Title: **Agreed CRs to TS 25.410**

Source: **TSG-RAN WG3**

Agenda item: **8.3.3/8.3.4/9.4.3**

RP Tdoc	R3 Tdoc	Spec	CR_Num	Rev	Release	CR_Subject	Cat	Cur_Ver	New_Ver	Workitem
RP-010593	R3-012097	25.410	009	6	Rel-4	Iu connection principles enhancement, CS domain	F	4.1.0	4.2.0	TrFO
RP-010593	R3-012092	25.410	021	2	Rel-4	Iu UP version selection	F	4.1.0	4.2.0	TrFO

CR-Form-v3

CHANGE REQUEST

⌘	**25.410**	CR	**009**	⌘	rev	**6**	⌘	Current version:	**4.1.0**	⌘

*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: ⌘	Iu connection principles enhancement, CS domain	
Source: ⌘	R-WG3	
Work item code: ⌘	TrFO	***Date:*** ⌘ 2001-08-09
Category: ⌘	**F**	***Release:*** ⌘ REL-4

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: ⌘	The TSG SA#11 approved version of 23.221 (Architecture requirements for Rel-4) includes the following statement: "*Alternatively, in the case of intra-PLMN handover, the GSM to UMTS inter-system handover or SRNS relocation between two MSC-areas may be executed as intra-MSC inter-system handover or SRNS relocation respectively. In such a case this will be performed by utilising a direct SCCP connection between the target RNC located in the target MSC-area and the MSC server already involved in the call.*" This option is currently not described in 25.410.
Summary of change: ⌘	Show the possibility for multiple connections between an RNC and CN domains.
Consequences if not approved: ⌘	There will be a misalignment between the architecture requirements in 23.221 and what is stated in 25.410.

Clauses affected: ⌘	4.1.1, 4.1.2
Other specs affected: ⌘	**X** Other core specifications ⌘ 25.413 v4.1.0 CR244 ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	

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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.

4 General Aspects

4.1 UTRAN Architecture

4.1.1 Iu Interface Architecture

The overall UMTS architecture and UTRAN architectures are described in [1]. This subclause specifies only the architecture of the Iu interface, and shall not constrain the network architecture of either Core or Radio Access Networks.

The I_u interface is specified at the boundary between the Core Network and UTRAN. Figure 4.1 depicts the logical division of the I_u interface. From the Iu perspective, the UTRAN access point is an RNC.
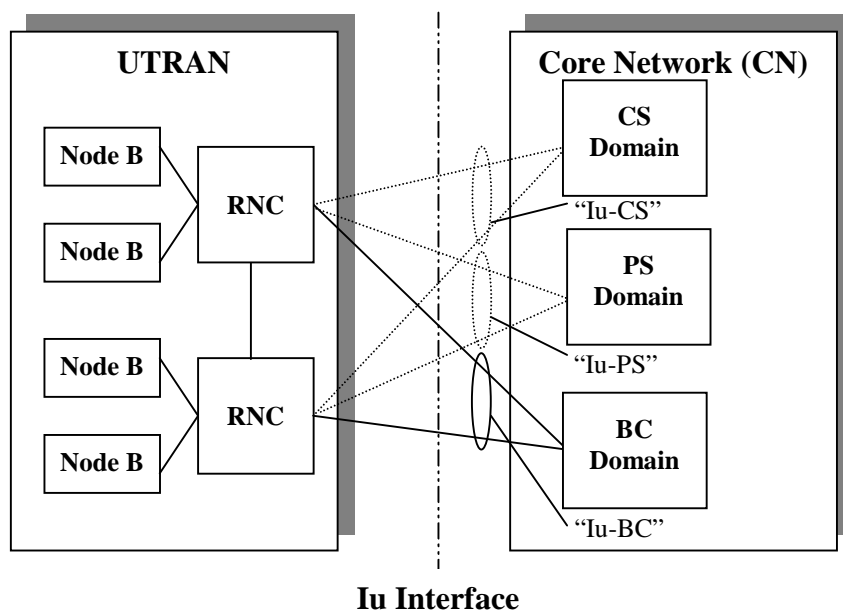
Iu Interface

Figure 4.1: I_u Interface Architecture

The Iu interface towards the PS-domain of the core network is called Iu-PS, and the Iu interface towards the CS-domain is called Iu-CS. The differences between Iu-CS and Iu-PS are treated elsewhere in this specification. The Iu interface to the Broadcast domain is called Iu-BC.

