TSG-RAN Meeting #19 ***RP-030109***
Birmingham, UK, 11 - 14 March 2003

Title: **CRs on TR 25.993 version 6.0.0 affecting earlier releases (R99, Rel-4 and Rel-5)**

Source: **TSG-RAN WG2**

Agenda item: **8.2.2**

TR	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	"Release affected"	Workitem
25.993	001	-	Rel-6	Streaming and interactive/background RAB combinations	F	6.0.0	6.1.0	R2-030489	R99	TEI6
25.993	002	-	Rel-6	QoS attributes for RABs in 25.993	F	6.0.0	6.1.0	R2-030551	Rel-5	TEI6
25.993	003	-	Rel-6	TDD RABs in 25.993	F	6.0.0	6.1.0	R2-030598	Rel-4	TEI6

3GPP TSG-RAN WG2 Meeting #34
Sophia Antipolis, France, February 17th-21st, 2003

Tdoc ⌘R2-030489

CR-Form-v7

CHANGE REQUEST

⌘ **25.993** **CR** **001** ⌘**rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Streaming and interactive/background RAB combinations
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI-6
Date:	⌘	11/02/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

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: ⌘ There are several important streaming and interactive/background combinations that have not been included in the current version of 25.993. The interactive/background combinations are important for the non-real-time streaming services. There are currently 8 kbps UL for these combinations; the proposed uplink 16 kbps is for the cases where 8 kpbs RAB is not sufficient for the UL traffic.

Summary of change: ⌘ The following combinations are presented for approval:

1. 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

2. 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

3. Interactive or background / UL: 16 DL:32 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH

4. Interactive or background / UL: 16 DL:64 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH

5. Interactive or background / UL: 16 DL:128 kbps / PS RAB
   + UL:3.4 DL:3.4 kbps SRBs for DCCH

Consequences if ⌘ There are no examples on RAB combinations for the described combinations.

not approved:	

Clauses affected:	⌘	5, 6, 7.1			
Other specs affected:	⌘	**Y**	**N**	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.

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.

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

#	Traffic class [2]	SSD [2]	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

Table 5.2 provides examples of Signalling Radio Bearers (SRBs) which can use configurations as defined in clauses 7 and 8.

Table 5.2: Signalling Radio Bearers (SRBs)

#	Maximum rate, kbps	Logical channel	PhyCh onto which SRBs are mapped
1	UL:1.7 DL:1.7	DCCH	DPCH
2	UL:3.4 DL:3.4	DCCH	DPCH
3	UL:13.6 DL:13.6	DCCH	DPCH
4	DL:27.2 (alt. 40.8)	DCCH	SCCPCH
5	UL:16.6	CCCH	PRACH
6	DL:30.4 (alt. 45.6)	CCCH	SCCPCH
7	DL:33.2 (alt. 49.8)	BCCH:	SCCPCH
8	DL:24 (alt. 6.4)	PCCH	SCCPCH
9	UL:16.8 (TDD)	SHCCH	PRACH
10	UL:16.8 (TDD)	SHCCH	PRACH or PUSCH
11	DL:16 (TDD)	SHCCH	SCCPCH
12	DL:16 (TDD)	SHCCH	SCCPCH or PUSCH

6 Combinations of RABs

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

<removed text>

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

<end of modified section>

7 Examples of Radio Bearers and Signalling Radio Bearers for FDD

7.1 Combinations on DPCH

7.1.89.2.2 Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		64
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	60
		Number of data bits/frame	900

7.1.90 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

The minimum UE classes supporting this combination are, UL: 64 kbps, DL: 128 kbps. This is supported in Release 99.

7.1.90.1 Uplink

See subclause 6.10.2.4.1.58.1 of [1]

7.1.90.2 Downlink

See subclause 7.1.81.2

7.1.91 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

The minimum UE classes supporting this combination are, UL: 64 kbps DL: 128. This is supported in Release 99.

7.1.91.1 Uplink

See subclause 6.10.2.4.1.58.1 of [1]

7.1.91.2 Downlink

See subclause 7.1.82.2

7.1.92 Interactive or background / UL:16 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 32 kbps plus support of turbo coding, DL: 64 kbps. This is supported in Release 99.

7.1.92.1 Uplink

See subclause 6.10.2.4.1.23b.1 of [1]

7.1.92.2 Downlink

See subclause 6.10.2.4.1.23c.2 of [1]

7.1.93 Interactive or background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 32 kbps plus support of turbo coding, DL: 64 kbps. This is supported in Release 99.

7.1.93.1 Uplink

See subclause 6.10.2.4.1.23b.1 of [1]

7.1.93.2 Downlink

See subclause 6.10.2.4.1.25.2 of [1]

7.1.94 Interactive or background / UL:16 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

The minimum UE classes supporting this combination are, UL: 32 kbps plus support of turbo coding, DL: 128 kbps. This is supported in Release 99.

7.1.94.1 Uplink

See subclause 6.10.2.4.1.23b.1 of [1]

7.1.94.2 Downlink

See subclause 6.10.2.4.1.27.2 of [1]

3GPP TSG-RAN2 Meeting #34 **R2-030551**
Sophia Antipolis, France, February 17 - 21, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.993** **CR** **002** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	QoS attributes for RABs in 25.993
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI-6 ***Date:*** ⌘ 20/02/2003
Category:	⌘	**F** ***Release:*** ⌘ Rel-6

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:	⌘	It is currently not very clearly stated, that the mapping between RAB and RB is not standadised and is part of RRM. Moreover it is not very clear that a number of RB are suited to fulfill the requirements of a given RAB.
Summary of change:	⌘	Text added which clarifies that certain RBs are suited to fulfill the RAB requirements and that the mapping between RAB and RB is RRM issue, which is not standardised.
Consequences if not approved:	⌘	It remains unclear, that guaranteed and non-guaranteed RAB requirements can be fulfilled by a number of RBs.

Clauses affected:	⌘	4, 5

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

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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.

4 QoS Architecture and RAB attributes

From a user point-of-view services are considered end-to-end, this means from a Terminal Equipment (TE) to another TE. An End-to-End Service may have a certain Quality of Service (QoS) which is provided for the user through the different networks. In UMTS, it is the UMTS Bearer Service that provides the requested QoS through the use of different QoS classes as defined in [2].
The UMTS Bearer Service consists of two parts, the Radio Access Bearer (RAB) Service and the Core Network Bearer Service. The Radio Access Bearer Service is realised by a Radio Bearer (RB) Service and an Iu-Bearer Service. The relationship between the services is illustrated in figure 4.1.

