TSG-RAN Meeting #10
Bangkok, Thailand, 6 - 8 December 2000

TSGRP#10(00)0611

Title: **Agreed CRs to TS 25.412**

Source: **TSG-RAN WG3**

Agenda item: **5.3.3**

Tdoc_Num	Specification	CR_Num	Revision_Nu	CR_Subject	CR_Categor	WG_Status	Cur_Ver_Nu	New_Ver_Nu
R3-002562	25.412	006		Editorial Modifications for 25.412	D	agreed	3.5.0	3.6.0
R3-003036	25.412	007		Corrections to SCTP and M3UA version numbers	F	agreed	3.5.0	3.6.0
R3-003241	25.412	008	1	SCTP Stack verifications for Iu Interface signalling	F	agreed	3.5.0	3.6.0

3GPP/SMG Meeting #16
Windsor, England, 16-20 October 2000

Document R3-002562
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.412	CR	006	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG RAN#10	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME		UTRAN / Radio	X	Core Network	X

Source: R-WG3 **Date:** October 6, 2000

Subject: Editorial Modifications for 25.412

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification	X		Release 99	X
				Release 00	

Reason for change: There are grammatical and spelling mistakes that are corrected.

Clauses affected: 5.1, 5.3

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

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5 RANAP Signalling Bearer

5.1 Introduction

This subclause specifies the Signalling Bearer protocol stack that supports the RANAP signalling protocol.

The following requirements on the Signalling Bearer can be stated:

- provide reliable transfer of control plane signalling messages in both connectionless mode and connection-oriented mode;
- provide separate independent connections for distinguishing transactions with individual UE's;
- supervise the 'UE connections' and provide connection status information to the Upper Layers for individual UE's;
- provide networking and routing functions;
- provide redundancy in the signalling network;
- provide load sharing.

5.3 Signalling Bearer for Packet Switched Domain

The protocol stacks for the PS Domain is shown in figure 2. The standard allows operators to choose one out of two standardised protocol to suites for transport of SCCP messages.

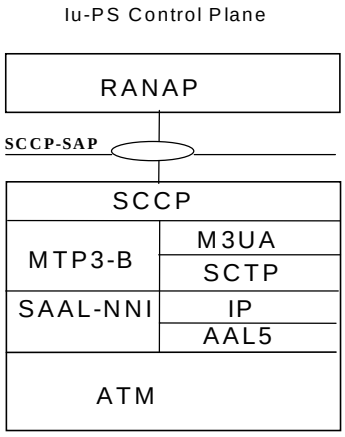

Figure 2: SAP between RANAP and its transport for the Iu –IP domain

Figure 2 shows, for the Iu IP domain, the point at which the service primitives are invoked. A single SAP is defined independently of the signalling bearer. The SAP provides the SCCP primitives. The figure is not intended to constrain the architecture.

1. **SCCP** [7] provides connectionless service, class 0, connection oriented service, class 2, separation of the connections mobile by mobile basis on the connection oriented link and establishment of a connection oriented link mobile by mobile basis.

2. **MTP3-B** [4] provides message routing, discrimination and distribution (for point-to-point link only), signalling link management load sharing and changeover/back between link within one link-set. The need for multiple link-sets is precluded.

3. **SAAL-NNI** [1] consists of the following sub-layers: - **SSCF-NNI** [3], - **SSCOP** [2] and – **AAL5** [6]. The SSCF maps the requirements of the layer above to the requirements of SSCOP. Also SAAL connection management, link status and remote processor status mechanisms are provided. SSCOP provides mechanisms for the establishment and release of connections and the reliable exchange of signalling information between signalling entities. Adapts the upper layer protocol to the requirements of the Lower ATM cells.

4. **ATM** [5].

5. **SCTP** [16] refers to the Stream Control Transmission Protocol [16] developed by the Sigtran working group of the IETF for the purpose of transporting various signalling protocols over IP networks. M3UA refers to the SCCP adaptation layer "SS7 MTP3 – User Adaptation Layer " [17] also developed by the Sigtran working group of the IETF.

6. **IP** [13] over ATM is defined in [14] and [15].

