3GPP TSG RAN Meeting #22
Maui, Hawaii, US, 9 - 12 December 2003

Tdoc RP-030699

CR-Form-v7

CHANGE REQUEST

⌘ **25.214** **CR** **331** ⌘**rev** **6** ⌘ Current version: **5.6.0** ⌘

*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 reconfiguration of HSDPA
Source:	⌘	Panasonic
Work item code:	⌘	HSDPA-Phys
Date:	⌘	Nov 21, 2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use 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: ⌘ Current reconfiguration procedure relating HSDPA is not clear.

Summary of change: ⌘ We propose to clarify that the UE should:
- neglect HS-SCCH and HS-DSCH transmissions which overlap a downlink physical layer parameter reconfiguration and Ack/Nack corresponding these subframes shall not be transmitted;
- stop transmitting CQI repetitions when a reconfiguration of *N_cqi_transmit* occurs;
- use DTX in CQI fields which overlap period when neither the uplink DPCCH nor the power control preamble are transmitted;
- use DTX in CQI fields if both future next Ack/Nack field and past next Ack/Nack field are not required to be transmitted.
- In the text that "UE does not support the case of k'<N_cqi_transmit", k'=0 is exception is clarified.
- Spelling mistake is corrected.

Consequences if not approved: ⌘ - The scheduler in Node B cannot know which downlink subframe is effective and which uplink subframe is not effective around activation time of the physical channel reconfiguration. Therefore, the reconfiguration procedure takes longer time because the scheduler will attempt not to use unclear subframes. UE is required to transmit multiple scrambling codes in reconfiguration phase in case of the reconfiguration of the scrambling code. UE and Node B complexity increases for the special case such as reconfiguration of parameters.

<Isolated Impact Analysis>
- This CR relates only HS-DPCCH functionality. No impact is seen to R99 and

	R4 in both network and UE. UE behaviour of the previous version is not clearly defined.

Clauses affected:	⌘	6A.1.1, 6A.1.2			
		Y	**N**		
Other specs affected:	⌘		**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.

6A .1.1 UE procedure for receiving HS-DSCH

If the UE did not detect control information intended for this UE on any of the HS-SCCHs in the HS-SCCH set in the immediately preceding subframe, the UE shall monitor all HS-SCCHs in the HS-SCCH set. If the UE did detect control information intended for this UE in the immediately preceding subframe, it is sufficient to only monitor the same HS-SCCH used in the immediately preceding subframe. When the UE monitors HS-SCCHs, the UE shall check if decoded 'channelization-code-set information' is lower than or equal to 'maximum number of HS-DSCH codes received' in its UE capability. If this condition is not fulfilled, the UE shall discard the information received on this HS-SCCH. The UE also shall check if 'Hybrid-ARQ process information' is included in the set configured by upper layers. If this condition is not fulfilled, the UE shall discard the information received on this HS-SCCH.

If a UE detects that one of the monitored HS-SCCHs carries control information intended for this UE, the UE shall start receiving the HS-PDSCHs indicated by this control information.

The transport block size information shall be derived from the signalled TFRI value as defined in [9].

After decoding the HS-PDSCH data, the UE shall transmit ~~a~~an hybrid ARQ ACK or NACK as determined by the MAC-hs based on the CRC check. The UE shall repeat the transmission of the ACK/NACK information over *N_acknack_transmit* consecutive HS-DPCCH sub-frames, in the slots allocated to the HARQ-ACK as defined in [1]. When *N_ acknack_transmit* is greater than one, the UE shall not attempt to receive nor decode transport blocks from the HS-PDSCH in HS-DSCH sub-frames $n + 1$ to $n + (N\_acknack\_transmit - 1)$ where n is the number of the last HS-DSCH sub-frame in which a transport block has been received. When any of the events for which the UE shall neglect the HS-SCCHs and HS-PDSCH transmissions occurs (as listed below), the UE shall not transmit any ACK/NACK repetitions in any ACK/NACK fields which overlap the first uplink DPCH frame in which the post-event parameters are applicable.

If control information is not detected on any of the HS-SCCHs in the HS-SCCH set, neither ACK, nor NACK, shall be transmitted in the corresponding HS-DPCCH subframe.

When any of the events listed below occur:

1. The UE shall use DTX in any ACK/NACK field corresponding to any HS-PDSCH transmission for which a part of the HS-PDSCH subframe or a part of the corresponding HS-SCCH subframe overlaps with the last associated DPCH frame in which the pre-event parameters are applicable.

2. The UE shall use DTX in any CQI fields where both the immediately following ACK/NACK field and the immediately preceding ACK/NACK field are required not to be transmitted by the rule in point 1 above.

The events for which the UE shall neglect the HS-SCCHs and HS-PDSCH transmissions are:

- Reconfiguration of H-RNTI

- MAC-hs reset

- Reconfiguration of number of HARQ process

- Reconfiguration of HARQ memory partitioning

- Reconfiguration of DPCH timing offset $\tau_{DPCH,n}$ for HS-DSCH serving cell

- Reconfiguration of compressed mode gap pattern

- Change of HS-DSCH serving cell

- Reconfiguration of scrambling code and channelisation code for HS-SCCH

- Reconfiguration of Ack-Nack repetition factor

- Reconfiguration of Ack power offset and Nack power offset

- Reconfiguration of Scrambling code of uplink DPCH

- Reconfiguration of IQ mapping of HS-DPCCH

- Reconfiguration of Tx-diversity mode for HS-DSCH serving cell

- Reconfiguration of closed loop timing adjustment mode for HS-DSCH serving cell

- Reconfiguration of phase reference

- Reconfiguration of scrambling code or channelisation code of S-CPICH in case of S-CPICH may be used as a phase reference

- Reconfiguration of default Power offset between HS-PDSCH and P-CPICH/S-CPICH

- Reconfiguration of CQI Feedback cycle

- Reconfiguration of CQI repetition factor

- Reconfiguration of CQI power offset

6A .1.2 UE procedure for reporting channel quality indication (CQI)

With the exception of the provisions of subclause 6A.3, the following shall apply:

1) The UE derives the CQI value as defined in 6A .2.

2) For k = 0, the UE shall not transmit the CQI value.
For k > 0, the UE shall transmit the CQI value in each subframe that starts $m\times256$ chips after the start of the associated uplink DPCCH frame with m fulfilling

$$\left(5\times CFN+\left\lceil m\times 256chip/7680chip\right\rceil\right)\bmod k'=0 \text{ with } k'=k/(2ms),$$

where CFN denotes the connection frame number for the associated DPCH and the set of five possible values of m is calculated as described in subclause 7.7 in [1].

3) The UE shall repeat the transmission of the CQI value derived in 1) over the next *(N_cqi_transmit – 1)* consecutive HS-DPCCH sub frames in the slots respectively allocated to the CQI as defined in [1]. UE does not support the case of $k' < N\_cqi\_transmit$ except for the case of k=0.

4) The UE shall not transmit the CQI in other subframes than those described in 2) and 3). In addition, the UE shall not transmit CQI if in any CQI field which wholly or partly overlaps a period when neither the uplink DPCCH nor uplink DPCCH power control preamble is transmitted.