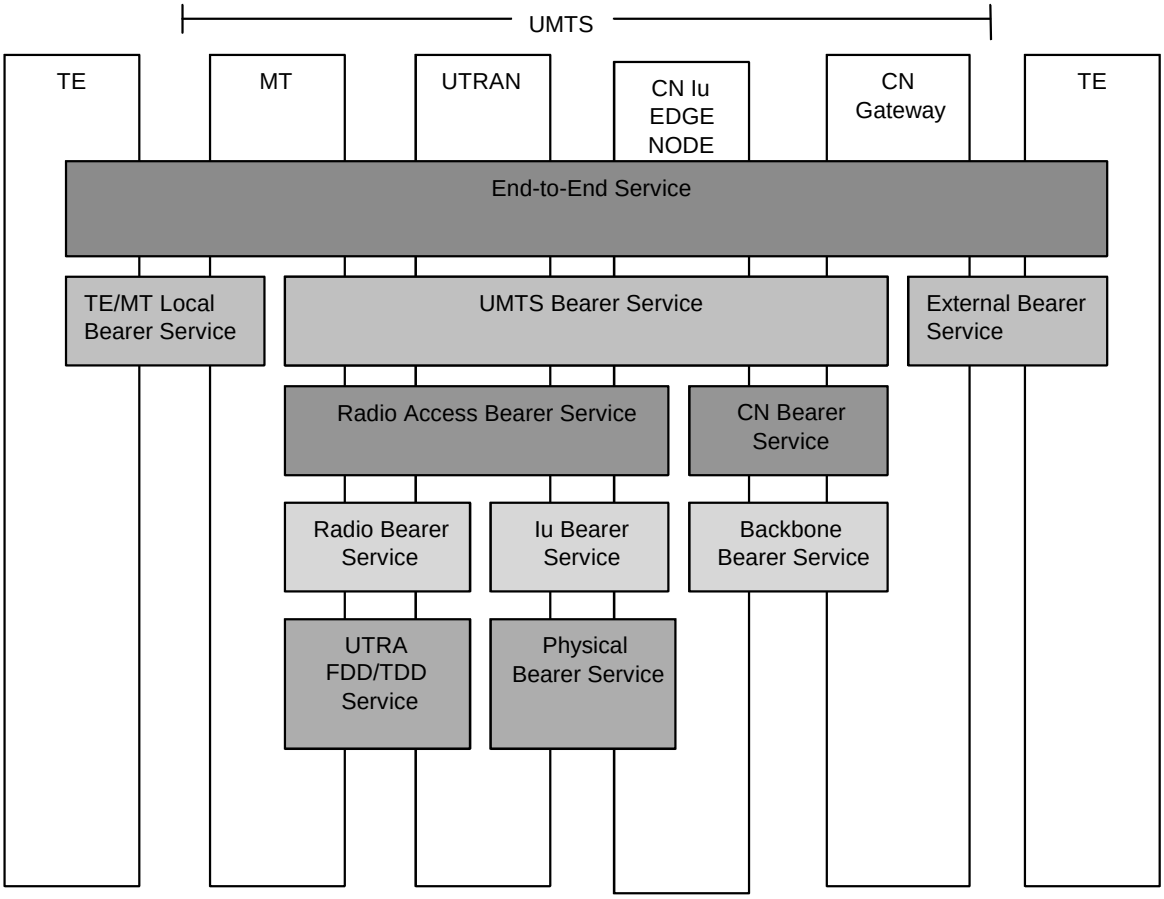

Figure 4.1: UMTS QoS Architecture

The Radio Access Bearer (RAB) Service is characterised by a number of attributes such as Traffic class, Maximum bit rate, Guaranteed bit rate, SDU error ratio, Residual BER, Transfer Delay etc. As a first approach the four following attributes have been considered to come up with the parameter settings in clause 7 for FDD mode and 8 for TDD mode:

- Traffic class;
- SSD;
- Maximum bit rate;

- Residual BER.

The Traffic classes are explained in table 4.1. The Maximum bit rate has been considered at RLC layer and Physical Layer for the acknowledged and unacknowledged modes respectively. The Residual BER is understood as BER at RLC layer and Transport BLER for the acknowledged and unacknowledged modes respectively.

Table 4.1: Traffic classes

Traffic class	**Conversational class** conversational RT	**Streaming class** streaming RT	**Interactive class** Interactive best effort	**Background** Background best effort
Fundamental characteristics	- Preserve time relation (variation) between information entities of the stream Conversational pattern (stringent and low delay)	- Preserve time relation (variation) between information entities of the stream (i.e. some but constant delay)	Request response pattern Preserve payload content	Destination is not expecting the data within a certain time Preserve payload content
Example of the application	- speech, video, …	- facsimile (NT) - streaming audio and video	- Web browsing	- background download of emails

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 [2]	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

Table 5.2 provides examples of Signalling Radio Bearers (SRBs) which can use configurations as defined in clauses 7 and 8.

Table 5.2: Signalling Radio Bearers (SRBs)

#	Maximum rate, kbps	Logical channel	PhyCh onto which SRBs are mapped
1	UL:1.7 DL:1.7	DCCH	DPCH
2	UL:3.4 DL:3.4	DCCH	DPCH
3	UL:13.6 DL:13.6	DCCH	DPCH
4	DL:27.2 (alt. 40.8)	DCCH	SCCPCH
5	UL:16.6	CCCH	PRACH
6	DL:30.4 (alt. 45.6)	CCCH	SCCPCH
7	DL:33.2 (alt. 49.8)	BCCH:	SCCPCH
8	DL:24 (alt. 6.4)	PCCH	SCCPCH
9	UL:16.8 (TDD)	SHCCH	PRACH
10	UL:16.8 (TDD)	SHCCH	PRACH or PUSCH
11	DL:16 (TDD)	SHCCH	SCCPCH
12	DL:16 (TDD)	SHCCH	SCCPCH or PUSCH

3GPP TSG-RAN WG2 Meeting #34
Sophia Antipolis, France, 17-21 Feb 2002

Tdoc ⌘R2-030598

CR-Form-v7

CHANGE REQUEST

⌘ **25.993** **CR** **003** ⌘**rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	TDD RABs in 25.993
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI-6
Date:	⌘	17 Feb 2003
Category:	⌘	**F**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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C *(functional modification of feature)*
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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: ⌘ The specified minimum UE classes to support radio bearers and signaling radio bearers for TDD
- may require significant amount of extra unnecessary UE capability to support the radio bearers and signaling radio bearers.
- may not completely identify extra paramters necessary for RABs and the SRBs

The spection of UE classes for 1.28 Mcps TDD should be supported by release 4.

