

TSG RAN Meeting #18
New Orleans, Louisiana, USA, 3 - 6 December, 2002

RP-020761

Title CRs (Rel-5 only) to 25.414
Source TSG RAN WG3
Agenda Item 7.3.5

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-022456	25.414	5.2.0	5.3.0	REL-5	049	-	F	Correction on RTP timestamp usage	TEI5
R3-022589	25.414	5.2.0	5.3.0	REL-5	051	1	F	Clarification on application of IP-ALCAP in Rel5	ETRAN- IPtrans

CHANGE REQUEST

⌘ 25.414 CR 049 ⌘ rev - ⌘ Current version: 5.2.0 ⌘

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

Proposed change affects: UICC apps ⌘ ME ⌘ Radio Access Network Core Network

Title:	⌘ Correction on RTP timestamp usage	
Source:	⌘ RAN WG3	
Work item code:	⌘ TEI5	Date: ⌘ 04/11/2002
Category:	⌘ F Use <u>one</u> of the following categories: F (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 <u>TR 21.900</u> .	Release: ⌘ Rel-5 Use <u>one</u> 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) Rel-6 (Release 6)

Reason for change:	⌘ Currently 25.414 states that for the RTP timestamp, a clock frequency of 16000 Hz or multiples of this value shall be used. The receiver is therefore not able to interpret the RTP timestamp without ambiguity.
<u>Impact Analysis:</u>	
Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release) because a receiving node implementing this change would interpret the timestamp based on a clock frequency of 16000Hz, even if the sending node hasn't implemented this change. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects only the function assigning the timestamp.	
Summary of change:	⌘ Allow 16000 Hz, but no multiples, for the RTP timestamp.
Consequences if not approved:	⌘ The receiver is not able to interpret the RTP timestamp without ambiguity.

Clauses affected:	⌘ 5.1.3				
Other specs	⌘ <table border="1" style="display: inline-table;"><tr><td>Y</td><td>N</td></tr><tr><td>X</td><td></td></tr></table> Other core specifications ⌘	Y	N	X	
Y	N				
X					

affected:	<input type="checkbox"/> <input checked="" type="checkbox"/> X	Test specifications
	<input type="checkbox"/> <input checked="" type="checkbox"/> X	O&M Specifications

Other comments: 86 This CR aligns TS 25.415 to TS 29.415, where a similar CR was already agreed.

5.1.3 IP Transport Option

5.1.3.1 General

In the IP transport option RTP over UDP over IP shall be supported as the transport for data streams on the Iu-CS interface. The data link layer is as specified in subclause 4.2.

The transport bearer is identified by the UDP port number and the IP address (source UDP port number, destination UDP port number, source IP address, destination IP address).

5.1.3.2 UDP/IP

The path protocol used shall be UDP [12].

An IP RNC/CN-node shall support IPv6. The support of IPv4 is optional.

NOTE: This does not preclude single implementation and use of IPv4.

IP dual stack support is recommended for the potential transition period from IPv4 to IPv6 in the transport network.

There may be one or several IP addresses in the RNC and in the CN. The packet processing function in the CN shall send downstream packets of a given RAB to the RNC IP address / UDP port (received in RANAP) associated to that particular RAB. The packet processing function in the RNC shall send upstream packets of a given RAB to the CN IP address / UDP port (received in RANAP) associated to that particular RAB. If there is no RNC IP address / UDP port yet associated to the packet processing function in the CN for a RAB not yet finally set-up, the packet processing function in the CN for that RAB shall extract the source IP address / UDP port from the first received IP packet to identify the peer IP/UDP entity. The packet processing function in the RNC shall use the same source IP address / UDP port as is sent to CN in RANAP.

The RNC/CN-node shall use two consecutive port numbers for the RTP bearer and for the optional RTCP connection that transport a single Iu UP connection. Two such consecutive port numbers are termed “port number block” in what follows. The first port number shall be even and shall be assigned to the RTP protocol. The next port number shall be assigned to the RTCP protocol. This port shall be reserved even if the optional RTCP protocol is not used.

Each RNC/CN-node shall administer the port numbers it intends to use for RTP/RTCP port number blocks.

5.1.3.3 RTP

RTP [22] shall be applied.

5.1.3.3.1 RTP Header

The RTP Header Fields shall be used as described in the following subclauses:

5.1.3.3.1.1 Version

RTP Version 2 shall be used.

5.1.3.3.1.2 Padding

Padding shall not be used.

5.1.3.3.1.3 Extension

The RTP Header shall not have an extension.

5.1.3.3.1.4 Contributing Source (CSRC) count

There are zero CSRCs.

