3GPP TSG-CN Meeting #22 **NP-030566**
10th - 12th December. Maui, Hawaii.

Source: TSG CN WG3

Title: CRs on Rel-5 Work Item TEI (CS Data).

Agenda item: 8.9

Document for: APPROVAL

Introduction:

This document contains **1** CR on **Rel-5 Work Item TEI (CS Data),** including the corresponding mirror CRs (as required).

These CR has been agreed by TSG CN WG3 and is forwarded to TSG CN Plenary meeting for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel
N3-030805	Terminology clarification (Wrong and confused terminology)	24.022	013	1	F	Rel-5

3GPP TSG-CN WG3 Meeting #30 **N3-030805**

Bangkok, Thailand. 27th - 31st October 2003.

CR-Form-v7

CHANGE REQUEST

⌘ **24.022** **CR** **013** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

*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:	⌘	Terminology Clarification to correct Wrong and confused terminology
Source:	⌘	TSG_CN WG3
Work item code:	⌘	TEI (CS Data)
Date:	⌘	30/10/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

UCse one 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.

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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	At present, TS 24.022 states that "RLP uses **one physical link** (single-link) or from 1 up to 4 (multi-link**) substreams on one or more physical links**. However, the RLP multi-link version is designed to be able to support up to 8 **physical links**". This seems to be wrong taking into account 3GPP specifications. Finally, after checking the CRs to 04.22 and TS 24.022 it seems that in the CR A023 on 'Introduction of EDGE', 1999-03-10 the following change was done, which results in a wrong text, which is not alligned with the rest of 3GPP specifications. This text is the following: "RLP uses one physical link (single-link) or from 1 up to 4 (multi-link) substreams on one or more physical links. However, the RLP multi-link version is designed to be able to support up to 8 physical links ".
Summary of change:	⌘	The terminology problem is fixed.
Consequences if not approved:	⌘	The specification remains wrong and not aligned with the rest of 3GPP specifications. This may lead to confusion with the risk of wrong implementations.

Clauses affected:	⌘	3			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	
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/specs/CR.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://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 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.

3 Introduction

Three versions of RLP are defined:

- RLP version 0: single-link basic version;
- RLP version 1: single-link extended version (e.g. extended by data compression);
- RLP version 2: multi-link version.

RLP uses one substream on one physical link (single-link) or from 1 up to 4 (multi-link) substreams on one or more physical links. However, the RLP multi-link version is designed to be able to support up to 8 substreams~~physical links~~.

In A/Gb and GERAN Iu mode:

- If in the call set-up signalling, either end indicates that it cannot support multi-link operation, neither end shall require usage of RLP-versions higher than 1. If the BC negotiation during call set-up results in a possibility for multi-link operation during the call, both ends shall require and accept RLP version 2 only;
- If the BC-IE sent by the UE in the SETUP or CALL CONFIRM message indicates "maximum number of traffic channels" = "1 TCH" and WAIUR ≤ 14,4 kbit/s and the BC-IE sent by the UE in the CALL CONFIRM message (MT case) or by the MSC in the CALL PROCEEDING message (MO case) indicates UIMI = "User initiated modification not allowed/required/applicable" or "User initiated modification up to 1 TCH/F allowed/may be requested", this shall be interpreted as if at least one end does not support multi-link operation, and neither end shall require an RLP version higher than 1.

In UTRAN Iu mode, either end is allowed to request the usage of any RLP-version.

RLP makes use of an underlying FEC (Forward Error Correction) mechanism. For RLP to perform adequately it is assumed that the basic radio channel together with FEC provides for a block error rate of less than 10 %, where a block consists of 240 bits or 576 bits (Further study on the BLER for 576-bit blocks is needed). Furthermore, it is assumed that in case of multi-link RLP the difference of the delay between all physical links is less than timer T4.

In A/Gb mode and in GERAN Iu mode, RLP frames are of a fixed size of 240 (TCH/F4,8 and TCH/F9,6 channel codings) or 576 bits (TCH/F14,4, TCH/F28,8 and TCH/F43,2 channel codings). In UTRAN Iu mode, the RLP frame size does not depend on the channel coding, only 576 bit frames are used.

RLP entities running only in an UTRAN Iu mode environment need only to support the 576 bit frame length. The REMAP function is not necessary. RLP entities running in both of the systems have to support the REMAP function. In a handover from UTRAN Iu mode to A/Gb mode or GERAN Iu mode the frame either stays 576 bits long or changes from 576 bits to 240 bits incurring a REMAP. In a handover from A/Gb mode or GERAN Iu mode to UTRAN Iu mode the frame either stays 576 bits long or changes from 240 bits to 576 bits incurring a REMAP.

In A/Gb mode, RLP frames are sent in strict alignment with the radio transmission. (For details, see 3GPP TS 44.021 ([2]). Whenever a frame is to be sent, the RLP entity has to provide the necessary protocol information to be contained in it.

Provision is made for Discontinuous Transmission (DTX).

RLP spans from the User Equipment (UE) to the interworking function (IWF), located at the nearest Mobile Switching Centre (MSC), or beyond. Depending on the exact location of the IWF, handover of the UE may result in link-reset or even total loss of the connection.

The UE shall initiate the RLP link. In addition the MSC/IWF may initiate the RLP link.

In the terminology of HDLC, RLP is used in a balanced configuration, employing asynchronous operation, i.e. either station has the right to set-up, reset, or disconnect a link at any time. Procedural means are provided for to deal with contentious situations, should they ever occur.

RLP is full-duplex in the sense that it allows for information to be transferred in both directions simultaneously.