Summary of change: ⌘ Unnecessary UE capability required for UE class specifications and necessary extra parameters for UE capability are identified for TDD RABs and SRBs. Corrections on the UE classes and parameters for the TDD RABs and SRBs are proposed.

Separation of 3.84 Mcps TDD and 1.28 Mcps TDD to different sections and corrections on UE classes supported by release 4 for 1.28 Mcps TDD.

Add a new section 9 for example of radio bearers and signaling radio bearers.

Consequences if not approved: ⌘
- Unnecessary restrictions on RAB to be supported by certain UE classes and inefficient use of UE capabilities.
- Some TDD RABs and SRBs will not be supported by the corresponding incomplete UE capabilities.

Clauses affected: ⌘ 8; 9(new)

		Y	N			
Other specs Affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		

Other comments: ⌘

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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.

8 Examples of Radio Bearers and Signalling Radio Bearers for 3.84 Mcps TDD

8.1 Combinations on DPCH

8.1.1 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.3.4.1.1 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.2 Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.2 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.2 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.3 Stand-aloneUL:13.6 DL:13.6 kbps SRBs for DCCH

See subclause 6.10.3.4.1.3 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.3 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.4 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.4 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.5 Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.5 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.5 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.6 Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

~~[1]~~ See subclause 6.10.3.4.1.6 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.6 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.7 Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.7 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.7 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.8 Conversational / speech / UL:6.7 DL: 6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.8 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.8 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.9 Conversational / speech / UL:5.9 DL:5.9 kbps / CS rab + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.9 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.9 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.10 Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.3.4.1.10 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.10 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.11 Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.10.3.4.1.11 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.11 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release '99.

8.1.12 Conversational / unknown / UL:28.8 DL:28.8kbps / CS RAB + UL:3.4 DL:3.4kbps SRBs for DCCH

See subclause 6.10.3.4.1.12 of [1] for 3.84 Mcps TDD., ~~and subclause 6.11.5.4.1.12 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280, DL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280.

This is supported in Release '99.

8.1.13 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.13 of [1] for 3.84 Mcps TDD., ~~, and subclause 6.11.5.4.1.13 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 64kbps, DL: 32kbps plus support for turbo coding, maximum TB bits 2560 (Alt. 3840) and TB TC bits 1280 (Alt. 2560).

This is supported in Release '99.

8.1.14 Conversational / unknown / UL:32 DL: 32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.14 of [1] for 3.84 Mcps TDD., ~~, and subclause 6.11.5.4.1.14 of [1] for 1.28 Mcps TDD.~~

~~For 3.84 Mcps TDD t~~The minimum UE classes supporting this combination are UL: 32kbps plus support for minimum SF 4, turbo coding, maximum TB bits 1280 (Alt. 2560) and TB TC bits 640 (Alt. 1280), DL: 32kbps plus support for turbo coding, maximum TB bits 1280(Alt. 2560) and TB TC bits 640 (Alt. 1280).

This is supported in Release '99.

~~For 1.28 Mcps TDD the minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 1280 (Alt. 2560) and TB TC bits 640 (Alt. 1280), DL: 32kbps plus support for turbo coding and maximum TB bits 1280(Alt. 2560) and TB TC bits 640 (Alt. 1280).~~

~~This is supported in Release '99.~~

8.1.15 Streaming / unknown / UL:14.4 DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.15 of [1] for 3.84 Mcps TDD., ~~, and subclause 6.11.5.4.1.15 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 1280 and TB TC bits 640, DL: 32kbps plus support for turbo coding, maximum TB bits 1280 and TB TC bits 640.

This is supported in Release '99.

8.1.16 Streaming / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.16 of [1] for 3.84 Mcps TDD., ~~, and subclause 6.11.5.4.1.16 of [1] for 1.28 Mcps TDD.~~

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280, DL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280.

This is supported in Release '99.

8.1.17 Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.17 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 3264kbps plus support for turbo coding, maximum TB bits 2560, and maximum TC TB bits 2560.

This is supported in Release '99.

8.1.18 Streaming / unknown / UL:0 DL: 64 kbps / CS or PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.18 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps support for turbo codes not required,; DL: 12832kbps plus support for turbo coding, maximum TB bits 3840, maximum TC TB bits 2560, and maximum 16 TBs per TTI.

This is supported in Release '99.

8.1.19 Streaming / unknown / UL: 64 DL:0 kbps / CS or PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.19 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI transmission of 16 transport blocks in a TTI, and 2 physical channels per TS, DL: 32kbps. support for turbo codes not required.

This is supported in Release '99.

8.1.20 Interactive or background / UL: 32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.23 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps, or alternatively plus support for maximum CC TB bits 1280 if turbo coding is not used;, DL: 32kbps plus support for turbo coding plus maximum TC TB bits 640, or alternatively, not support for turbo coding if convolutional coding with rate 1/3 is used.

This is supported in Release '99.

8.1.21 Interactive or background / UL: 64 DL: 8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.24 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for transmission of 16 transport blocks in a TTI, and 2 physical channels per TS;, DL: 32kbps plus support for turbo coding, maximum TC TB bits 640, or alternatively not support for turbo coding if convolutional coding with rate 1/3 is used.

This is supported in Release '99.

8.1.22 Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.25 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps, or (alternatively plus support for maximum CC TB bits 1280 if convolutional coding with rate 1/3 is used instead of turbo coding);~~,~~ DL: ~~64~~32kbps plus support for turbo coding, maximum TB bits 2560, and maximum TC TB bits 2560.

This is supported in Release '99.

8.1.23 Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.26 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for ~~transmission of 16 transport blocks in a TTI, and~~ 2 physical channels per TS;~~,~~ DL: 32~~64~~kbps plus support for turbo coding, maximum TB bits 2560, and maximum TC TB bits 2560.

This is supported in Release '99.

