

TSG-RAN Meeting #27
Tokyo, Japan, 09-11 March 2005

RP-050064
Agenda item 8.3.3

Source: TSG-RAN WG2

Title: CR to 25.993 (R'99 affected, Rel-6 version) on addition of asymmetric RAB combinations with voice

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.993	036	-	Rel-6	Addition of asymmetric RAB-combinations with voice	F	6.8.0	6.9.0	R2-050589	TE16

CHANGE REQUEST

25.993 CR 036 # rev - # Current version: 6.8.0

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:	# Addition of asymmetric RAB-combinations with voice		
Source:	# RAN WG2		
Work item code:	# TEI6	Date:	# 14/02/2005
Category:	# F	Release:	# Rel-6
	Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (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) Rel-7 (Release 7)

Reason for change:	# Asymmetric RABs are needed for applications that require higher uplink rates, these need to be supported in parallel to CS voice.
Summary of change:	# Add 4 additional RAB combos: 1. Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kb/s Signalling Radio Bearers for DCCH 2. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 64kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH 3. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH 4. Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 384kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH. # The R'99 is affected.
Consequences if not approved:	# Combinations with high UL rates will not be considered by terminal vendors and may curtail services that operators wish to support.

Clauses affected:	# 5, 6, 7.1						
Other specs Affected:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	#	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table> Test specifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	#			
<input checked="" type="checkbox"/>	<input type="checkbox"/>						

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.

[...]

5 List of RABs and SRBs

The following table provides examples of Radio Access Bearers (RABs) which can be realised by Radio Bearers (RBs) as defined in clauses 7 and 8. The data rate given for each RAB is the maximum data rate that can be supported by that RAB.

The mapping between Radio Access Bearer and Radio Bearer is internal to UTRAN Radio Resource Management and not standardised. Based on certain Radio Access Bearer attributes, resource utilisation or radio conditions, different Radio Bearers can fulfill the Radio Access Bearer requirements.

Table 5.1: Examples of Radio Access Bearers (RABs).

#	Traffic class [2]	SSD	Max. rate, kbps	CS/PS
1	Conversational	Speech	UL:12.2 DL:12.2	CS
2	Conversational	Speech	UL:10.2 DL:10.2	CS
3	Conversational	Speech	UL:7.95 DL:7.95	CS
4	Conversational	Speech	UL:7.4 DL:7.4	CS
5	Conversational	Speech	UL:6.7 DL:6.7	CS
6	Conversational	Speech	UL:5.9 DL:5.9	CS
7	Conversational	Speech	UL:5.15 DL:5.15	CS
8	Conversational	Speech	UL:4.75 DL:4.75	CS
9	Conversational	Unknown	UL:28.8 DL:28.8	CS
10	Conversational	Unknown	UL:64 DL:64	CS
11	Conversational	Unknown	UL:32 DL:32	CS
12	Conversational	Unknown	UL:8 DL:8	PS
13	Conversational	Unknown	UL:16 DL:16	PS
14	Streaming	Unknown	UL:14.4 DL:14.4	CS
15	Streaming	Unknown	UL:28.8 DL:28.8	CS
16	Streaming	Unknown	UL:57.6 DL:57.6	CS
17	Streaming	Unknown	UL:0 DL:64	CS
18	Streaming	Unknown	UL:16 DL:64	PS
19	Streaming	Unknown	UL:64 DL:0	CS
20	Streaming	Unknown	UL:8 DL:16	PS
21	Streaming	Unknown	UL:8 DL:32	PS
22	Streaming	Unknown	UL:16 DL:64	PS
23	Streaming	Unknown	UL:32 DL:256	PS
24	Void			
25	Streaming	Unknown	UL:16 DL:128	PS
26	Void			
27	Void			
28	Interactive or Background	N/A	UL:32 DL:8	PS
29	Interactive or Background	N/A	UL:8 DL:8	PS
30	Interactive or Background	N/A	UL:16 DL:16	PS
31	Interactive or Background	N/A	UL:32 DL:32	PS
32	Interactive or Background	N/A	UL:64 DL:8	PS
33	Interactive or Background	N/A	UL:32 DL:64	PS
34	Interactive or Background	N/A	UL:64 DL:64	PS
35	Interactive or Background	N/A	UL:64 DL:128	PS
36	Interactive or Background	N/A	UL:128 DL:128	PS
37	Interactive or Background	N/A	UL:64 DL:384	PS
38	Interactive or Background	N/A	UL:128 DL:384	PS
39	Interactive or Background	N/A	UL:384 DL:384	PS
40	Interactive or Background	N/A	UL:64 DL:2048	PS
41	Interactive or Background	N/A	UL:128 DL:2048	PS
42	Interactive or Background	N/A	UL:384 DL:2048	PS
43	Interactive or Background	N/A	UL:64 DL:256	PS
44	Interactive or Background	N/A	UL:0 DL:32	PS
45	Interactive or Background	N/A	UL:32 DL:0	PS
46	Interactive or Background	N/A	UL:0 DL:0	PS
47	Interactive or Background	N/A	UL:64 DL:144	PS
48	Interactive or Background	N/A	UL:144 DL:144	PS
49	Interactive or Background	N/A	UL:128 DL:32	PS
50	Streaming	Unknown	UL:16 DL:16	PS
51	Streaming	Unknown	UL:16 DL:32	PS
52	Interactive or Background	N/A	UL:16 DL:32	PS
53	Interactive or Background	N/A	UL:16 DL:64	PS
54	Interactive or Background	N/A	UL:16 DL:128	PS
55	Streaming	Unknown	UL:128 DL:16	PS
56	Conversational	Speech	UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6)	CS
57	Conversational	Unknown	UL:42.8 DL:42.8	PS
58	Interactive or Background	N/A	UL:128 DL:64	PS

