TSG RAN WG1 Meeting #19 ***TSGR1#19(01)0282***
Las Vegas, USA, 27th February – 2nd March 2001

Agenda Item: 5
Source: Philips
Title: Clarification of initialisation procedure
Document for: Decision

Introduction

Some discussion on the RAN WG1 email reflector indicated that the current text in TS25.214 describing the reporting of "In-sync" during radio link establishment could be misunderstood. This arises from the fact that although it is stated when phase 1 ends, it is not clear when phase 1 begins. If it is interpreted that phase 1 does not begin until higher layers consider the radio link established, then the radio link establishment will fail.

The attached Release '99 CR provides clarification that Phase 1 of the reporting begins when higher layers initiate radio link establishment, in order to be consistent with TS25.331.

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CR-Form-v3

CHANGE REQUEST

✍	25.214	CR	156	✍	rev	-	✍	Current version:	3.5.0	✍

*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 ☐

Title: ✍	Clarification of initialisation procedure	
Source: ✍	Philips	
Work item code: ✍		***Date:*** ✍ 2001-02-23
Category: ✍	F	***Release:*** ✍ R99

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: ✍	To prevent future misunderstandings regarding when phase 1 of the synchronisation reporting begins, because some misinterpretations of the current text have arisen.
Summary of change: ✍	A clear statement is added stating when phase 1 begins and cross-referencing TS25.331.
Consequences if not approved: ✍	Further misunderstandings may occur.

Clauses affected: ✍	4.3.1.2		
Other specs affected: ✍	☐ Other core specifications ☐ Test specifications ☐ 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/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.

4.3 DPCCH/DPDCH synchronisation

4.3.1 Synchronisation primitives

4.3.1.1 General

For the dedicated channels, synchronisation primitives are used to indicate the synchronisation status of radio links, both in uplink and downlink. The definition of the primitives is given in the following subclauses.

4.3.1.2 Downlink synchronisation primitives

Layer 1 in the UE shall every radio frame check synchronisation status of the downlink dedicated channels. Synchronisation status is indicated to higher layers using the CPHY-Sync-IND and CPHY-Out-of-Sync-IND primitives.

The criteria for reporting synchronisation status are defined in two different phases.

The first phase starts when higher layers initiate physical dedicated channel establishment (as described in [5]) and lasts until 160 ms after the downlink dedicated channel is considered established by higher layers (physical channel establishment is defined in [5]). During this time out-of-sync shall not be reported and in-sync shall be reported using the CPHY-Sync-IND primitive if the following criterion is fulfilled:

- The UE estimates the DPCCH quality over the previous 40 ms period to be better than a threshold Q_{in}. This criterion shall be assumed not to be fulfilled before 40 ms of DPCCH quality measurements have been collected. Q_{in} is defined implicitly by the relevant tests in [7].

The second phase starts 160 ms after the downlink dedicated channel is considered established by higher layers. During this phase both out-of-sync and in-sync are reported as follows.

Out-of-sync shall be reported using the CPHY-Out-of-Sync-IND primitive if either of the following criteria are fulfilled:

- The UE estimates the DPCCH quality over the previous 160 ms period to be worse than a threshold Q_{out}. Q_{out} is defined implicitly by the relevant tests in [7].
- The 20 most recently received transport blocks with a CRC attached, as observed on all TrCHs using CRC, have been received with incorrect CRC. In addition, over the previous 160 ms, all transport blocks with a CRC attached have been received with incorrect CRC.

In-sync shall be reported using the CPHY-Sync-IND primitive if both of the following criteria are fulfilled:

- The UE estimates the DPCCH quality over the previous 160 ms period to be better than a threshold Q_{in}. Q_{in} is defined implicitly by the relevant tests in [7].
- At least one transport block with a CRC attached, as observed on all TrCHs using CRC, is received in a TTI ending in the current frame with correct CRC. If no transport blocks are received, or no transport block has a CRC attached, this criterion shall be assumed to be fulfilled.

How the primitives are used by higher layers is described in [5]. The above definitions may lead to radio frames where neither the in-sync nor the out-of-sync primitives are reported.

4.3.1.3 Uplink synchronisation primitives

Layer 1 in the Node B shall every radio frame check synchronisation status of all radio link sets. Synchronisation status is indicated to the RL Failure/Restored triggering function using either the CPHY-Sync-IND or CPHY-Out-of-Sync-IND primitive. Hence, only one synchronisation status indication shall be given per radio link set.

The exact criteria for indicating in-sync/out-of-sync is not subject to specification, but could e.g. be based on received DPCCH quality or CRC checks. One example would be to have the same criteria as for the downlink synchronisation status primitives.