TSG-RAN Meeting #22 **RP-030623**
Maui, USA, 09-12 December 2003

Title: **25.306 CRs to Rel-5**

Source: **TSG-RAN WG2**

Agenda item: **7.3.5**

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.306	082	-	Rel-5	Removal of reference combinations for HS-DSCH capabilities	F	5.6.0	5.7.0	R2-032265	HSDPA-L23
25.306	089	-	Rel-5	Correction to HSDPA capability	F	5.6.0	5.7.0	R2-032617	HSDPA-L23

3GPP TSG-RAN2 Meeting #38 ***R2-032265***
Sophia Antipolis, France, October 6 - 10, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.306** **CR** **082** ⌘ **rev** **-** ⌘ 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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Removal of reference combinations for HS-DSCH capabilities
Source:	⌘	RAN WG2
Work item code:	⌘	HSDPA-L23
Date:	⌘	06/10/2003
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:	⌘	HS-DSCH capabilities of the UE are expressed by the UE categories. In clause 5.2.2 the reference combinations for HS-DSCH capabilities (classes) are defined in the tables 5.2.2.2, 5.2.2.3 and 5.2.2.4, containing also a subset of the UE category parameters ('Minimum total RLC AM and MAC-hs buffer size', 'Maximum number of AM RLC entities'). The same RLC and MAC-hs parameters are also defined for the UE categories. In order to avoid redundancy and confusion it is not considered necessary to define the same RLC and MAC-hs parameters in two places. Therefore it is proposed to delete the redundent information from the tables 5.2.2.2, 5.2.2.3 and 5.2.2.4.
Summary of change:	⌘	The UE category parameters 'Minimum total RLC AM and MAC-hs buffer size' ('Total RLC AM and MAC-hs buffer size' for 1.28Mcps TDD) and 'Maximum number of AM RLC entities' are removed from the tables 5.2.2.2, 5.2.2.3 and 5.2.2.4.
Consequences if not approved:	⌘	The specification contains redundant information. Furthermore there is a risk for confusion and inconsistencies in the specification when changes are made.

Clauses affected:	⌘	5.2.2

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.

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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.

5.2.2 Combinations of UE Radio Access Parameters for DL

Table 5.2.2.1: UE radio access capability parameter combinations, DL parameters

Reference combination of UE Radio Access capability parameters in DL	32 kbps class	64 kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class
Transport channel parameters						
Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	1280	3840	3840	6400	10240	20480
Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640	640	640	640	640	640
Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	1280	3840	3840	6400	10240	20480(1) 10240(2) NOTE 5
Maximum number of simultaneous transport channels	8 NOTE 4	8 NOTE 4	8 NOTE 4	8 NOTE 4	8 NOTE 4	16 NOTE 4
Maximum number of simultaneous CCTrCH (FDD)	1 NOTE 3	2/1 NOTE 2 NOTE 3	2/1 NOTE 2 NOTE 3	2 NOTE 3	2 NOTE 3	2 NOTE 3
Maximum number of simultaneous CCTrCH (TDD)	2 NOTE 3	3 NOTE 3	3 NOTE 3	3 NOTE 3	4 NOTE 3	4 NOTE 3
Maximum total number of transport blocks received within TTIs that end at the same time	8	8	16	32	64	96
Maximum number of TFC	32	48	96	128	256	1024
Maximum number of TF	32	64	64	64	128	256
Support for turbo decoding	Yes	Yes	Yes	Yes	Yes	Yes
Physical channel parameters (FDD)						
Maximum number of DPCH/PDSCH codes to be simultaneously received	1	2/1 NOTE 2	2/1 NOTE 2	3	3	3
Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH).	1200	3600/2400 NOTE2	7200/4800 NOTE2	19200	28800	57600
Support for SF 512 for DPCH NOTE 6	No	No	No	No	No	No
Support of PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	Yes	Yes	Yes
Support of HS-PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1
Maximum number of simultaneous S-CCPCH radio links	1	1	1	1	1	1
Support of dedicated pilots for channel estimation	Yes NOTE 1 NOTE 7	Yes NOTE 1 NOTE 7	Yes NOTE 1 NOTE 7	Yes NOTE 1 NOTE 7	Yes NOTE 1 NOTE 7	Yes NOTE 1 NOTE 7
Support of dedicated pilots for channel estimation of HS-DSCH	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1
Physical channel parameters (TDD 3.84 Mcps)						
Maximum number of timeslots per frame	1	2	4	5	10	12
Maximum number of physical channels per frame	8	9	14	28	64	136
Minimum SF	16	16	16	1/16 NOTE 1	1/16 NOTE 1	1/16 NOTE 1
Support of PDSCH	Yes/No NOTE 1	Yes	Yes	Yes	Yes	Yes
Support of HS-PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1
Maximum number of physical channels per timeslot	8	9	9	9	9	13

