

**TSG-RAN Meeting #12
Stockholm, Sweden, 12 - 15 June 2001**

RP-010307

Title: Agreed CRs (Release '99 and Rel-4 category A) to TS 25.306

Source: TSG-RAN WG2

Agenda item: 8.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-011412	agreed	25.306	012	1	R99	Clarification on the number of CCTrCHs to be received simultaneously by the UE	F	3.1.0	3.2.0
R2-011413	agreed	25.306	013		Rel-4	Clarification on the number of CCTrCHs to be received simultaneously by the UE	A	4.0.0	4.1.0

CHANGE REQUEST

⌘ **25.306 CR 012** ⌘ rev **r1** ⌘ Current version: **3.1.0** ⌘

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 Core Network

Title:	⌘ Clarification on the number of CCTrCHs to be received simultaneously by the UE		
Source:	⌘ TSG-RAN-WG2		
Work item code:	⌘ TEI	Date:	⌘ 25.05.2001
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> 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 <u>one</u> 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:	⌘ TS 25.302 v3.8.0 contains the physical channel combinations DPCH+one or more PDSCH + pCCPCH, where the pCCPCH is required (in FDD mode) to be able to read the SFN of a neighbouring cell. Hence the values for the “maximum number of simultaneous CCTrCHs (for FDD)” in the table 5.2.2.1 do not reflect this. <u>The same clarification is required for TDD mode.</u>
Summary of change:	⌘ Values for the “maximum number of simultaneous CCTrCHs (for FDD)” in the table 5.2.2.1 are added by a note stating that the numbers do not contain the CCTrCH of type BCH, which is required to read the SFN of a neighbouring cell in FDD. Backwards compatibility is given, since an implicit assumption is clarified.
Consequences if not approved:	⌘ Incorrect description.

Clauses affected:	⌘ 4.5.1, 5.2.2	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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.

4.5.1 Transport channel parameters in downlink

Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant

NOTE: "Being received" refers to all bits in the active TFC within the TFCS over all simultaneous transport channels received by the UE. "Arbitrary time instant" means that the time instant corresponding to the highest sum of number of bits is relevant. This note also applies to similar parameter definitions below

This parameter is defined as:

$$\sum_i(N_i)$$

where N_i is defined as the number of bits in transport block # i , and the sum is over all transport blocks being received at an arbitrary time instant. All transport blocks that are to be simultaneously received by the UE on DCH, FACH, PCH and DSCH transport channels are included in the parameter.

NOTE: A UE does not need to support a TFC within the TFCS for which the sum of *Number of Transport Blocks* * *Transport Block size* over all simultaneous transport channels is larger than what the UE capability indicates.

This UE capability also limits the maximum number of bits before de-rate-matching as follows: The maximum number of bits before de-rate matching being received at an arbitrary time instant (DPCH, PDSCH, S-CCPCH) shall be less or equal to 6.6 times the Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant.

Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant.

This parameter is defined similar to the parameter above, but the sum includes only transport blocks that are to be convolutionally coded.

Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant.

This parameter is defined similar to the parameter above, but the sum includes only transport blocks that are to be turbo coded.

Maximum number of simultaneous transport channels

This is defined as the maximum number of downlink Transport Channels that the UE is capable to process simultaneously, not taking into account the rate of each Transport Channel.

NOTE: The number of simultaneous transport channels affects how the total memory space and processing capacity can be shared among the transport channels. A UE does not need to support more simultaneous transport channels than the UE capability allows for.

Maximum number of simultaneous CCTrCH

This is defined as the maximum number of downlink CCTrCH that the UE is capable to process simultaneously. CCTrCH should be interpreted as CCTrCH of any type, i.e. consisting of DCH, FACH or DSCH.

Maximum total number of transport blocks received within TTIs that end within the same 10 ms interval

All transport blocks that are to be simultaneously received by the UE on DCH, FACH, PCH and DSCH transport channels are included in the parameter.

NOTE: Relates to processing requirements for CRC in downlink. A UE does not need to support a TFC within the TFCS for which the sum of *Number of Transport Blocks* is larger than what the UE capability indicates. In the case of several CCTrCHs, the combination of the TFCs within the respective TFCSs for simultaneous TTIs at an arbitrary time instant shall not exceed this parameter.

Maximum number of TFC in the TFCS

Defines the maximum number of transport format combinations in a downlink transport format combination set the UE can store.

Maximum number of TF

The maximum total number of downlink transport formats the UE can store, where all transport formats for all downlink transport channels are counted.

Support for turbo decoding

Defines whether turbo decoding is supported or not.

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	32kbps class	64kbps class	128kbps class	384kbps class	768kbps class	2048kbps class
Transport channel parameters						
Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640	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	NA	3840	3840	6400	10240	20480
Maximum number of simultaneous transport channels	8	8	8	8	8	16
Maximum number of simultaneous CCTrCH (FDD)	1 NOTE3	2/1 NOTE 2 NOTE3	2/1 NOTE 2 NOTE3	2/1 NOTE 2 NOTE3	2 NOTE3	2 NOTE3
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 in the TFCS	32	48	96	128	256	1024
Maximum number of TF	32	64	64	64	128	256
Support for turbo decoding	No	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	No	No	No	No	No	No
Support of PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	No/Yes NOTE 1	Yes	Yes
Maximum number of simultaneous S-CCPCH radio links	1	1	1	1	1	1
Physical channel parameters (TDD)						
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
Maximum number of physical channels per timeslot	8	9	9	9	9	13

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.

CHANGE REQUEST

⌘ **25.306 CR 013** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

Title:	⌘ Clarification on the number of CCTrCHs to be received simultaneously by the UE		
Source:	⌘ TSG-RAN-WG2		
Work item code:	⌘ TEI	Date:	⌘ 25.05.2001
Category:	⌘ A	Release:	⌘ REL-4
	Use <u>one</u> 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)		Use <u>one</u> 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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

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Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant.

This parameter is defined similar to the parameter above, but the sum includes only transport blocks that are to be convolutionally coded.

Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant.

This parameter is defined similar to the parameter above, but the sum includes only transport blocks that are to be turbo coded.

Maximum number of simultaneous transport channels

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Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	NA	3840	3840	6400	10240	20480
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Support for turbo decoding	No	Yes	Yes	Yes	Yes	Yes
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Support for SF 512	No	No	No	No	No	No
Support of PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	No/Yes NOTE 1	Yes	Yes
Maximum number of simultaneous S-CCPCH radio links	1	1	1	1	1	1
Physical channel parameters (TDD)						
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
Maximum number of physical channels per timeslot	8	9	9	9	9	13

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.

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