59 60	Interactive or Background Interactive or Background	N/A N/A	UL:384 DL:64 UL:384 DL:128	PS PS
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Table 5.2 provides examples of Signalling Radio Bearers (SRBs) which can use configurations as defined in clauses 7 and 8.

[...]

6 Combinations of RABs

The present document contains examples of Radio configuration for following combinations of RABs.

NOTE: It is understood that for speech service the AMR mode may be operated asymmetrically for the uplink and downlink.

List of RAB combinations:

Combinations on DPCH

- 1) Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH.
- 2) Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 3) Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH.
- 4) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 5) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 6) Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 7) Conversational / speech / UL:(10.2, 6.7, 5.9, 4.75) DL:(10.2, 6.7, 5.9, 4.75) kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 8) Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 9) Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 10) Conversational / speech / UL:(7.4, 6.7, 5.9, 4.75) DL:(7.4, 6.7, 5.9, 4.75) kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 11) Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 12) Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 13) Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB
+ UL:1.7 DL:1.7 kbps SRBs for DCCH.
- 14) Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB
+ UL:1.7 DL:1.7 kbps SRBs for DCCH.
- 15) Conversational / unknown / UL:28.8 DL:28.8 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.

- 16) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 17) Conversational / unknown / UL:32 DL:32 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 18) Streaming / unknown / UL:14.4 DL:14.4 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 19) Streaming / unknown / UL:28.8 DL:28.8 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 20) Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 21) Streaming / unknown / UL:0 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 22) Streaming / unknown / UL:64 DL:0 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 23) Interactive or background / UL:32 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 24) Interactive or background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 25) Interactive or background / UL:16 DL:16 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 26) Interactive or background / UL:32 DL:32 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 27) Interactive or background / UL:32 DL:32 kbps / PS RAB (20 ms TTI, RLC PDU size 320, alt. 640)
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 28) Interactive or background / UL:64 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 29) Interactive or background / UL:32 DL: 64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 30) Interactive or background / UL:64 DL: 64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 31) Interactive or background / UL:64 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 32) Interactive or background / UL:128 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 33) Interactive or background / UL:64 DL:144 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 34) Interactive or background / UL:144 DL:144 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 35) Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH.
- 36) Interactive or background / UL:64 DL:384 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH.
- 37) Interactive or background / UL:128 DL:384 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.

- 38) Interactive or background / UL:384 DL:384 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 39) Interactive or background / UL:64 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 40) Interactive or background / UL:128 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 41) Interactive or background / UL:384 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 42) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:32 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 43) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:0 DL:0 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH (FDD)
- 44) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH (FDD)
- 45) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:32 DL:32 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH (FDD)
- 45a) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:32 DL:32 kbps / PS RAB (20ms TTI)
+ UL:3.4 DL:3.4 kbps SRBs for DCCH (FDD)
- 46) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:64 kbps / PS RAB
+ Interactive or background / UL:64 DL:64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH (FDD)
- 47) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ Interactive or background / UL:0 DL:0 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 48) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ Interactive or background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 49) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ Interactive or background / UL:16 DL:16 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 50) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ Interactive or background / UL:32 DL:32 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 51) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ Interactive or background / UL:64 DL:64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 52) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ Interactive or background / UL:64 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 53) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:32 DL:64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.

