Agenda:

Source: Editor (Telecom Modus)

Title: S3.12: Iu Interface Signalling Transport

3GPP

3rd Generation Partnership Project (3GPP);
Technical Specification Group (TSG) RAN;
Iu Interface Signalling Transport

Reference
<Workitem> (<Shortfilename>.PDF)

Keywords
<keyword[, keyword]>

3GPP

Postal address

Office address

Internet

secretariat@3gpp.org
Individual copies of this deliverable
can be downloaded from
http://www.3gpp.org

Contents

Intellectual Property Rights

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project, Technical Specification Group RAN.

The contents of this TS may be subject to continuing work within the 3GPP and may change following formal TSG approval. Should the TSG modify the contents of this TS, it will be re-released with an identifying change of release date and an increase in version number as follows:

Version m.t.e

where:

    m indicates [major version number]

    x the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

    y the third digit is incremented when editorial only changes have been incorporated into the specification.

Introduction

1 Scope

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers.

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.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

  [1]   Merged "Description of Iu Interface", v.0.0.1

3 Definitions, symbols and abbreviations

3.1 Definitions

3.2 Symbols

3.3 Abbreviations

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

AAL	ATM Adaptation Layer
ATM	Asynchronous Transfer Mode
MTP3-B	Message Transfer Part
RANAP	Radio Access Network Application Part
SAAL-NNI	Signalling ATM Adaptation Layer – Network-to-Network Interface
SBC	Signalling Bearer Converter
SCCP	Signalling Connection Control Part

5 RANAP Signalling Bearer

[Editor's Note: This chapter specifies the signalling bearer protocol stack that supports the transport signalling protocol(s). Limitations in usage of options of the protocol should be described]

5.1 Introduction

[Editor´s note: This chapter should e.g. describe Radio Network Layer requirements on Transport Layer protocols.]

The following requirements on the SB 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.

5.2 Signalling Bearer

[Editor's note: TTC/ARIB has agreed to have SS7 as the signalling bearer for RANAP over Iu interface. This has not been agreed in ETSI. This is study item 1(see section 8).]

Error! Reference source not found., below, illustrates a protocol model having Signalling System No.7 as the signalling bearer for RANAP over the Iu interface that fulfils the requirements.
Other protocol stacks that may fulfil the requirements are FFS. The need for multiple link-sets is FFS.

Iu Control plane
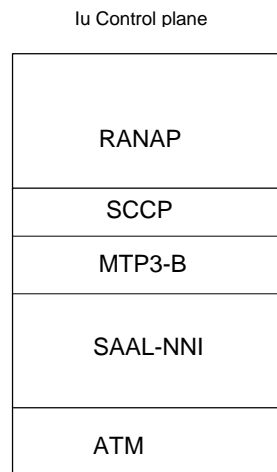
Figure 1. Iu Signalling bearer of RANAP

-0 **SCCP** (Q.711 – Q.719)(Signalling Connection Control Part): Provides connectionless service, class 0, connectionless service with guaranteed order, class 1, 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

-1 **MTP3-B** (Q.2210) (Message Transfer Part): 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.

-2 **SAAL-NNI** (Q.2100)(Signalling ATM Adaptation Layer – Network-to-Network Interface): Consists of the following sub-layers; - **SSCF** (Q.2140) Service Specific Convergence Function, - **SSCOP** (Q.2110) Service Specific Connection Oriented Protocol and – **AAL5** (I.363.5) ATM Adaptation Layer Type 5. 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.

-3 **ATM** (Asynchronous Transfer Mode). ATM is based on the ITU-T recommendation I.361."

5.3   Services Provided by the Signalling Bearer

When considering the requirements that the upper layers, i.e. RANAP, have on the SB, there are a number of services it has to provide and a number of functions to perform.
Table 1 gives an overview of the minimum set of services that the signalling bearer shall provide to the upper layers.

Table 1: **Network service primitives for the Signalling Bearer (SB)**

Primitives	
Generic name	**Specific name**
N-CONNECT	Request
	Indication
	Response
	Confirm
N-DATA	Request
	Indication
N-DISCONNECT	Request
	Indication
N-UNITDATA	Request
	Indication
N-STATUS	Indication

6   Example Sequences

7   Bibliography

History

Document history

V0.0.1	March 1999	First draft
V0.0.2	March 1999	Relevant sections from Merged "Description of Iu Interface" have been introduced.

Editor for 3GPP RAN S3.12 is:
Ms. Kiran Thakare
Telecom MODUS UK Ltd
Tel: +44-1372-804826
Fax: +44-1372-804804
Email: kiran.thakare@t-modus.co.uk

This document is written in Microsoft Word version 97