP); Stream Control Transmission Protocol (SCTP) [Endorsement of RFC 2960 and RFC 3309, modified]".
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3 Abbreviations

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

M2PA	Message transfer part 2-User Peer-to-peer Adaptation layer
M2UA	Message transfer part 2 User Adaptation layer
M3UA	Message transfer part 3 User Adaptation layer
SUA	Signalling connection control part User Adaptation layer
SCTP	Stream Control Transmission Protocol
SIGTRAN	SIGnalling TRANsport
IP	Internet Protocol

4 Report

4.1 Final list of TSs

Initially STF 226 worked on four adaptation layers developed in the SIGTRAN working group of the Internet Engineering Task Force (IETF): M2PA, M2UA, M3UA and SUA. The analysis of M2PA showed that there are no protocol elements which need to be adopted by ETSI networks. Furthermore the discussion on the SIGTRAN mailing list and at the SIGTRAN PlugTest held in November 2002 at ETSI premises showed that the protocol itself has substantial deficiencies. Furthermore during the analysis of the other adaptation layer protocols it became clear that a document for SCTP needed. It was decided with the TB that STF 226 stops the work on M2PA and works on SCTP instead. Therefore the list of produced TSs is TS 102 141 [1] for M2UA, TS 102 142 [2] for M3UA, TS 102 143 [3] for SUA and TS 102 144 [4] for SCTP.

4.2 SCTP

TS 102 144 [4] focusses on the requirements for an SCTP implementation used for signalling transport. All SCTP implementations are required to use the same checksum algorithm to ensure interoperability. For providing network fault tolerance the support of multihoming is required and the heartbeat mechanism shall be used. Also multiple streams shall be supported because it is required by some SIGTRAN layers. The support of features not used by SIGTRAN layers is not required. It is also required that parameters are configurable in given ranges. The choice of these values is crucial for the successful use of SCTP for signalling transport. These values are within the given ranges but the concrete values are not given.

4.3 M2UA, M3UA and SUA

All three adaptation layers are handled the same way. In the common clause 4 of TS 102 141 [1], TS 102 142 [2], TS 102 143 [3] and TS 102 144 [4], considerations are given which make sure the different implementations are interoperable. Therefore it is required that SCTP is the transport protocol. Furthermore no national options are required. Dynamic registration procedures shall not be used due to foreseen interoperability problems. Application servers shall not use the broadcast mode. Furthermore it is very important that the granularity of traffic handled by application servers is not smaller than allowed by the network management messages appropriate to that layer. This restricts the usage of the protocols but it is necessary to do so for being able to interact with the SS7 network in an appropriate way.

4.4 Further work

During the work of STF 226 some topics were found which need further work. These topics were out of the scope of STF 226. These topics are:

- it should be analyzed and documented which protocol should be used in particular situations;
- it should be analyzed and documented how the protocols should be used and are interworking with the SS7 network. For example, it should be considered what happens in single SG and dual SG scenarios;
- it should be analyzed and documented how protocol parameters should be chosen. This includes the parameters of SCTP depending on the scenario and the protocol parameters of the SIGTRAN protocols;
- it should be analyzed and documented how the different congestion control algorithms in the SS7 network and the IP network interact;
- it should be analyzed and documented how secure signalling transport can be provided.

History

Document history		
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