5.1.3.3.1.5 Marker Bit

The marker bit is ignored.

5.1.3.3.1.6 Payload Type

A dynamic Payload Type [23] shall be used. Values in the Range between 96 and 127 shall be used. The value shall be ignored in the receiving entity.

5.1.3.3.1.7 Sequence Number

The sequence number shall be supplied by the source of an RTP PDU. The sink of an RTP PDU may ignore the sequence number or it may use it to obtain statistics about the link quality and / or to correct out-of-sequence delivery, e.g. by dropping out-of-sequence packets.

5.1.3.3.1.8 Timestamp

The timestamp shall be supplied by the source of an RTP PDU. A clock frequency of 16000 Hz ~~or multiples of this value~~ shall be used. The sink of an RTP PDU may ignore the timestamp or it may use it to obtain statistics about the link quality and / or to correct jitter.

5.1.3.3.1.9 Synchronisation Source (SSRC)

The source of an RTP PDU shall supply a SSRC. The sink of an RTP PDU may ignore the SSRC if it does not use RTCP.

5.1.3.3.1.10 CSRC list

This list is empty.

5.1.3.3.2 RTP Payload

A single Iu UP PDU, as described in [x3], shall be transported as RTP payload.

CHANGE REQUEST

25.414 CR 051 # rev 1 # Current version: 5.2.0

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

Proposed change affects: UICC apps # ME # Radio Access Network Core Network

Title:	# Clarification on application of IP-ALCAP in Rel5	
Source:	# RAN WG3	
Work item code:	# ETRAN-IPtrans	Date: # 11/11/2002
Category:	# F Use <u>one</u> of the following categories: F (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 .	Release: # Rel-5 Use <u>one</u> 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) Rel-6 (Release 6)

Reason for change:	# There is no IP-ALCAP in Rel5 IP based Iu-CS interface (IP transport option). For this reason the chapter 5.2 is modified accordingly.
Summary of change:	# Protocol stack for IP-ALCAP is moved to chapter 5.3 where the Interworking of IP to ATM is defined. New subclause 5.3.4 Signalling bearer for IP-ALCAP is introduced. Revision 1: The new 5.3.4 is incorporated in the existing 5.3.3. Impact analysis is changed to "no impact". <u>Impact Analysis:</u> Impact assessment towards the previous version of the specification (same release): This CR has no impact on the previous version of the specification (same release). This is for the reason that in the previous version the affected feature was marked as completely as "FFS".

Consequences if not approved:	# The Technical Specification remains ambiguous about the application of IP-ALCAP in Rel5 IP transport option
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Clauses affected:	# 5.2.1 5.3.3
	Y N

Other specs affected:	<input checked="" type="checkbox"/> Other core specifications <input checked="" type="checkbox"/> Test specifications <input checked="" type="checkbox"/> O&M Specifications	<input checked="" type="checkbox"/>
Other comments:	<input checked="" type="checkbox"/>	

5.2 Transport network control plane

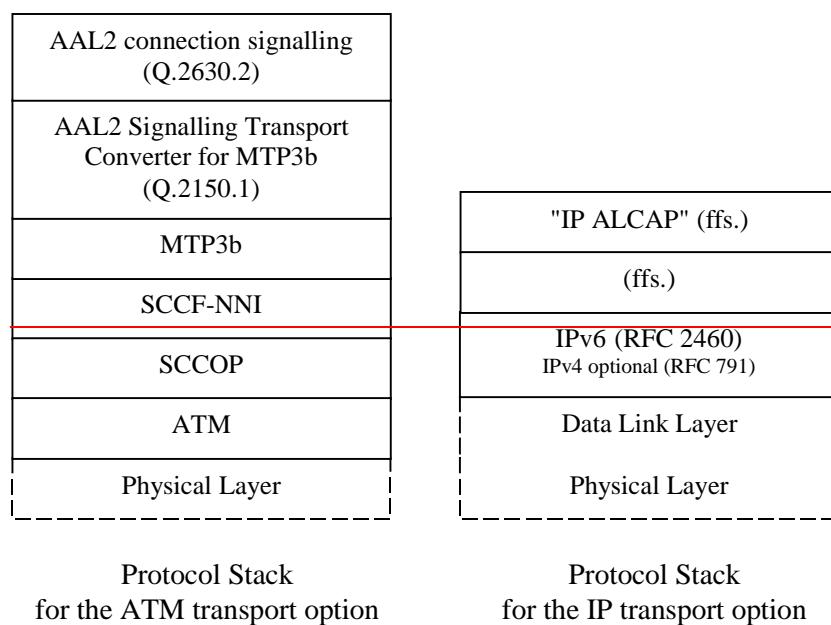
5.2.1 General

~~There are two options for the transport layer for transport signalling over Iu-CS:~~

- ~~1) ATM based Transport (ATM transport option)~~
- ~~2) IP based Transport (IP transport option)~~

The following figure shows the protocol stacks for transport signalling over Iu-CS in ATM based transport (ATM transport option), ~~of the two options~~. An ALCAP protocol is not required when both UTRAN and CN nodes are using the IP based transport (IP transport option).