Reference combination of UE Radio Access capability parameters in DL	32 kbps class	64 kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class
Physical channel parameters (TDD 1.28 Mcps)						
Maximum number of timeslots per subframe	1	2	3	4	6	6
Maximum number of physical channels per subframe	8	12	18	43	77	77
Minimum SF	16	16	16	1/16 NOTE 1	1/16 NOTE 1	1
Support of PDSCH	Yes/No NOTE 1	Yes	Yes	Yes	Yes	Yes
Support of HS-PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1
Maximum number of physical channels per timeslot	8	11	14	14	14	14
Support of 8PSK	No	No	No	No	No	Yes

NOTE 1: Options represent different combinations that should be supported with conformance tests.

NOTE 2: Options depend on the support of PDSCH. The highest value is required if PDSCH is supported.

NOTE 3: The given number does not contain the BCH CCTrCH of the current cell nor of the neighbour cells.

NOTE 4: The given number does not contain the BCH of the neighbour cell.

NOTE 5: (1) For FDD and 3.84 Mcps TDD (2) For 1.28 Mcps TDD.

NOTE 6: This UE capability does not relate to the support of CPCH in the uplink for which SF 512 is needed

NOTE 7: A UE conforming to this release of the specification shall set the support of channel estimation based on dedicated pilot bits to TRUE.

The reference combinations for HS-DSCH capabilities are shown in tables 5.2.2.2, 5.2.2.3 and 5.2.2.4. These tables are subject to further discussions in TSG-RAN WG1 and TSG-RAN WG2.

Table 5.2.2.2: FDD UE radio access capability parameter combinations, DL HS-DSCH parameters

Reference combination	1.2 Mbps class	3.6 Mbps class	7 Mbps class	10 Mbps class
~~**RLC and MAC-hs parameters**~~				
~~Minimum total RLC AM and MAC-hs buffer size (kbytes)~~	~~50~~	~~50~~	~~100~~	~~150~~
~~Maximum number of AM RLC entities~~	~~6~~	~~6~~	~~8~~	~~8~~
~~**PHY parameters**~~				
FDD HS-DSCH category	Category 1	Category 5	Category 7	Category 9

Table 5.2.2.3: 1.28 Mcps TDD UE radio access capability parameter combinations, DL HS-DSCH parameters

Reference combination	1.4 Mbps class	2.0 Mbps class	2.8 Mbps class
~~**RLC and MAC-HS parameters**~~			
~~Total RLC AM and MAC-hs buffer size (kbytes)~~	~~50~~	~~50~~	~~100~~
~~Maximum number of AM RLC entities~~	~~6~~	~~6~~	~~6~~
~~**PHY parameters**~~			
1.28 Mcps TDD HS-DSCH Category	Category 1	Category 7	Category 13

Table 5.2.2.4: 3.84 Mcps TDD UE radio access capability parameter combinations, DL HS-DSCH parameters

Reference combination	1.2 Mbps class	2.4 Mbps class	3.6 Mbps class	7.3 Mbps class	10.2 Mbps class
~~**RLC and MAC-hs parameters**~~					
~~Minimal total RLC AM and MAC-hs buffer size (kbytes)~~	~~50~~	~~50~~	~~100~~	~~150~~	~~200~~
~~Maximum number of AM RLC entities~~	~~6~~	~~6~~	~~6~~	~~8~~	~~8~~
~~**PHY parameters**~~					
3.84Mcps TDD HS-DSCH category	Category 1	Category 3	Category 5	Category 8	Category 9

3GPP TSG-RAN WG2 Meeting #39
San Diego, USA, 17th-21st November, 2003

Tdoc ⌘ R2-032617

CR-Form-v7

CHANGE REQUEST

⌘ **25.306** **CR** **089** ⌘ **rev** **-** ⌘ Current version: **5.6.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to HSDPA capability
Source:	⌘	RAN WG2
Work item code:	⌘	HSDPA-L23
Date:	⌘	Nov 2003
Category:	⌘	**F**
Release:	⌘	Rel-5

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R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	In section 4.3, It is not clear what *j* means in the equation regarding to buffer configuration. In section 4.5.3, UE behaviour in case the configuration of memory partitioning exceeds the UE capabilities is not sufficiently specified.
Summary of change:	⌘	It is clarified that *j* means the MAC-hs reordering "entity number". It is clarified how UTRAN controls the UE capability "Total number of soft channel bits in HS-DSCH", so that the sum of all Process Memory size does not exceeds the UE capability. **Isolated Impact Analysis** This change corrects Process Memory Configuration for HARQ. It would not affect implementations behaving like indicated in this CR.It would affect implementations supporting the corrected functionality otherwise.
Consequences if not approved:	⌘	HSDPA configuration may fail without notice in UTRAN.