3GPP TSG-RAN3 Meeting #17
Chicago, USA, 20-24 November 2000

Tdoc R3-003036

CR-Form-v3

CHANGE REQUEST

⌘ **25.412** **CR** **007** ⌘ rev **-** ⌘ Current version: **3.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title:	⌘	Corrections to SCTP and M3UA Version Numbers
Source:	⌘	R-WG3
Work item code:	⌘	***Date:*** ⌘ 14 November 2000
Category:	⌘ **F**	***Release:*** ⌘ R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	Update to latest available version of SCTP and M3UA. SCTP is now an RFC instead of a working-draft document.
Summary of change:	⌘	Update the SCTP version reference from an IETF working draft to the new approved RFC for SCTP. Update the M3UA version reference to the latest working draft version.
Consequences if not approved:	⌘	Designs could be incorrect if they were completed by following the wrong version of the references.

Clauses affected:	⌘	2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ITU-T Recommendation Q.2100 (07/1994): "B-ISDN Signalling ATM Adaptation Layer (SAAL) - overview description".

[2] ITU-T Recommendation Q.2110 (07/1994): "B-ISDN ATM Adaptation Layer – Service Specific Connection Oriented Protocol (SSCOP)".

[3] ITU-T Recommendation Q.2140 (02/1995): "B-ISDN ATM adaptation layer – Service Specific Co-ordination Function for signalling at the Network Node Interface (SSCF AT NNI)".

[4] ITU-T Recommendation Q.2210 (07/1996): "Message transfer part level 3 functions and messages using the services of ITU-T Recommendation Q.2140".

[5] ITU-T Recommendation I.361 (11/1995): "B-ISDN ATM layer specification".

[6] ITU-T Recommendation I.363.5 (08/1996): "B-ISDN ATM Adaptation Layer Type 5".

[7] ITU-T Recommendation Q.711 (07/1996): "Functional description of the signalling connection control part".

[8] ITU-T Recommendation Q.712 (07/1996): "Definition and function of Signalling connection control part messages".

[9] ITU-T Recommendation Q.713 (07/1996): "Signalling connection control part formats and codes".

[10] ITU-T Recommendation Q.714 (07/1996): "Signalling connection control part procedures".

[11] ITU-T Recommendation Q.715 (07/1996): "Signalling connection control part user guide".

[12] ITU-T Recommendation Q.716 (03/1993): "Signalling Connection Control Part (SCCP) performance".

[13] IETF RFC 791 (09/1981): "Internet Protocol".

[14] IETF RFC 2684 (09/1999): "Multiprotocol Encapsulation over ATM Adaptation Layer 5".

[15] IETF RFC 2225 (04/1998): "Classical IP and ARP over ATM".

~~[16] R. Stewart et al, "Stream Control Transmission Protocol", draft-ieft-sigtran-sctp-v9.txt (IESG Last Call Version), IETF, 19 April 2000.~~

[16] IETF RFC 2960 (10/2000): “Stream Control Transmission Protocol”.

[17] G. Sidebottom et al, "SS7 MTP3 – User Adaptation Layer", draft-ietf-sigtran-m3ua-04~~2~~.txt (Work In Progress), IETF, ~~10 March~~ September 2000.

3GPP TSG-RAN WG3 Meeting #17
Chicago, US, 20-24 Nov 2000

Document R3-003241
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25.412	CR	008r1	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#10	for approval	X	Strategic		(for SMG use only)
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R-WG3

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME		UTRAN / Radio	X	Core Network	X

Source:	Siemens AG	**Date:**	2000-11-23

R-WG3	SCTP-stack verifications for Iu interface signalling transport

Work item:	

Category: *(only one category shall be marked with an X)*				**Release:**	
	F	Correction	X	Phase 2	
	A	Corresponds to a correction in an earlier release		Release 96	
	B	Addition of feature		Release 97	
	C	Functional modification of feature		Release 98	
	D	Editorial modification		Release 99	X
				Release 00	

Reason for change:

Redundancy and reliability requirements shall be stated for the IP signalling transport option via the SCTP as well. The respective protocol stacks shall operate under certain conditions.

Section 5.2 and 5.3 is split into two subsection. The first subsection contains text already contained in the sections, the second subsections contains information about protocol service usage.