The protocol stack for IP-ALCAP in IP to ATM interworking case is defined in chapter 5.3.3 of this Technical Specification.



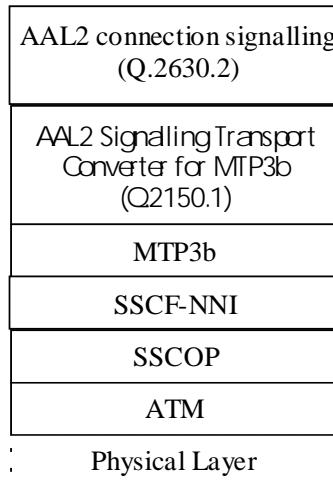


Figure 2. Signalling bearer for ALCAP on Iu-CS interface.

5.2.2 Transport Signalling for the ATM Transport Option

5.2.2.1 Signalling protocol (ALCAP)

5.2.2.1.1 AAL2 Signalling Protocol (Q.2630.2)

In the ATM transport option ITU-T Recommendation Q.2630.2 [21] shall be used for establishing AAL2 connections towards the circuit switched domain. ITU-T Recommendation Q.2630.2 [21] adds new optional capabilities to ITU-T Recommendation Q.2630.1 [10].

The AAL2 transport layer uses the embedded E.164 or other AESA variants of the NSAP addressing formats [11, 36]. Native E.164 addressing [5] shall not be used.

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH request primitive of ITU-T Recommendation Q.2630.2 [21].

If there is an AAL2 switching function in the transport network layer of the interface, the Link Characteristics parameter (LC) shall be included in the Establish Request message and in the Modification Request message of AAL2 signalling protocol.

5.2.2.2 Signalling transport converter

5.2.2.2.1 AAL2 MTP3B Signalling Transport Converter (Q.2150.1)

The AAL2 MTP3b Signalling Transport Converter shall be used according to ITU-T Recommendation Q.2150.1 [8].

5.2.2.3 MTP3b (Q.2210)

MTP3b shall be used according to ITU-T Recommendation Q.2210 [9 and 20].

5.2.2.4 SSCF-NNI (Q.2140)

SSCF-NNI shall be used according to ITU-T Recommendation Q.2140 [7].

5.2.2.5 SSCOP (Q.2110)

SSCOP shall be used according to ITU-T Recommendation Q.2110 [6].

5.2.2.6 ATM Adaptation Layer Type 5 (I.363.5)

AAL5 shall be used according to ITU-T Recommendation I.363.5 [3].

5.3 Interworking between ATM and IP Transport Options

5.3.1 Introduction

This clause specifies the interworking between IP and ATM transport options. An RNC/CN-node supporting IP transport option shall provide interworking to a CN-node/RNC supporting only ATM transport option.

5.3.2 Interworking Alternatives

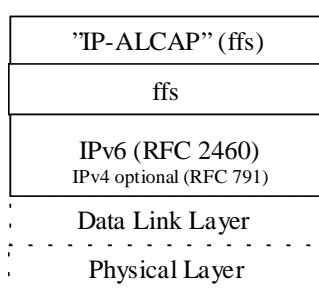
For interworking with a CN-node/RNC supporting only ATM transport option, the RNC/CN-node supporting IP transport option shall additionally support at least one of the following interworking mechanisms:

- 1) ATM&IP dual stack. An IP-ALCAP protocol is not required in this interworking solution.
- 2) Interworking Function (IWF) as a logical part of the RNC/CN-node supporting IP transport option. An IP-ALCAP protocol is not required in this interworking solution.
- 3) Interworking Unit (IWU) as a logically separate unit. An IP-ALCAP protocol shall be used in the interface between the RNC/CN-node supporting IP transport option and the Interworking Unit.

5.3.3 IP-ALCAP for the Interworking

In the third interworking alternative as introduced in subclause 5.3.2, [32] is used as the IP-ALCAP protocol between the RNC/CN-node supporting IP transport option and the Transport Network Layer Interworking Unit.

[The following figure shows the protocol stack for IP-ALCAP over Iu-CS in the third interworking alternative as introduced in subclause 5.3.2.](#)



[Figure 3. Signalling bearer for IP-ALCAP.](#)