- 54) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:64 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH.
- 55) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 56) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:256 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 57) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:384 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 58) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:64 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 59) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:128 DL:2048 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 60) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 61) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Streaming / unknown / UL:0 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 62) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 63) Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB
+ Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 64) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 65) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ Interactive or background / UL:64 DL:64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 66) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ Interactive or Background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 67) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ Interactive or Background / UL:16 DL:64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 68) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ Interactive or background / UL:64 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 69) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
+ Interactive or background / UL:128 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.

- 70) Interactive or /background / UL:64 kbps DL:128 kbps / PS RAB
 + Streaming / unknown / UL:0 DL:64 kbps / CS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 71) Interactive or background / UL:8 DL:8 kbps / PS RAB
 + Interactive or background / UL:8 DL:8 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 72) Interactive or background / UL:64 DL:64 kbps / PS RAB
 + Interactive or background / UL:64 DL:64 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 73) Streaming / unknown / UL:16 DL:64 kbps / PS RAB
 + Interactive or background / UL:8 DL:8 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH. (FDD)
- 74) Streaming / unknown / UL:16 DL:128 kbps / PS RAB
 + Interactive or background / UL:8 DL:8 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH.
- 75) Conversational / unknown / UL:8 DL:8 kbps / PS RAB
 + Interactive or Background / UL:8 DL:8 kbps / PS RAB +
 + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:8 DL:8 kbps / PS RAB – TF0 contains zero Transport Blocks

- 76) Conversational / unknown / UL:8 DL:8 kbps / PS RAB
 + Interactive or Background / UL:8 DL:8 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:8 DL:8 kbps / PS RAB – TF0 contains one Transport Block of zero size

- 77) Conversational / unknown / UL:16 DL:16 kbps / PS RAB +
 Interactive or Background / UL:8 DL:8 kbps / PS RAB +
 UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:16 DL:16 kbps / PS RAB – TF0 contains zero Transport Blocks

- 78) Conversational / unknown / UL:16 DL:16 kbps / PS RAB +
 Interactive or Background / UL:8 DL:8 kbps / PS RAB +
 UL:3.4 DL:3.4 kbps SRBs for DCCH

NOTE: Conversational / unknown / UL:16 DL:16 kbps / PS RAB – TF0 contains one Transport Block of zero size

- 79) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
 + Interactive or Background / UL:0 DL:0 kbps / PS RAB
 + Interactive or Background / UL:0 DL:0 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH

- 79a) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
 + Interactive or background / UL:0 DL:0 kbps / PS RAB
 + Interactive or background / UL:0 DL:0 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH (L1 multiplexing) (FDD)

- 80) Conversational / unknown / UL:64 DL:64 kbps / CS RAB
 + Interactive or Background / UL:8 DL:8 kbps / PS RAB
 + Interactive or Background / UL:8 DL:8 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH

- 81) Streaming / unknown / UL:8 DL:16 kbps / PS RAB
 + Interactive or Background / UL:8 DL:8 kbps / PS RAB
 + UL:3.4 DL:3.4 kbps SRBs for DCCH

- 82) Streaming / unknown / UL:8 DL:32 kbps / PS RAB +
Interactive or Background / UL:8 DL:8 kbps / PS RAB +
UL:3.4 DL:3.4 kbps SRBs for DCCH
- 83) Streaming / unknown / UL:32 DL:256 kbps / PS RAB +
Interactive or Background / UL:8 DL:8 kbps / PS RAB +
UL:3.4 DL:3.4 kbps SRBs for DCCH
- 84) Interactive or background / UL:16 DL:16 kbps / PS RAB +
Interactive or Background / UL:16 DL:16 kbps / PS RAB +
UL:3.4 DL:3.4 kbps SRBs for DCCH
- 85) Interactive or background / UL:64 DL:8 kbps / PS RAB +
Interactive or Background / UL:64 DL:8 kbps / PS RAB +
UL:3.4 DL:3.4 kbps SRBs for DCCH
- 86) Interactive or Background / UL:64 DL:128 kbps / PS RAB
+ Interactive or Background / UL:64 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 87) Interactive or Background / UL:64 DL:384 kbps / PS RAB
+ Interactive or Background / UL:64 DL:384 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 88) Interactive or background / UL:128 DL:128 kbps / PS RAB +
Interactive or Background / UL:128 DL:128 kbps / PS RAB +
UL:3.4 DL:3.4 kbps SRBs for DCCH
- 89) Interactive or background / UL:128 DL:32 kbps / PS RAB +
Interactive or Background / UL:128 DL:32 kbps / PS RAB +
UL:3.4 DL:3.4 kbps SRBs for DCCH
- 90) Streaming / unknown / UL: 16 DL:16 kbps / PS RAB
+ Interactive or background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 91) Streaming / unknown / UL: 16 DL:32 kbps / PS RAB
+ Interactive or background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 92) Interactive or background / UL: 16 DL:32 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 93) Interactive or background / UL: 16 DL:64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 94) Interactive or background / UL: 16 DL:128 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 95) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Streaming / unknown / UL: 16 DL:128 kbps / PS RAB
+ Interactive or background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 96) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Streaming / unknown / UL: 128 DL:16 kbps / PS RAB
+ Interactive or background / UL:8 DL:8 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH
- 97) Conversational / speech / UL:(12.65 8.85 6.6) DL:(12.65 8.85 6.6) kbps / CS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH + DL:0.15 kbps SRB#5 for DCCH
- 98) Interactive or background / UL:32 DL:64 kbps / PS RAB
+ Interactive or background / UL:32 DL:64 kbps / PS RAB
+ UL:3.4 DL: 3.4 kbps SRBs for DCCH (L1 multiplexing) (FDD)