8.1.24 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.27 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for ~~transmission of 16 transport blocks in a TTI, and~~ 2 physical channels per TS~~, DL: 128kbps~~; DL: 32 kbps plus support for turbo coding, maximum TB bits 3840, maximum TC TB bits 3840, and maximum 16 TBs per TTI.~~.~~

This is supported in Release '99.

8.1.25 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.28 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64~~128~~kbps plus support for ~~transmission of~~ maximum 16 TBs per TTI;~~16 transport blocks in a TTI, DL: 128kbps~~ DL: 32 kbps plus support for turbo coding, maximum TB bits 3840, maximum TC TB bits 3840, and maximum 16 TBs per TTI.

This is supported in Release '99.

8.1.26 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.29 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for ~~transmission of 16 transport blocks in a TTI, and~~ 2 physical channels per TS;~~, DL: 128kbps~~; DL: 64 kbps plus support for maximum 16 TBs per TTI.

This is supported in Release '99.

8.1.27 Interactive or background / UL: 144 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.30 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI,~~transmission of 16 transport blocks in a TTI,~~ and 2 physical channels per TS~~, DL: 128kbps~~; DL: 64 kbps plus support for maximum 16 TBs per TTI.

This is supported in Release '99.

8.1.28 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.31 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for ~~transmission of 16 transport blocks in a TTI, and~~ 2 physical channels per TS~~;~~ DL: ~~384kbps~~ 128 kbps plus support for 16 physical channels per frame, and (if an alternateive RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400, and maximum 32 TBs per TTI).

This is supported in Release '99.

8.1.29 Interactive or background / UL: 64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.32 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for ~~transmission of 16 transport blocks in a TTI, and~~ 2 physical channels per TS~~;~~ DL: 384kbps and plus (if an alternative RAB is used, support for maximum TB bits 8960, maximum TC TB bits 8960).

~~.~~This is supported in Release '99.

8.1.30 Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.33 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: ~~128~~64kbps plus support for ~~transmission of~~maximum 16 TBs per TTI; ~~transport blocks in a TTI,~~ DL: 384kbps and plus (if an alternative RAB is used, support for maximum TB bits 8960, maximum TC TB bits 8960).~~DL: 384kbps.~~

This is supported in Release '99.

8.1.31 Interactive or background / UL:384 DL:384 kbps / PS RAB +UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.34 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: ~~768~~128kbps plus support for maximum TB bits 8960, maximum TC TB bits 8960, and maximum 32 TBs per TTI, and (if an alternative RAB is used, plus support for maximum TB bits 5120, maximum TC TB bits 5120, and maximum 16 TBs per TTI); ~~,~~DL: 384kbps and (if an alternative RAB is used, plus support for maximum TB bits 8960, maximum TC TB bits 8960).~~.~~

This is supported in Release '99.

8.1.32 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.35 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for ~~transmission of 16 transport blocks in a TTI, and~~ 2 physical channels per TS;~~,~~ DL: 2048kbps plus support for maximum TB bits 40960 and maximum TB TC bits 40960, and (if an alternative RAB is used, plus support for maximum TB bits 81920 and maximum TC TB bits 81920). ~~.~~

This is supported in Release '99.

8.1.33 Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.36 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI; ~~128kbps plus support for transmission of 16 transport blocks in a TTI,~~ DL: 2048kbps plus support for maximum TB bits 40960 and maximum TB TC bits 4096~~0~~, and ~~0~~(if an alternative RAB is used, plus support for maximum TB bits 81920 and maximum TB TC bits 81920).

This is supported in Release '99.

8.1.34 Interactive or background / UL~~-~~: 384 DL:2048 kbps / PS RAB+UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.37 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: ~~768~~ 128kbps plus support for ~~-~~maximum TB bits 8690, maximum TC TB bits 8690, and maximum 32 TBs per TTI, (if an alternative RAB is used, plus support for maximum TB bits 5120, maximum TC TB bits 5120 and maximum 16 TBs per TTI) ~~turbo coding,~~; DL: 2048 kbps plus support for maximum TB bits 40960, maximum TB TC bits 40960, optional SF 1, and (if an alternative RAB is used, plus support for maximum TB bits 81920 and maximum TB TC bits 81920).~~support for turbo coding.~~

This is supported in Release '99.

8.1.35 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

See subclause 6.10.3.4.1.38 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps ~~plus~~ , and (if turbo coding is alternatively not used, support for maximum CC TB bits 1280); ~~support~~ ~~for turbo coding~~, DL: ~~64~~32 ~~-~~kbps plus support for Turbo coding, maximum TC TB bits 640, and maximum TB bits 1280, or (alternatively, if convolutional coding with rate 1/3 is used instead of turbo coding, support for maxim CC TB bits 1280).~~.~~

This is supported in Release '99.

8.1.36 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

See subclause 6.10.3.4.1.39 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps, (alternatively, if covolutional coding with rate 1/3 is used instead of turbo coding, support for maximum TC TB bits 1280); ~~plus support for turbo coding, DL:64 kbps~~; DL: 32 kbps plus support for turbo coding, maximum TB bits 2560, maximum TC TB bits 2560. ~~support for turbo coding.~~

This is supported in Release '99.

8.1.37 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

See subclause 6.10.3.4.1.40 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: ~~64~~ 64kbps ~~plus support for turbo coding (plus support of SF1 for 1.28 Mcps TDD), DL:64 kbps plus support for turbo coding~~; DL: 32 kbps plus support for turbo coding, maximum TB bits 2560, and maximum TC TB bits 2560. ~~(plus support of SF1 for 1.28 Mcps TDD)~~.

This is supported in Release '99.

8.1.38 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

See subclause 6.10.3.4.1.41 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps ~~plus support for turbo coding (plus support of SF1 for 1.28 Mcps TDD);~~ DL: 128 kbps. ~~plus support , for turbo coding.~~

This is supported in Release '99.

8.1.39 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

See subclause 6.10.3.4.1.42 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps ~~plus support for turbo coding (plus support of SF1 for 1.28 Mcps TDD);~~ DL: ~~384~~ 128kbps plus support of 20 physical channels per frame and 10 physical channels per TS, and ~~plus support for~~ (if an alternative RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400, and maximum 32 TBs per TTI). ~~turbo coding.~~

This is supported in Release '99.

8.1.40 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

See subclause 6.10.3.4.1.43 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps ~~plus support of turbo coding (plus support of SF1 for 1.28 Mcps TDD);~~ DL: ~~768~~384 kbps plus ~~support~~, (if an alternative RAB is used, support for maximum TB bits 8960, maximum TC TB bits 8960). ~~of turbo coding~~.

