

Sophia Antipolis, France, 23rd – 27th August 1999

Agenda Item: 13.1

Source: Ericsson

Title: Description of Usage of SCCP as Signalling Bearer for RNSAP

Document for: Decision

1 Introduction

A description of how SCCP is used in connection with RNSAP is needed. This contribution proposes some text to be included in [1] in the same way as the corresponding text for the Iu interface has been included in [2]. This contribution is to a large extent based on the description agreed in Helsinki for the Radio Network Control Plane of the Iu interface.

2 Use of the SCCP

2.1 General

The SCCP is used to support signalling messages between two RNCs. One user function of the SCCP, called Radio Network Subsystem Application Part (RNSAP), is defined. The RNSAP uses one signalling connection per DRNC and UE where a UE is having one or more active radio links for the transfer of layer 3 messages.

Both connectionless and connection-oriented procedures are used to support the RNSAP. TS 25.423 explains whether connection oriented or connectionless services should be used for a layer 3 procedure.

The following sections describe the use of SCCP connections for RNSAP transactions. Section 2.2 describes the connection establishment procedures. Section 2.3 describes the connection release procedures. Section 2.4 describes abnormal conditions.

2.2 SCCP connection establishment

A new SCCP connection is established when information related to the communication between a UE and the network has to be exchanged between two RNCs, and no SCCP connection exists between the two RNCs involved, for the concerned UE.

An SCCP connection is always established by the SRNC.

The above case is the only case currently identified for SCCP connection establishment. Other cases may emerge in the future.

2.2.1 Establishment procedure initiated from the SRNC

The SCCP signalling connection establishment is initiated, by the SRNC, when the SRNC needs to request dedicated resources, i.e. a DCH, from a DRNC.

Initiation

The SRNC sends the RADIO LINK SETUP REQUEST message to the DRNC. The RADIO LINK SETUP REQUEST message is included in the user data field of an SCCP Connection Request message.

Termination

- successful outcome

- The SCCP Connection Confirm message, which may optionally contain a connection oriented RNSAP

message in the user data field, is returned to the SRNC.

- unsuccessful outcome

- If the SCCP signalling connection establishment fails, an SCCP Connection REFusal message will be sent back to the SRNC. This message may optionally contain a connection oriented RNSAP message.

For more information on how the RNSAP procedure Radio Link Setup is handled, please see the procedure Radio Link Setup in TS 25.423.

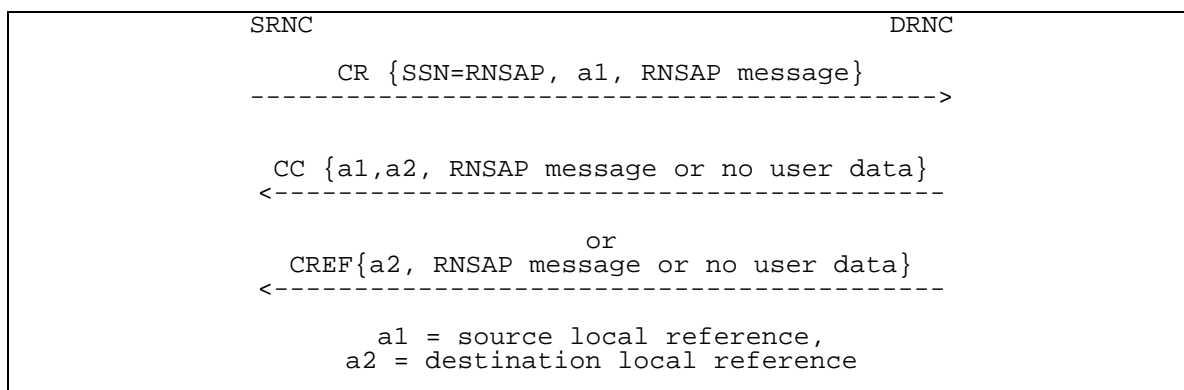


Figure 1
Setting-up of SCCP Signalling Connection

Note: Which addressing scheme for SCCP to be used over lu is TBD.

2.3 SCCP connection release

An SCCP connection is released when the SRNC realises that a given signalling connection is no longer required.

The SRNC sends an SCCP Released message.

2.4 General SCCP Abnormal Conditions

If a user-out-of-service information or signalling-point-inaccessible information is received by the RNSAP, no new attempt to establish SCCP connections towards the affected point code will be started until the corresponding user-in-service information or signalling-point-accessible information is received.

When a user-out-of-service information or signalling-point-inaccessible is received by an RNC, an optional timer may be started. When the timer expires, all the SCCP connections towards the affected point code will be released. When the user-in-service or signalling-point-accessible is received, the timer is stopped.

If for any reason an SCCP connection is released, the optional timer expires or a connection refusal is received while any of the RNSAP procedures are being performed or while a dedicated resource is still allocated, the following actions are taken:

At the SRNC:

- Any RNSAP procedure relating to that connection is abandoned.

At the DRNC:

- Any RNSAP procedure relating to that connection is abandoned.
- The DRNS resources (RL's) associated with the SCCP connection are released as soon as possible.

3 Proposal

It is proposed that the text in chapter 2 of this document is included in chapter 4. in Ref. 1.

4 References

- [1] UMTS 25.420, UTRAN Iur Interface: General Aspects and Principles
- [2] UMTS 25.410, UTRAN Iu Interface General Aspects and Principles