- 99) Interactive or background / UL: 128 DL:64kbps / PS RAB
+ UL: 3.4 DL 3.4 kbps SRBs for DCCH
- 100) Interactive or background / UL: 384 DL:64kbps / PS RAB
+ UL: 3.4 DL 3.4 kbps SRBs for DCCH
- 101) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB
+ Interactive or background / UL:128 DL:64 kbps / PS RAB
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.

102) Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kb/s Signalling Radio Bearers for DCCH

103) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 64kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

104) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

105) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 384kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

[...]

7.1.102 Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kb/s Signalling Radio Bearers for DCCH

The minimum UE classes supporting this combination are UL: 384kbps, DL: 128kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.

7.1.102.1 Uplink

7.1.102.1.1 Transport channel parameters

7.1.102.1.1.1 Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

See subclause 6.10.2.4.1.34.1.1.1 of [1].

7.1.102.1.1.2 Transport channel parameters for UL:3.4 kbps SRBs for DCCH

See subclause 6.10.2.4.1.2.1.1.1 of [1].

7.1.102.1.1.3 TFCS

See subclause 6.10.2.4.1.34.1.1.3 of [1].

7.1.102.1.2 Physical channel parameters

See subclause 6.10.2.4.1.34.1.2 of [1].

7.1.102.2 Downlink

7.1.102.2.1 Transport channel parameters

7.1.102.2.1.1 Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

See subclause 6.10.2.4.1.27.2.1.1 of [1].

[7.1.102.2.1.2](#) Transport channel parameters for DL:3.4 kbps SRBs for DCCH

[See subclause 6.10.2.4.1.2.2.1.1. of \[1\].](#)

[7.1.102.2.1.3](#) TFCS

[See subclause 6.10.2.4.1.27.2.1.3 of \[1\].](#)

[7.1.102.2.2](#) Physical channel parameters

[See subclause 6.10.2.4.1.27.2.2 of \[1\].](#)

[7.1.103](#) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 64kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

[The minimum UE classes supporting this combination are UL: 384kbps, DL: 64kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.](#)

[7.1.103.1](#) Uplink

[7.1.103.1.1](#) Transport channel parameters

[7.1.103.1.1.1](#) Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

[See clause 6.10.2.4.1.4.1.1.1. of \[1\].](#)

[7.1.103.1.1.2](#) Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

[See subclause 6.10.2.4.1.34.1.1.1 of \[1\].](#)

[7.1.103.1.1.2](#) Transport channel parameters for UL:3.4 kbps SRBs for DCCH

[See subclause 6.10.2.4.1.2.1.1.1 of \[1\].](#)

[7.1.103.1.1.3](#) TFCS

[See subclause 6.10.2.4.5.3.1.1.4 of \[1\].](#)

[7.1.103.1.2](#) Physical channel parameters

[See subclause 6.10.2.4.5.3.1.2 of \[1\].](#)

[7.1.103.2](#) Downlink

[7.1.103.2.1](#) Transport channel parameters

[7.1.103.2.1.1](#) Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

[See subclause 6.10.2.4.1.4.2.1.1 of \[1\].](#)

[7.1.103.2.1.2](#) Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

[See subclause 6.10.2.4.1.25.2.1.1 of \[1\].](#)

[7.1.103.2.1.3](#) Transport channel parameters for DL:3.4 kbps SRBs for DCCH

[See subclause 6.10.2.4.1.2.2.1.1 of \[1\].](#)