This is supported in Release '99.

8.1.41 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

See subclause 6.10.3.4.1.44 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support for maximum 16 TBs per TTI, ~~for turbo coding (plus support of SF1 and 8PSK for 1.28 Mcps TDD~~, and 2 physical channels per TS ~~)~~; DL: 2048 kbps plus support for ~~turbo coding .~~ maximum TB bits 40960, maximum TC TB bits 40960, or (if an alternative RAB is used, plus support for maximum TB bits 81920 and maximum TB TC bits 81920).

This is supported in Release '99.

8.1.42 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

See subclause 6.10.3.4.1.45 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support 2 physical channels per TS; ~~of turbo coding , DL:64 kbps~~; DL: 32 kbps plus turbo coding, maximum TB bits 3840 and maximum TC TB bits 2560. ~~plus support of turbo coding~~.

This is supported in Release '99.

8.1.43 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.46 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32~~64~~ kbps ~~:~~ ; ~~plus support for turbo coding, DL: 64 kbps plus support for~~ DL: 32 kbps plus support for turbo coding, maximum TB bits 3840, maximum TC TB bits 2560, and maximum 16 TBs per TTI. ~~turbo coding~~.

This is supported in Release '99.

8.1.44 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

See subclause 6.10.3.4.1.49 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps ~~plus support for turbo coding (plus support of SF1 for 1.28 Mcps TDD), DL: 64 kbps plus support for turbo coding~~; DL: 32 kbps plus turbo coding, maximum TB bits 2560, maximum TC TB bits 1280, and (if the alterntive RAB is used, plus support for maximum TB bits 3840 and maximum TC TB bits 2560). ~~.~~

This is supported in Release '99.

8.1.45 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

See subclause 6.10.3.4.1.50 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps ~~plus support for turbo coding (~~plus support of SF1, and (if the alternative RAB is used, maximum TB bits 6400, maximum TC TB bits 5120, and maximum 16 TBs per TTI)~~1 for 1.28 Mcps TDD),~~; DL: ~~128~~128 kbps and (if the alterntive RAB is used, ~~-~~plus support for maximum TB bits 6400, maximum TC TB bits 5120). ~~turbo coding.~~

This is supported in Release '99

8.1.46 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PCS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.51 of [1] for 3.84 Mcps TDD.

The minimum UE classes for this combinations are UL: 64 kbps ~~plus support for turbo coding (plus support of SF1 for 1.28 Mcps TDD),~~; DL: ~~128~~32 kbps plus support for turbo coding, maximum TB bits 3840, maximum TC TB bits 3840, (if the RAB is used, plus support for maximum TB bits 5120, maximum TC TB bits 5120, and maximum 16 TBs per TTI). ~~(plus support of SF1 for 1.28 Mcps TDD).~~

This is supported in Release '99.

8.1.47 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PCS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.52 of [1] for 3.84 Mcps TDD.

The minimum UE classes for this combination are UL: 64 kbps ~~plus support of turbo coding (plus support of SF1 for 1.28 Mcps TDD),~~; DL: ~~384~~128kbps plus support for maximum TB bits 5120, maximum TC TB bits 5120, and (if the alternative RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400).~~support of turbo coding~~.

This is supported in Release '99.

8.1.48 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:128 DL:128 kbps / PCS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.10.3.4.1.53 of [1] for 3.84 Mcps TDD.

The minimum UE classes for this combination are UL: ~~128~~ 64kbps plus support for support for maximum TB bits 5120, maximum TC TB bits 5120, and maximum 16 TBs per TTI, and 2 physical channels per TS, and (if the alternative RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400); ~~turbo coding (plus support of SF1 for 1.28 Mcps TDD);~~ DL: ~~384~~128 kbps plus support for support for maximum TB bits 5120, maximum TC TB bits 5120, and (if the RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400).~~turbo coding.~~

This is supported in Release '99.

8.1.49 Interactive or background / UL:64 DL:128 kbps / PS RAB + streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4kbps SRBs for DCCH

See subclause 6.10.3.4.1.54 of [1] for 3.84 Mcps TDD.

The minimum UE classes for this combination are UL: 64 kbps plus support ~~for~~ for 2 physical channels per TS~~turbo coding,~~; DL: 128 kbps plus support for maximum TB bits 6400, maximum TC TB bits 6400, and maximum 32 TBs per TTI. ~~turbo coding.~~

This is supported in Release '99.

8.2 Combinations on PDSCH, SCCH, PUSCH and PRACH

8.2.1 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.10.3.4.2.1 of [1] for 3.84 Mcps TDD.

~~See subclause 6.10.3.4.2.1 of [1] for 3.84 Mcps TDD, and subclause 6.11.5.4.2.1 of [1] for 1.28 Mcps TDD.~~

~~For 3.84 Mcps TDD t~~The minimum UE classes supporting this combination are UL: 128kbps (See Note), DL: 128kbps plus support for 21 physical channels per frame, maximum TB bits (Alt. 7680), TB CC bits 1280, TB TC bits (Alt. 6400) and (Alt. TTI TB 32).

This is supported in Release '99.

~~For 1.28 Mcps TDD the minimum UE classes supporting this combination are UL: 128kbs plus support for SF 1, DL: 384kbs plus support for (Alt. 8PSK), maximum TB bits (Alt. 7680), TB CC bits 1280, TB TC bits (Alt. 6400) and (Alt. TTI TB 32).~~

~~This is supported in Release '99.~~

8.2.2 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.10.3.4.2.2 of [1] for 3.84 Mcps TDD.

~~For 3.84 Mcps TDD t~~The minimum UE classes supporting this combination are UL: 128kbps (See Note), DL: 384kbps plus support for 29 physical channels per frame, maximum TB bits (Alt. 10240), TB CC bits 1280, and TB TC bits (Alt. 8960).

This is supported in Release '99.

~~For 1.28 Mcps TDD the minimum UE classes supporting this combination are UL: 128kbs plus support for SF 1, DL: 384kbs (with SF 1 option) plus support for maximum TB bits (Alt. 10240), TB CC bits 1280, and TB TC bits (Alt. 8960).~~

~~This is supported in Release '99.~~

8.2.3 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.10.3.4.2.3 of [1] for 3.84 Mcps TDD~~, and subclause 6.11.5.4.2.3 of [1] for 1.28 Mcps TDD.~~

~~For 3.84 Mcps TDD t~~The minimum UE classes supporting this combination are UL: 128kbps (See Note), DL: 2Mbps plus support for 137 physical channels per frame, maximum TB bits 40960 (Alt. 81920), TB CC bits 1280, and TB TC bits 40960 (Alt. 81920).

