TSG-RAN Meeting #13 *TSGRP#13(01) 0577*
Beijing, China, 18 - 21, September, 2001

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-010577	R3-012551	25.410	019	4	R99	Intersystem Change clarifications	F	3.4.0	3.5.0	TEI
RP-010577	R3-012624	25.410	020	4	Rel-4	Intersystem Change clarifications	A	4.1.0	4.2.0	TEI

3GPP TSG-RAN3 Meeting #23 ***R3-012551***
Helsinki, Finland, 27th – 31st August 2001

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CHANGE REQUEST

⌘ **25.410** **CR** **019** ⌘ rev **4** ⌘ Current version: **3.4.0** ⌘

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

Title:	⌘	Intersystem Change clarifications
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	2001-08-29
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
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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 term 'inter-system handover' is only specified for cs services in stage 2 description. For system change between UMTS and GPRS the term 'intersystem change' is used. It is intended to align TS 25.410 with TS 23.009 (describing inter-system handover) and TS 23.060 (describing inter-system change). Additionally, - reference [15], which is redundant to [3] and has been removed (and replaced within the text). - the fact, that hard handover implies also the relocation of SRNS functionality is clarified.
Summary of change:	⌘	Alignment of term 'inter-system handover' and 'inter-system change' with TS 23.009 and TS 23.060.
Consequences if not approved:	⌘	TS 25.410 could be misinterpreted in a way, that I_U supports cs inter system handover procedure only. The changes are backwards compatible.

Clauses affected:	⌘	2, 4.4, 5.1, 5.2.1, 5.6.2.1, 5.6.2.3		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.410 CR020 Rel-4
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.
- For this Release 1999 document, references to 3G documents are for Release 1999 versions (version 3.x.y).

[1] UMTS 25.401: "UTRAN Overall Description".

[2] UMTS 23.930: "Iu Principles".

[3] UMTS 23.110: "UMTS Access Stratum; Services and Functions".

[4] UMTS 25.411: "UTRAN Iu Interface: Layer 1".

[5] UMTS 25.412: "UTRAN Iu Interface: Signalling Transport".

[6] UMTS 25.413: "UTRAN Iu Interface: RANAP Signalling".

[7] UMTS 25.414: "UTRAN Iu Interface: Data Transport & Transport Signalling".

[8] UMTS 25.415: "UTRAN Iu Interface: CN-RAN User Plane Protocol".

[9] ITU-T Recommendation Q.711 (7/96): "Functional description of the signalling connection control part".

[10] ITU-T Recommendation Q.712 (7/96): "Definition and function of signalling connection control part messages".

[11] ITU-T Recommendation Q.713 (7/96): "Signalling connection control part formats and codes".

[12] ITU-T Recommendation Q.714 (7/96): "Signalling connection control part procedures".

[13] UMTS 23.003: "Numbering, Addressing and Identification".

[14] UMTS 25.419: "UTRAN Iu Interface: Service Area Broadcast Protocol SABP".

~~[15] UMTS 23.110: "UMTS Access Stratum; Services and Functions".~~

4.4 I_u Interface Capabilities

The following capabilities are derived from the requirements described in [2].

The I_u interface supports:

- procedures to establish, maintain and release Radio Access Bearers;
- procedures to perform SRNS relocation, intra-system handover, inter-system handover and inter-system change ~~SRNS relocation~~;
- procedures to support the Cell Broadcast service;
- a set of general procedures, not related to a specific UE;
- the separation of each UE on the protocol level for user specific signalling management;
- the transfer of NAS signalling messages between UE and CN;
- location services by transferring requests from the CN to UTRAN, and location information from UTRAN to CN. The location information may comprise a geographical area identifier or global co-ordinates with uncertainty parameters;
- simultaneous access to multiple CN domains for a single UE;
- mechanisms for resource reservation for packet data streams.

5.1 General

This subclause defines the functional split between the core network and the UMTS radio access network. In addition, the possible interaction between the functions is defined. The functional split is shown in table 5.1.