[7.1.103.2.1.3](#) TFCS

[See subclause 6.10.2.4.1.39.2.1.4 of \[1\].](#)

[7.1.103.2.2](#) Physical channel parameters

[See subclause 6.10.2.4.1.39.2.2 of \[1\].](#)

[7.1.104](#) Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 128kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH

[The minimum UE classes supporting this combination are UL: 384kbps, DL: 128kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.](#)

[7.1.104.1](#) Uplink

[7.1.104.1.1](#) Transport channel parameters

[7.1.104.1.1.1](#) Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB

[See subclause 6.10.2.4.1.4.1.1.1 of \[1\].](#)

[7.1.104.1.1.1](#) Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB

[See subclause 6.10.2.4.1.34.1.1.1 of \[1\].](#)

[7.1.104.1.1.2](#) Transport channel parameters for UL:3.4 kbps SRBs for DCCH

[See subclause 6.10.2.4.1.2.1.1.1 of \[1\].](#)

[7.1.104.1.1.3](#) TFCS

[See subclause 6.10.2.4.5.3.1.1.4 of \[1\].](#)

[7.1.104.1.2](#) Physical channel parameters

[See subclause 6.10.2.4.5.3.1.2 of \[1\].](#)

[7.1.104.2](#) Downlink

[7.1.104.2.1](#) Transport channel parameters

[7.1.104.2.1.1](#) Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB

[See subclause 6.10.2.4.1.4.2.1.1 of \[1\].](#)

[7.1.104.2.1.2](#) Transport channel parameters for Interactive or background / DL:128 kbps / PS RAB

[See clause 6.10.2.4.1.27.2.1.1 of \[1\].](#)

[7.1.104.2.1.3](#) Transport channel parameters for DL:3.4 kbps SRBs for DCCH

[See subclause 6.10.2.4.1.2.2.1.1. of \[1\].](#)

[7.1.104.2.1.3 TFCS](#)

[See subclause 6.10.2.4.1.41.2.1.4 of \[1\].](#)

[7.1.104.2.2 Physical channel parameters](#)

[See subclause 6.10.2.4.1.41.2.2 of \[1\].](#)

[7.1.105 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL: 384kbps / PS RAB + UL:3.4 DL:3.4 kbps Signalling Radio Bearers for DCCH](#)

[The minimum UE classes supporting this combination are UL: 384kbps, DL: 384kbps. The minimum UE class to support the alternative UL physical configuration 2 is UL: 384kbps plus support for 'Maximum total number of transport blocks transmitted within TTIs that start at the same time' = 32.](#)

[7.1.105.1 Uplink](#)

[7.1.105.1.1 Transport channel parameters](#)

[7.1.105.1.1.1 Transport channel parameters for Conversational / speech / UL:12.2 kbps / CS RAB](#)

[See subclause 6.10.2.4.1.4.1.1.1 of \[1\].](#)

[7.1.105.1.1.2 Transport channel parameters for Interactive or background / UL:384 kbps / PS RAB](#)

[See subclause 6.10.2.4.1.34.1.1.1 of \[1\].](#)

[7.1.105.1.1.3 Transport channel parameters for UL:3.4 kbps SRBs for DCCH](#)

[See subclause 6.10.2.4.1.2.1.1.1 of \[1\].](#)

[7.1.105.1.1.3 TFCS](#)

[See subclause 6.10.2.4.5.3.1.1.4 of \[1\].](#)

[7.1.105.1.2 Physical channel parameters](#)

[See subclause 6.10.2.4.5.3.1.2 of \[1\].](#)

[7.1.105.2 Downlink](#)

[7.1.105.2.1 Transport channel parameters](#)

[7.1.105.2.1.1 Transport channel parameters for Conversational / speech / DL:12.2 kbps / CS RAB](#)

[See subclause 6.10.2.4.1.4.2.1.1 of \[1\].](#)

[7.1.105.2.1.2 Transport channel parameters for Interactive or background / DL:384 kbps / PS RAB](#)

[See subclause 6.10.2.4.1.32.2.1.1 of \[1\].](#)

[7.1.105.2.1.3](#) [Transport channel parameters for DL:3.4 kbps SRBs for DCCH](#)

[See subclause 6.10.2.4.1.2.2.1.1. of \[1\].](#)

[7.1.105.2.1.3](#) [TFCS](#)

[See subclause 6.10.2.4.1.43.2.1.4. of \[1\].](#)

[7.1.105.2.2](#) [Physical channel parameters](#)

[See subclause 6.10.2.4.1.43.2.2 of \[1\].](#)