Clauses affected:	⌘	4.3, 4.5.3			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘

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4.3 RLC and MAC-hs parameters

Total RLC AM and MAC-hs buffer size

When HS-DSCH is not configured this is defined as the maximum total buffer size across all RLC AM entities supported by the UE. When HS-DSCH is configured this is defined as the maximum total buffer size across all MAC-hs reordering entities and all RLC AM entities supported by the UE. UTRAN controls that the UE capability can be fulfilled through the following parameters:

1. The number of RLC AM entities configured (no explicit RRC parameter);
2. UL PDU size;
3. DL PDU size;
4. Transmission window size (in number of PDUs);
5. Receiving window size (in number of PDUs);
6. MAC-hs reordering buffer size.

The following criterion must be fulfilled in the configuration at all times:

$$\sum_{i=1}^{\#RLC\_AM\_entities} Transmission\_window\_size_i \bullet (UL\_AMD\_PDU\_size_i - AMD\_Header\_size) + \sum_{i=1}^{\#RLC\_AM\_entities} Receiving\_window\_size_i \bullet (DL\_AMD\_PDU\_size_i - AMD\_Header\_size) + \sum_{j=1}^{\#MAC-hs\_reordering\_entities} MAC-hs\_reordering\_entity\_buffer\_size_j \leq Total\_buffer\_size$$

where *i* is the RLC "entity number" and *j* is the MAC-hs reordering "entity number".

Maximum number of AM entities

This is defined as the maximum number of RLC AM entities supported by the UE.

Maximum RLC AM Window Size

This is defined as the maximum transmission and receiving window size of RLC AM entities supported by the UE.

4.5.3 FDD Physical channel parameters in downlink

Maximum number of DPCH/PDSCH codes to be simultaneously received

Defines the number of codes the UE is capable of receiving in parallel. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability. The capability does not include codes used for S-CCPCH.

Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)

Defines the number of physical channel bits the UE is capable of receiving. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability.

The number of DPCH channel bits indicates the capability of the UE when operating in non-compressed mode.

The parameter also indicates the capability of the UE to support compressed mode by spreading factor reduction as follows. The UE shall:

- for parameter values up to and including 9600 bits:
  - support compressed mode by spreading factor reduction when operating at any value up to the reported capability.
- for parameter values greater than 9600 bits:
  - support compressed mode by spreading factor reduction when operating at any value up to the greater of:
    - half the reported capability; or
    - 9600bits.

NOTE: Compressed mode by spreading factor reduction is not applicable when operating at spreading factor 4.

Support for SF 512

Defines whether the UE supports spreading factor 512 in downlink or not.

Support of PDSCH

Defines whether the UE supports PDSCH or not.

Support of HS-PDSCH

Defines whether the UE supports HS-PDSCH or not.

Simultaneous reception of SCCPCH and DPCH

Defines whether the UE supports simultaneous reception of SCCPCH and DPCH or not.

NOTE: Simultaneous reception of SCCPCH and DPCH, i.e. simultaneous reception of FACH and DCH is required for e.g. DRAC procedure

Simultaneous reception of SCCPCH, DPCH and PDSCH

Defines whether the UE supports simultaneous reception of SCCPCH, DPCH and PDSCH or not. The PDSCH part of this capability is only relevant if the UE supports PDSCH, as covered by the capability "Support of PDSCH".

NOTE: Simultaneous reception of SCCPCH, DPCH and PDSCH, i.e. simultaneous reception of FACH, DCH and DSCH is required for e.g. simultaneous use of DSCH and the DRAC procedure.

Maximum number of simultaneous S-CCPCH radio links

Defines the maximum number of radio links on which the UE is capable of receiving S-CCPCH simultaneously.

Support of dedicated pilots for channel estimation

Defines whether the UE supports dedicated pilots for channel estimation or not.

Support of dedicated pilots for channel estimation of HS-DSCH

Defines whether the UE supports dedicated pilots for channel estimation of HS-PDSCH and HS-SCCH or not.

Maximum number of HS-DSCH codes received

Defines the maximum number of HS-DSCH codes the UE is capable of receiving.

Total number of soft channel bits in HS-DSCH

Defines the maximum number of soft channel bits over all HARQ processes. When explicit signalling is used, UTRAN configure Process Memory Size for each HARQ process so that the following criterion must be fulfilled in the configuration:

Total number of soft channel bits in HS-DSCH ≥ sum of Process Memory Size of all the HARQ processes.

Minimum inter-TTI interval in HS-DSCH

Defines the distance from the beginning of a TTI to the beginning of the next TTI that can be assigned to the UE.