It was clarified that it shall be possible to use pre-configured PVCs for the signalling transport.

If not approved, the requirements for IP signalling transport via SCTP would not be reliable.

Clauses affected:	2, 5.2, 5.3, new: 5.2.x, 5.2.y, 5.3.x, 5.3.y

Other specs affected:			
	Other 3G core specifications		→ List of CRs:
	Other GSM core specifications		→ List of CRs:
	MS test specifications		→ List of CRs:
	BSS test specifications		→ List of CRs:
	O&M specifications		→ List of CRs:

Other comments:	


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[17] G. Sidebottom et al, "SS7 MTP3 – User Adaptation Layer", draft-ietf-sigtran-m3ua-02.txt (Work In Progress), IETF, 10 March 2000.

[xx] 3GPP TS 25.410: "UTRAN Iu Interface: General Aspects and Principles".

5.2 Signalling Bearer for Circuit Switched Domain

5.2.x Protocol Stack for the CS Domain

The following figure 1 illustrates the protocol model having Broadband Signalling System No.7 as the signalling bearer for RANAP over the Iu interface that fulfils the requirements. Figure 1 shows, for the CS domain, the point at which the service primitives are invoked. The SAP provides the SCCP primitives.

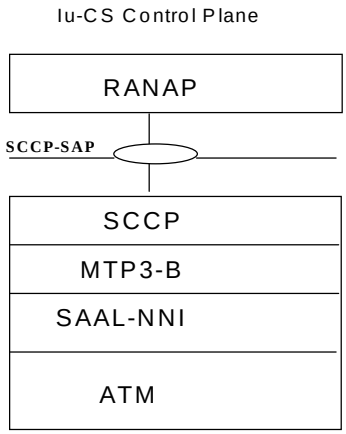

Figure 1: SAP between RANAP and its transport for Iu - CS Domain

1. **SCCP** [7] provides connectionless service, class 0, connection oriented service, class 2, separation of the connections mobile by mobile basis on the connection oriented link and establishment of a connection oriented link mobile by mobile basis.

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4. **ATM** [5].

5.2.y Protocol Services

5.2.y.a SCCP Services

SCCP shall be used as specified in [xx].

5.2.y.b MTP3-B Services

MTB3-B shall comply with [4].

5.2.y.c SAAL-NNI Services

It shall be possible to use SAAL-NNI connections pre-configured as PVCs for signalling transport on the Iu-Interface.

5.3 Signalling Bearer for Packet Switched Domain

5.3.x Protocol Stack for the PS Domain

The protocol stacks for the PS Domain is shown in figure 2. The standard allows operators to chose one out of two standardised protocol to suites for transport of SCCP messages.

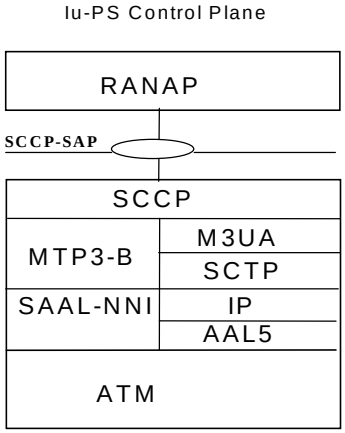

Figure 2: SAP between RANAP and its transport for the Iu –IP domain

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6. **IP** [13] over ATM is defined in [14] and [15].

5.3.y Protocol Services

5.2.y.a SCCP Services

SCCP shall be used as specified in [xx].

5.2.y.b MTP3-B Services

MTB3-B shall comply with [4].

5.2.y.c SAAL-NNI Services

It shall be possible to use SAAL-NNI connections pre-configured as PVCs for signalling transport on the Iu-Interface.

5.3.y.a M3UA Services

An RNC equipped with the M3UA stack option shall have client functionality. This enables the RNC to report to the SGSN when it is a newly introduced entity in the network.

5.3.y.b SCTP Services

The multi-homing service of SCTP shall be required at both ends of an SCTP-association to enable transport redundancy and reliability.

5.3.y.c AAL5 Services

It shall be possible to use AAL5 connections pre-configured as PVCs for signalling transport on the Iu-Interface.