This is supported in Release '99.

~~For 1.28 Mcps TDD the minimum UE classes supporting this combination are UL: 128kbs plus support for SF 1, DL: 2Mbps plus support for maximum TB bits 40960 (Alt. 81920) and TB CC bits 1280.~~

~~This is supported in Release '99.~~

8.3 Combinations on PDSCH, SCCPCH, DPCH, PUSCH and PRACH

8.3.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.10.3.4.3.1 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: ~~64~~128kbps plus support for maximum CC TB ~~CC~~ bits 1280, and maximum 16 TBs per TTI, 2 physical channels per TS~~,~~; DL: 384kbps plus support for maximum CC TB ~~CC~~ bits 1280, (if the alternative RAB is used, support for maximum TB bits 7680).~~-~~

PS. Assume the DPCH DL, PDSCH and SCCPCH use different TS.

This is supported in Release '99.

8.3.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.10.3.4.3.2 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum CC TB bits 1280, maximum 16 TBs per TTI, and 2 physical channels per TS ~~64kbps plus support for maximum TB CC bits 1280, and 2 physical channels per TS,~~; DL: 384kbps~~-~~ plus support for maximum CC TB bits 1280, 31 physical channels per frame, and plus (if the alternative RAB is used, support for maximum TB bits 10240, maximum TC TB bits 8960, and maximum 48 TBs per TTI).

PS. Assume the DPCH DL, PDSCH and SCCPCH use different TS. ~~plus support for maximum TB CC bits 1280.~~

This is supported in Release '99.

8.3.3 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.10.3.4.3.3 of [1] for 3.84 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum CC TB bits 1280, maximum 16 TBs per TTI, and 2 physical channels per TS; ~~64kbps plus support for maximum TB CC bits 1280, and 2 physical channels per TS, DL: 384kbps plus support for maximum TB CC bits 1280.~~; DL: 2048kbps plus support for maximum TB bits 40960, maximum TC TB bits 40960, and maximum CC TB bits 1280, 139 physical channels per frame, and plus (if the alternative RAB is used, support for maximum TB bits 81920, maximum TC TB bits 81920).~~maximum TB CC bits 1280.~~

This is supported in Release '99.

8.4 Combinations on SCCPCH

8.4.1 Stand – alone signalling RB for PCCH

See subclause 6.10.3.4.4.1 of [1] for 3.84 Mcps TDD.

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release '99

8.4.2 Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.3.4.4.2 of [1] for 3.84 Mcps TDD.~~.~~

The minimum UE class supporting this combination is ~~DL~~DL: 32 kbps plus turbo coding, maximum TB bits 2560, maximum CC TB bits 1280, and maximum TC TB bits 1280.~~: 64 kbps~~.

This is supported in Release '99.

8.4.3 Interactive / Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.10.3.4.4.3 of [1] for 3.84 Mcps TDD.

The minimum UE class supporting this combination is ~~DL: 64 kbps~~; DL: 32 kbps plus turbo coding, maximum TB bits 2560, maximum CC TB bits 2560, and maximum TC TB bits 1280, maximum 48 TFC, and plus (if the alternative RAB is used, support for maximum 16 TBs per TTI, and maximum 64 TFC).~~.~~

This is supported in Release '99.

8.5 Combinations on PRACH

8.5.1 SRB for CCCH + SRB for DCCH

See subclause 6.10.3.4.5.1 of [1] for 3.84 Mcps TDD.

The minimum UE class supporting this combination is UL: 32 kbps.

This is supported by Release '99.

9 Examples of Radio Bearers and Signalling Radio Bearers for 1.28 Mcps TDD

9.1 Combinations on DPCH

9.1.1 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.11.5.4.1.1 of [1] for 1.28 McpsTDD.

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

9.1.2 Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.2 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

9.1.3 Stand-aloneUL:13.6 DL:13.6 kbps SRBs for DCCH

See subclause 6.11.5.4.1.3 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

9.1.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.4 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

9.1.5 Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.5 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

9.1.6 Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.6 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

9.1.7 Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.7 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps.

This is supported in Release 4.

9.1.8 Conversational / speech / UL:6.7 DL: 6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.8 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

9.1.9 Conversational / speech / UL:5.9 DL:5.9 kbps / CS rab + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.9 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

9.1.10 Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.11.5.4.1.10 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

9.1.11 Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

See subclause 6.11.5.4.1.11 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps, DL: 32kbps.

This is supported in Release 4.

9.1.12 Conversational / unknown / UL:28.8 DL:28.8kbps / CS RAB + UL:3.4 DL:3.4kbps SRBs for DCCH

See subclause 6.11.5.4.1.12 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280, DL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280.

This is supported in Release 4.

9.1.13 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.13 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps, DL: 32kbps plus support for turbo coding, maximum TB bits 2560 (Alt. 3840) and TB TC bits 1280 (Alt. 2560).

This is supported in Release 4.

9.1.14 Conversational / unknown / UL:32 DL: 32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.14 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 1280 (Alt. 2560) and TB TC bits 640 (Alt. 1280), DL: 32kbps plus support for turbo coding and maximum TB bits 1280(Alt. 2560) and TB TC bits 640 (Alt. 1280).

This is supported in Release 4.

9.1.15 Streaming / unknown / UL:14.4 DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.15 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 1280 and TB TC bits 640, DL: 32kbps plus support for turbo coding, maximum TB bits 1280 and TB TC bits 640.

This is supported in Release 4.

9.1.16 Streaming / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.16 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280; DL: 32kbps plus support for turbo coding, maximum TB bits 2560 and TB TC bits 1280.

This is supported in Release 4.

9.1.17 Streaming / unknown / UL: 57.6 DL: 57.6 kbps / CS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.17 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 32kbps plus support for turbo coding, maximum TB bits 2560, and maximum TC TB bits 2560.

This is supported in Release 4.

9.1.18 Streaming / unknown / UL:0 DL: 64 kbps / CS or PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.18 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32kbps; DL: 32kbps plus support for turbo coding, maximum TB bits 3840, maximum TC TB bits 2560, and maximum 16 TBs per TTI.

