

TSG-RAN WG1 #20
Busan, Korea
May 21 – May 25, 2001

TSGR1#20(01)0528

Agenda item: R99/Rel-4
Source: QUALCOMM
Title: DSCH coding & multiplexing
Document for: Decision

This contribution discusses the alignment of the core specification and typical radio parameters listed in 3GPP TS 34.108 v3.3.0 (2001-03).

As described in other documents submitted to this meeting there are some mismatches between the core specification and TS 34.108. They are mostly related to the conditions required to enable BTFD and the conditions required to enable BLER measurement and setting of a BLER target.

In addition, we believe that the set of parameters listed in 34.108 for the various DCCH configurations are not sufficient as they do not describe standalone DCCH parameters which would allow the system to associate a BLER target with the DCCH. The current DCCH parameters are such that the DCCH TFS is composed of two TF, one with zero block and the second with one block. The parameters are also such that no TFCI bits are used on the physical channel. Based on the core specification this set of parameters do not allow the system to set a BLER target for the DCCH as the requirements necessary to enable the measurement TrCH BLER are not met (at least one TB per TTI when no TFCI is used).

Although we understand that the set of parameters listed in TS 34.108 do not prevent any other configuration, we believe that the scenario with a standalone DCCH and associated BLER target is important and should be covered under the set of typical radio parameters. This can be done by adding an alternative to the transport blocks size {0, 148} and the first transport format {zero size block, 1x0} as described in the attached draft CR.

We propose that the attached draft CR is endorsed by TSG RAN WG1 and submitted to TSG T WG1 for approval.

CHANGE REQUEST

⌘ **34.108 CR DRAFT** ⌘ ev **-** ⌘ Current version: **3.3.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

Title:	⌘ Typical radio parameter set for standalone DCCH operation		
Source:	⌘ TSG RAN WG1		
Work item code:	⌘ Release'99	Date:	⌘ 25/05/2001
Category:	⌘ F	Release:	⌘ R99
	<i>Use <u>one</u> of the following categories:</i> 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 .		<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Consistency with core specification.		
Summary of change:	⌘ Correction to the standalone DCCH radio parameter set.		
Consequences if not approved:	⌘ Based on current typical radio parameter set it is not possible to associate a BLER target value to the SRB/DCCH. When DCCH is the only transport channel mapped onto a DPCH using the current typical radio parameter set, this prevents the system from using inner and outer loop power control.		

Clauses affected:	⌘ 6.10.2.4.1.1, 6.10.2.4.1.2, 6.10.2.4.1.3		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://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.

6.10.2.4 Typical radio parameter sets

6.10.2.4.1 Combinations on DPCH

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

6.10.2.4.1.1.1 Uplink

6.10.2.4.1.1.1.1 Transport channel parameters

6.10.2.4.1.1.1.1.1 Transport channel parameters for UL:1.7 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	1700	1600	1600	1600
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (alt 0, 148)			
	TFS	TF0, bits	0x148 (alt 1x0)		
		TF1, bits	1x148		
	TTI, ms	80			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
	Uplink; Max number of bits/radio frame before rate matching	65			

6.10.2.4.1.1.1.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

6.10.2.4.1.1.1.2 Physical channel parameters

DPCH Uplink		
	Min spreading factor	256
	Max number of DPDCH data bits/radio frame	150
	Puncturing Limit	1

6.10.2.4.1.1.2 Downlink

6.10.2.4.1.1.2.1 Transport channel parameters

6.10.2.4.1.1.2.1.1 Transport channel parameters for DL:1.7 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	1700	1600	1600	1600
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (<u>alt*1 0, 148</u>)			
	TFS	TF0, bits	0 x148 (<u>alt*1 1x0</u>)		
		TF1, bits	1x148		
	TTI, ms	80			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			

*1: alternative parameters allow for BLER estimation.

6.10.2.4.1.1.2.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

6.10.2.4.1.1.2.2 Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)
	Minimum spreading factor		512
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	4
		Number of data bits/frame	60

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

6.10.2.4.1.2.1 Uplink

6.10.2.4.1.2.1.1 Transport channel parameters

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

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	3400	3200	3200	3200
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (alt 0, 148)			
	TFS	TF0, bits	0x148 (alt 1x0)		
		TF1, bits	1x148		
	TTI, ms	40			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
	Uplink: Max number of bits/radio frame before rate matching	129			
	RM attribute	155-165			

6.10.2.4.1.2.1.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

6.10.2.4.1.2.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	256
	Max number of DPDCH data bits/radio frame	150
	Puncturing Limit	1

6.10.2.4.1.2.2 Downlink

6.10.2.4.1.2.2.1 Transport channel parameters

6.10.2.4.1.2.2.1.1 Transport channel parameters for DL:3.4 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	3400	3200	3200	3200
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (<u>alt*1 0, 148</u>)			
	TFS	TF0, bits	0x148 (<u>alt*1 1x0</u>)		
		TF1, bits	1x148		
	TTI, ms	40			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
	RM attribute	155-165			

*1: alternative parameters allow for BLER estimation.

6.10.2.4.1.2.2.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

6.10.2.4.1.2.2.2 Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)
	Minimum spreading factor		256
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	14
		Number of data bits/frame	210

6.10.2.4.1.3 Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH

6.10.2.4.1.3.1 Uplink

6.10.2.4.1.3.1.1 Transport channel parameters

6.10.2.4.1.3.1.1.1 Transport channel parameters for UL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	13600	12800	12800	12800
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (alt 0, 148)			
	TFS	TF0, bits	0x148 (alt 1x0)		
		TF1, bits	1x148		
	TTI, ms	10			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			
	Uplink: Max number of bits/radio frame before rate matching	516			

6.10.2.4.1.3.1.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

6.10.2.4.1.3.1.2 Physical channel parameters

DPCH Uplink	Min spreading factor	64
	Max number of DPDCH data bits/radio frame	600
	Puncturing Limit	1

6.10.2.4.1.3.2 Downlink

6.10.2.4.1.3.2.1 Transport channel parameters

6.10.2.4.1.3.2.1.1 Transport channel parameters for DL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB	SRB#1	SRB#2	SRB#3	SRB#4
	User of Radio Bearer	RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type	DCCH	DCCH	DCCH	DCCH
	RLC mode	UM	AM	AM	AM
	Payload sizes, bit	136	128	128	128
	Max data rate, bps	13600	12800	12800	12800
	RLC header, bit	8	16	16	16
MAC	MAC header, bit	4	4	4	4
	MAC multiplexing	4 logical channel multiplexing			
Layer 1	TrCH type	DCH			
	TB sizes, bit	148 (<u>alt*1 0, 148</u>)			
	TFS	TF0, bits	0x148 (<u>alt*1 1x0</u>)		
		TF1, bits	1x148		
	TTI, ms	10			
	Coding type	CC 1/3			
	CRC, bit	16			
	Max number of bits/TTI before rate matching	516			

*1: alternative parameters allow for BLER estimation.

6.10.2.4.1.3.2.1.2 TFCS

TFCS size	2
TFCS	SRBs for DCCH = TF0, TF1

6.10.2.4.1.3.2.2 Physical channel parameters

DPCH Downlink	DTX position		N/A (SingleTrCH)
	Minimum spreading factor		128
	DPCCH	Number of TFCI bits/slot	0
		Number of TPC bits/slot	2
		Number of Pilot bits/slot	4
	DPDCH	Number of data bits/slot	34
		Number of data bits/frame	510