Network Working Group
INTERNET-DRAFT

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Connection-Oriented Support for the SS7 SCCP User Adaptation Layer (SUA-CO)

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Status of this Memo

Abstract

This Internet-Draft describes parameters and procedures in extension to the SS7 SCCP User Adaptiation Layer [SUA09] that permits seamless Connection-Oriented operation with Network Service Users not possible in the existing protocol.

1. Introduction

SCCP [Q.711], and the OSI Network Services Definition [X.213] upon which SCCP is based, provides primitives at the SCCP to SCCP-User boundary. Although SUA [SUA09] claims seamless operation with SCCP and SCCP-Users, SUA does not provide the following:

- Mapping of the Connection-Oriented SCCP/SCCP-User primitive interface to SUA messages.
- Procedures for local management (binding, listening and accepting) of SCCP connections.
- Procedures for operation in multiple SG as STP configurations.
- Procedures for operation without coupling at the SG.
- Procedures for GTT support at the ASP/IPSP.

This document provides for these capabilities allowing seamless interworking between the SS7 and IP networks with SUA-CO.

1.1. Scope

1.2. Terminology

The terminology of SUA [SUA09] also applies in this document. This document provides additional terminology as follows:

1.3. Overview

1.4. Functional Areas

1.4.1. Definition of the SCCP-User Boundary

1.4.1.1. Mapping of SCCP Primitives

Table 1. Mapping of SCCP Primitives

Mode	Primitive	Name	SUA Msg
Connection-Less	N-UNITDATA	Request Indication	CLDT
	N-NOTICE	Indication	CLDR
Connection Oriented	N-CONNECT	Request Indication	CORE
		Response Confirmation	COAK
	N-DATA	Request Indication	CODT
	N-EXDATA	Request Indication	
	N-RESET	Request Indication	RESRE
		Response Confirmation	RESCO
	N-DISCONNECT	Request Indication	COREF RELRE
	N-INFORM	Indication	COERR
Management	N-STATE	Indication	SSNM
	N-PCSTATE	Indication	

1.5. Sample Configurations

2. Conventions

3. Protocol Elements

3.1. Messages

3.1.1. Connectionless (CL) Messages

3.1.1.1. Connectionless Data Transfer (CLDT)

3.1.1.2. Connectionless Data Response (CLDR)

3.1.2. Connection-Oriented (CO) Messages

3.1.2.1. Connection Request(CORE)

Table 2. Mapping of N-CONNECT Request Parameters

N-CONNECT Request Parameter		**CORE ASP->SG Parameter**	
Called Address	M	Destination Address	M
Calling Address	U*1	Source Address	O
Expedited Data Selection	U	Protocol Class	M
Quality of Service	M	Protocol Class	M
		Sequence Control	M
		Sequence Number	O
		SS7 Hop Count	O
		Message Priority	O
		Credit	O
User Data	U	Data	O
Importance	O	Importance	O
Connection Identification	U	Routing Context	M
		Source Reference Number	M

Table 3. Mapping of N-CONNECT Indication Parameters

N-CONNECT Indication Parameter		**CORE SG->ASP Parameter**	
Called Address	M	Destination Address	M
Calling Address	C*1	Source Address	O
Quality of Service	M	Protocol Class	M
		Message Priority	O
		Sequence Control	M
		SS7 Hop Count	O
		Credit	O
User Data	C(=)*2	Data	O
Importance	U	Importance	O
Connection Identification	O	Routing Context	M
		Source Reference Number	M
–	–	Sequence Number	O

3.1.2.2. Connection Acknowledge (COAK)

Table 4. Mapping of N-CONNECT Response Parameters

N-CONNECT Response Parameter		CORE SG->ASP Parameter	
Called Address	−	Destination Address	O
Calling Address	−	−	−
Resonding Address	U *1	Source Address	−
Expedited Data Selection	U	Protocol Class	M
Quality of Service	M	Protocol Class	M
		Message Priority	O
		Sequence Control	M
		SS7 Hop Count	O
		Credit	O
User Data	U	Data	O
Connection Identification	O	Routing Context	M
		Source Reference Number	M
		Destination Reference Number	M
Importance	O	Importance	O

Note 1: The parameter is associated with the SCCP service access point at which this primitive is issued if the responding address is absent.

Table 5. Mapping of N-CONNECT Confirm Parameters

N-CONNECT Confirm Parameter		CORE SG->ASP Parameter	
Called Address	−	Destination Address	O
Calling Address	−	−	O
Resonding Address	C *1	Source Address	−
Expedited Data Selection	−	−	−
Quality of Service	M(=)	Protocol Class	M
		Message Priority	O
		Sequence Control	M
		SS7 Hop Count	O
		Credit	O
User Data	C(=) *2	Data	O
Connection Identification	O	Routing Context	M
		Source Reference Number	M
		Destination Reference Number	M
Importance	O	Importance	O

Note 1: The parameter is associated with the SCCP service access point at which this primitive is issued if the responding address is absent.

Note 2: If present in the received SCCP message.

R. References

[**SUA09**] Loughney, J., Sidebottom, G., Mousseau, G., Lorusso, S., Coene, L., Verwimp, G., Keller, J., Gonzalez, F. E., Sully, W., Furniss, S. and Bidulock, B., *"SS7 SCCP-User Adaptation Layer (SUA),"* **<draft-ietf-sigtran-sua-09.txt>**, Internet Engineering Task Force - Signalling Transport Working Group (June 2001). *Work In Progress.*

[**Q.711**] ITU, *"Functional Description of Signalling Connection Control Part,"* **ITU-T Recommendation Q.711**, ITU-T Telecommunication Standardization Sector of ITU, Geneva (March 1993). *(Previously "CCITT Recommendation")*

[**X.213**] ITU, *"OSI − Network Service Definition,"* **ITU-T Recommendation X.213 (ISO/IEC 8072)**, ITU-T Telecommunication Standardization Sector of ITU, Geneva (November, 1995). *(Previously "CCITT Recommendation")*

S. Acknowledgements

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