There shall not be more than ~~one Iu interface (Iu-CS) towards the CS domain and~~ one Iu interface (Iu-PS) towards the PS-domain from any one RNC. Each RNC shall not have more than one Iu interface (Iu-CS) towards its default CN node within the CS domain, but may also have further Iu interfaces (Iu-CS) towards other CN nodes within the CS domain. (See [6] for definition of Default CN node.) These further Iu interfaces (Iu-CS) shall only be used as a result of intra-MSC inter-system handover or SRNS relocation, in the case the anchor CN node directly connects to the target RNC. There may be multiple Iu interfaces (Iu-BC) from an RNC towards the Broadcast domain.

In the separated core network architecture, this means that there shall be separate signalling and user data connections towards the PS and CS domains – this applies in both transport and radio network layers.

In the combined architecture, there shall be separate connections in the user plane towards the PS and CS domains (in both transport and radio network layers). In the control plane, there shall be separate SCCP connections to the two logical domains.

In either architecture, there can be several RNCs within UTRAN and so UTRAN may have several I_u access points towards the Core Network. As a minimum, each Iu access point (in UTRAN or CN) shall independently fulfil the requirements of the relevant Iu specifications (25.41x series – see clause 7).

4.1.2 I$_u$ connection principles

The Iu interface has a hierarchical architecture where one higher layer entity controls several lower layer entities. The hierarchy for the CN - UTRAN signalling connection end points is described below:

- Each CN Access Point may be connected to one or more UTRAN Access Points.

- For the PS ~~and CS~~ domain~~s~~, each UTRAN Access Point shall not be connected to more than one CN Access Point per CN domain.

- For the <u>CS and</u> BC domain<u>s</u>, each UTRAN Access Point may be connected to one or more CN Access Points.

CR-Form-v3

CHANGE REQUEST

⌘   **25.410** CR **021**   ⌘ rev **2** ⌘   Current version: **4.1.0** ⌘

*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: ⌘	Iu UP version selection	
Source: ⌘	R-WG3	
Work item code: ⌘	TrFO	***Date:*** ⌘ 2001-08-22
Category: ⌘	**F**	***Release:*** ⌘ Rel-4

Use <u>one</u> 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 <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)*

Reason for change: ⌘	The CN shall, as a consequence of the OoB negotiation, request the appropriate user plane version(s) instead of (all) the user plane mode versions supported by the CN to ensure that the proper user plane version supporting a certain feature, (e.g.TrFO) will be initialised.
	It is clarified, that the CN not only selects the user plane mode, but also the set of user plane versions, that supports the features, that have been negotiated OoB.
	This CR is in line with approved CRs to 23.153 (CR024r1, N4-010683) and 29.232 (CR007r1, N4-010691), where the issue raised above was corrected.
Summary of change: ⌘	The I$_u$ U-plane frame protocol mode selection function is also responsible for selecting the set of user plane versions, that supports the features, that have been negotiated OoB.
Consequences if not approved: ⌘	If this CR is not approved, the RNC might initialise a user plane version that do not support features negotiated OoB.

Clauses affected: ⌘	5.5.1	
Other specs affected: ⌘	**X** Other core specifications ⌘	25.413 CR297 Rel-4, 25.415 CR062 Rel-4
	☐ Test specifications	
	☐ O&M Specifications	
Other comments: ⌘		

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5.5.1 I$_u$ U-plane frame protocol mode selection function

The I$_u$ UP in the Radio Network Layer provides modes of operation that can be activated on RAB basis. For a given RAB, the I$_u$ UP operates either in a Transparent or in Support mode. I$_u$ U-plane frame protocol mode is selected by the CN. A set of appropriate U-plan version(s) is indicated within RANAP. The final U-plane version is selected during the Iu UP initiation procedure among the indicated version(s).

This function is a CN function.