Table 5.1: Iu interface functional split

Function	UTRAN	CN
RAB management functions:		
RAB establishment, modification and release	X	X
RAB characteristics mapping I_u transmission bearers	X	
RAB characteristics mapping Uu bearers	X	
RAB queuing, pre-emption and priority	X	X
Radio Resource Management functions:		
Radio Resource admission control	X	
Broadcast Information	X	X
I_u link Management functions:		
I_u signalling link management	X	X
ATM VC management	X	X
AAL2 establish and release	X	X
AAL5 management	X	X
GTP-U Tunnels management	X	X
TCP Management	X	X
Buffer Management	X	
I_u U-plane (RNL) Management:		
I_u U-plane frame protocol management		X
I_u U-plane frame protocol initialization	X	
Mobility management functions:		
Location information reporting	X	X
Handover and Relocation		
Inter RNC hard HO, Iur not used or not available	X	X
Serving RNS Relocation (intra/inter MSC)	X	X
Inter system hard HO (UMTS-GSM)	X	X
Inter system Change (UMTS-GSM)	X	X
Paging Triggering		X
Security Functions:		
Data confidentiality		
Radio interface ciphering	X	
Ciphering key management		X
User identity confidentiality	X	X
Data integrity		
Integrity checking	X	
Integrity key management		X
Service and Network Access functions:		
CN Signalling data	X	X
Data Volume Reporting	X	
UE Tracing	X	X
Location reporting	X	X
I_u Co-ordination functions:		
Paging co-ordination	X	X

5.2.1 RAB establishment, modification and release function

The RAB, Radio Access Bearer, is defined to be set-up between UE and CN. Depending on subscription, service, requested QoS etc. different types of RABs will be used. It is the CN that controls towards the UTRAN the establishment, modification or release of a RAB.

The RAB identity is allocated by CN by mapping the value for the NAS Binding information (from the actual protocol IE for the respective CN domain) to the RAB ID as specified in [3~~15~~]. The RAB identity is globally significant on both the radio bearer and on the Iu bearer for a given UE in a particular CN domain.

RAB establishment, modification and release is a CN initiated function.

RAB establishment, modification and release is a UTRAN executed function.

RAB release request is a UTRAN initiated function, triggered when UTRAN e.g. fails to keep the RAB established with the UE.

5.6.2 Handover and Relocation functions

5.6.2.1 Inter RNC hard HO function, Iur not used or not available

This functionality includes procedures for handover from one RNC to another RNC when Iur interface is not used or is not available, i.e. soft handover is not possible. The connection is switched in the CN, so both UTRAN and CN are involved. Both intra and inter CN entity cases are applicable. This functionality includes also the moving of the Serving RNS functionality from one RNC to an other RNC.

5.6.2.2 Serving RNS Relocation function

This functionality allows moving the Serving RNS functionality from one RNC to an other RNC, e.g. closer to where the UE has moved during the communication. The Serving RNS Relocation procedure may be applied when active cell management functionality has created a suitable situation for it. Both UTRAN and CN are involved.

5.6.2.3 Inter system Handover (e.g. UMTS-GSM~~-UMTS~~) function

Inter system handover is performed when a mobile hands over between cells belonging to different systems such as GSM and UMTS. ~~This may imply also a change of radio access type.~~ For intersystem handover between UMTS and GSM, the GSM procedures are used within the GSM network. Both UTRAN and CN are involved.

NOTE: The GSM BSSMAP procedures are outside the scope of this specification.

5.6.X Inter System Change (e.g. UMTS-GSM) function

Inter system change is performed when a GPRS attached mobile moves from cells belonging to different systems such as GSM and UMTS. For intersystem change between UMTS and GSM, the GPRS procedures are used within the GPRS network. Both UTRAN and CN are involved.

3GPP TSG-RAN3 Meeting #23 ***R3-012624***
Helsinki, Finland, 27th – 31st August 2001

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CHANGE REQUEST

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Paging Triggering		X
Security Functions:		
Data confidentiality		
Radio interface ciphering	X	
Ciphering key management		X
User identity confidentiality	X	X
Data integrity		
Integrity checking	X	
Integrity key management		X
Service and Network Access functions:		
CN Signalling data	X	X
Data Volume Reporting	X	
UE Tracing	X	X
Location reporting	X	X
I_u Co-ordination functions:		
Paging co-ordination	X	X

5.6.2 Handover and Relocation functions

5.6.2.1 Inter RNC hard HO function, Iur not used or not available

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