This is supported in Release 4.

9.1.19 Streaming / unknown / UL: 64 DL:0 kbps / CS or PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.19 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI; DL: 32kbps.

This is supported in Release 4.

9.1.20 Interactive or background / UL: 32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.23 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps, or alternatively plus support for maximum CC TB bits 1280 if turbo coding is not used; DL: 32kbps plus support for turbo coding plus maximum TC TB bits 640, or alternatively, not support for turbo coding if convolutional coding with rate 1/3 is used.

This is supported in Release 4.

9.1.21 Interactive or background / UL: 64 DL: 8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.24 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 32kbps plus support for turbo coding, maximum TC TB bits 640, or alternatively not support for turbo coding if convolutional coding with rate 1/3 is used.

This is supported in Release 4.

9.1.22 Interactive or background / UL: 32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.25 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps, or (alternatively plus support for maximum CC TB bits 1280 if convolutional coding with rate 1/3 is used instead of turbo coding); DL: 32kbps plus support for turbo coding, maximum TB bits 2560, and maximum TC TB bits 2560.

This is supported in Release 4.

9.1.23 Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.26 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 32kbps plus support for turbo coding, maximum TB bits 2560, and maximum TC TB bits 2560.

This is supported in Release 4.

9.1.24 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.27 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128kbps.

This is supported in Release 4.

9.1.25 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.28 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI, and SF 1; DL: 128kbps.

This is supported in Release 4.

9.1.26 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.29 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128kbps.

This is supported in Release 4.

9.1.27 Interactive or background / UL: 144 DL: 144 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.30 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI, SF 1, and alternatively to spport for 8PSK if QPSK is not used; DL: 128kbps.

This is supported in Release 4.

9.1.28 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.31 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128 kbps plus support for optional SF 1, and (if an alternateive RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400, and maximum 32 TBs per TTI).

This is supported in Release 4.

9.1.29 Interactive or background / UL: 64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.32 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 128 kbps plus maximum TB bits 5120, maximum TC TB bits 5120, SF 1, and 8PSK if QPSK is not used, and (if an alternative RAB is used, support for maximum TB bits 8960, maximum TC TB bits 8960, and maximum 32 TBs per TTI).

This is supported in Release 4.

9.1.30 Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.33 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI, and SF 1; DL: 128 kbps plus maximum TB bits 5120, maximum TC TB bits 5120, optional SF 1, and 8PSK if QPSK is not used, and (if an alternative RAB is used, support for maximum TB bits 8960, maximum TC TB bits 8960, and maximum 32 TBs per TTI).

This is supported in Release 4.

9.1.31 Interactive or background / UL:384 DL:384 kbps / PS RAB +UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.34 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum TB bits 8960, maximum TC TB bits 8960, and maximum 32 TBs per TTI, SF 1, and 8PSK if QPSK is not used, and (if an alternative RAB is used, plus support for maximum TB bits 5120, maximum TC TB bits 5120, and maximum 16 TBs per TTI); DL: 384kbps plus support for SF 1, 8PSK if QPSK is not used, (if an alternative RAB is used, plus support for maximum TB bits 8960, maximum TC TB bits 8960).

This is supported in Release 4.

9.1.32 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.35 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps; DL: 2048kbps plus support for maximum TB bits 40960 and maximum TB TC bits 40960, and SF 1.

This is supported in Release 4.

9.1.33 Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.36 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support for maximum 16 TBs per TTI, and SF 1; DL: 2048kbps plus support for maximum TB bits 40960 and maximum TB TC bits 40960, and SF 1.

This is supported in Release 4.

9.1.34 Interactive or background / UL: 384 DL:2048 kbps / PS RAB+UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.37 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum TB bits 8690, maximum TC TB bits 8690, and maximum 32 TBs per TTI, SF 1, and 8PSK if QPSK is not used, (if an alternative RAB is used, plus support for maximum TB bits 5120, maximum TC TB bits 5120 and maximum 16 TBs per TTI); DL: 2048 kbps plus support for maximum TB bits 40960, maximum TB TC bits 40960.

This is supported in Release 4.

9.1.35 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

See subclause 6.11.5.4.1.38 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps, (alternatively if turbo coding is not used, support for maximum CC TB bits 1280); DL: 32kbps plus support for Turbo coding, maximum TC TB bits 640, and maximum TB bits 1280, or (alternatively, if convolutional coding with rate 1/3 is used instead of turbo coding, support for maxim CC TB bits 1280).

This is supported in Release 4.

9.1.36 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

See subclause 6.11.5.4.1.39 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps, (alternatively, if covolutional coding with rate 1/3 is used instead of turbo coding, support for maximum TC TB bits 1280); DL: 64kbps.

This is supported in Release 4.

9.1.37 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

See subclause 6.11.5.4.1.40 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64kbps plus support of SF 1; DL: 64 kbps.

This is supported in Release 4.

9.1.38 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

See subclause 6.11.5.4.1.41 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support of SF 1; DL: 128 kbps plus support for 8PSK if QPSK is not used.

This is supported in Release 4.

9.1.39 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

See subclause 6.11.5.4.1.42 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support of SF 1; DL: 128kbps plus support of 8PSK if QPSK is not supported, and plus (if an alternative RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400, and maximum 32 TBs per TTI).

This is supported in Release 4.

9.1.40 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

See subclause 6.11.5.4.1.43 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support of SF1; DL: 384 kbps plus support for optional SF 1, 8PSK if QPSK is not used, and (if an alternative RAB is used, support for maximum TB bits 8960, maximum TC TB bits 8960).

This is supported in Release 4.

9.1.41 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

See subclause 6.11.5.4.1.44 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support for maximum 16 TBs per TTI, SF1, and 8PSK if QPSK is not used; DL: 2048 kbps plus support for maximum TB bits 40960, maximum TC TB bits 40960, SF 1, and (if an alternative RAB is used, plus support for maximum TB bits 81920 and maximum TB TC bits 81920).

This is supported in Release 4.

9.1.42 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

See subclause 6.11.5.4.1.45 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps; DL: 64 kbps.

This is supported in Release 4.

9.1.43 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

See subclause 6.11.5.4.1.46 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 32 kbps; DL: 64 kbps plus support for maximum 16 TBs per TTI.

This is supported in Release 4.

9.1.44 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

See subclause 6.11.5.4.1.49 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support of SF1; DL: 64 kbps.

This is supported in Release 4.

9.1.45 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

See subclause 6.11.5.4.1.50 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 64 kbps plus support of SF1, and (if the alternative RAB is used, maximum TB bits 6400, maximum TC TB bits 5120, and maximum 16 TBs per TTI); DL: 128 kbps plus support for 15 physical channels per TS, and (if the alterntive RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 5120).

This is supported in Release 4.

9.1.46 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

See subclause 6.11.5.4.1.51 of [1] for 1.28 Mcps TDD.

The minimum UE classes for this combinations are UL: 64 kbps plus support of SF1; DL: 32 kbps plus support for turbo coding, maximum TB bits 3840, maximum TC TB bits 3840, SF1, and (if the RAB is used, plus support for maximum TB bits 5120, maximum TC TB bits 5120, and maximum 16 TBs per TTI).

This is supported in Release 4.

9.1.47 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

See subclause 6.11.5.4.1.52 of [1] for 1.28 Mcps TDD.

The minimum UE classes for this combination are UL: 64 kbps plus support of SF1; DL: 128kbps plus support for maximum TB bits 5120, maximum TC TB bits 5120, 24 physical channels per subframe, and (if the alternative RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400).

This is supported in Release 4.

9.1.48 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

See subclause 6.11.5.4.1.53 of [1] for 1.28 Mcps TDD.

The minimum UE classes for this combination are UL: 64kbps plus support for support for maximum TB bits 5120, maximum TC TB bits 5120, and maximum 16 TBs per TTI, SF1, and 8PSK if QPSK is not used, and (if the alternative RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400); DL: 128 kbps plus support for support for maximum TB bits 5120, maximum TC TB bits 5120, 24 physical channels per subframe, and (if the RAB is used, plus support for maximum TB bits 6400, maximum TC TB bits 6400).

This is supported in Release 4.

9.1.49 Interactive or background / UL:64 DL:128 kbps / PS RAB + streaming / unknown / UL:0 DL:64 kbps / CS or PS RAB + UL:3.4 DL:3.4kbps SRBs for DCCH

See subclause 6.11.5.4.1.54 of [1] for 1.28 Mcps TDD.

The minimum UE classes for this combination are UL: 64 kbps; DL: 128 kbps plus support for maximum TB bits 6400, maximum TC TB bits 6400, and maximum 32 TBs per TTI, and 24 physical channels per subframe.

This is supported in Release 4.

9.2 Combinations on PDSCH, SCCH, PUSCH and PRACH

9.2.1 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.11.5.4.2.1 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbs plus support for SF 1; DL: 384kbs plus support for (Alt. 8PSK), maximum TB bits (Alt. 7680), TB CC bits 1280, TB TC bits (Alt. 6400) and (Alt. TTI TB 32).

This is supported in Release 4.

9.2.2 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.11.5.4.2.2 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbs plus support for SF 1, DL: 384kbs (with SF 1 option) plus support for maximum TB bits (Alt. 10240), TB CC bits 1280, and TB TC bits (Alt. 8960).

This is supported in Release 4.

9.2.3 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 DL:33.6 kbps SRBs for DCCH, CCCH and BCCH + UL:16.8 DL:16 kbps SRBs for SHCCH

See subclause 6.11.5.4.2.3 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbs plus support for SF 1, DL: 2Mbps plus support for maximum TB bits 40960 (Alt. 81920) and TB CC bits 1280.

This is supported in Release 4.

9.3 Combinations on PDSCH, SCCPCH, DPCH, PUSCH and PRACH

9.3.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + interactive or background / UL:64 DL:256 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.11.5.4.3.1 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum CC TB bits 1280, maximum 16 TBs per TTI, and SF 1 for PUSCH; DL: 384kbps plus support for maximum CC TB bits 1280, 5 TS per subframe, optional SF 1, 8PSK if QPSK is not used for PDSCH, and (if the alternative RAB is used, support for maximum TB bits 7680).

PS. Assume the DPCH DL, PDSCH and SCCPCH use different TS.

This is supported in Release 4.

9.3.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.11.5.4.3.2 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum CC TB bits 1280, maximum 16 TBs per TTI, and SF 1 for PUSCH; DL: 384kbps plus support for maximum CC TB bits 1280, 5 TS per subframe, optional SF 1 for PDSCH, and plus (if the alternative RAB is used, support for maximum TB bits 10240, maximum TC TB bits 8960, and maximum 48 TBs per TTI).

PS. Assume the DPCH DL, PDSCH and SCCPCH use different TS.

This is supported in Release 4.

9.3.3 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:16.8 kbps SRBs for CCCH and SHCCH + DL:33.6 kbps SRBs for CCCH, SHCCH and BCCH

See subclause 6.11.5.4.3.3 of [1] for 1.28 Mcps TDD.

The minimum UE classes supporting this combination are UL: 128kbps plus support for maximum CC TB bits 1280, maximum 16 TBs per TTI, and SF 1 for PUSCH; DL: 2048kbps plus support for maximum TB bits 40960, maximum TC TB bits 40960, and maximum CC TB bits 1280, 5 TS per subframe, optional SF 1 for PDSCH, and plus (if the alternative RAB is used, support for maximum TB bits 81920, maximum TC TB bits 81920).

This is supported in Release 4.

9.4 Combinations on SCCPCH

9.4.1 Stand – alone signalling RB for PCCH

See subclause 6.11.5.4.4.1 of [1] for 1.28 Mcps TDD.

The minimum UE class supporting this combination is DL: 32 kbps.

This is supported in Release 4.

9.4.2 Interactive / Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.11.5.4.4.2 of [1] for 1.28 Mcps TDD.

The minimum UE class supporting this combination is DL: 64 kbps plus support for maximum CC TB bits 1280.

This is supported in Release 4.

9.4.3 Interactive / Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

See subclause 6.11.5.4.4.3 of [1] for 1.28 Mcps TDD.

The minimum UE class supporting this combination is DL: 64 kbps plus support for maximum CC TB bits 2560, and plus (if the alternative RAB is used, support for maximum 16 TBs per TTI, and maximum 64 TFC).

This is supported in Release 4.

9.5 Combinations on PRACH

9.5.1 SRB for CCCH + SRB for DCCH

See subclause 6.11.5.4.5.1 of [1] for 1.28 Mcps TDD.

The minimum UE class supporting this combination is UL: 32 kbps.

This is supported by Release 4.