TSG RAN Meeting #15 **RP-020015**

Cheju, Korea, 5 - 8 March 2002

Title: **CRs (R'99 and Rel-4 Category A) to TS 25.102**

Source: **TSG RAN WG4**

Agenda Item: **7.4.3**

RAN4 Tdoc	Spec	CR	Rev	Phase	Title	Cat	Curr Ver	New Ver
R4-020064	25.102	88		R99	UL reference measurement channel (12.2 kbps) puncturing rate and bit length correction	F	3.9.0	3.10.0
R4-020065	25.102	89		Rel-4	UL reference measurement channel (12.2 kbps) puncturing rate and bit length correction	A	4.3.0	4.4.0
R4-020373	25.102	86	1	R99	Replacement of Block STTD by Space Code Transmit Diversity (SCTD)	F	3.9.0	3.10.0
R4-020374	25.102	87	1	Rel-4	Replacement of Block STTD by Space Code Transmit Diversity (SCTD)	A	4.3.0	4.4.0

3GPP TSG RAN WG4 Meeting #21 **R4-020373**

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v4

CHANGE REQUEST

⌘ **25.102** **CR** **86** ⌘ ev **1** ⌘ Current version: **3.9.0** ⌘

*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 **X** Radio Access Network ☐ Core Network ☐

Title:	⌘	Replacement of Block STTD by Space Code Transmit Diversity (SCTD)
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 1/2/2002
Category:	⌘ **F**	***Release:*** ⌘ R99

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)

Reason for change:	⌘	1. The Block STTD scheme is no longer applied. It was replaced by SCTD in WG1, WG2, and WG3 specifications. 2. The specification incorrectly references the definition of a parameter, due to the definition being moved to a different specification. The definition of path loss weighting parameter α has been moved from 25.224 to 25.331.
Summary of change:	⌘	Item 1 Block STTD replacement by SCTD: Removal of references to Block STTD and replacing it by SCTD. Item 2 location of parameter definition reference: Correct the reference so that the path loss weighting parameter definition can be found.
Consequences if not approved:	⌘	Item 1 Block STTD replacement by SCTD: Inconsistencies between specifications. Item 2 location of parameter definition reference: The specification will reference a non-existing definition and the parameter will be undefined Isolated Impact Analysis: Item 1 Block STTD replacement by SCTD: UEs supporting Block STTD transmit diversity will operate in a network supporting SCTD transmit diversity, but with possibly degraded performance when the network is applying transmit diversity. UEs supporting SCTD transmit diversity will operate in a network supporting Block STTD transmit diversity, but with possibly degraded performance when the network is applying transmit diversity. Item 2 location of parameter definition reference: No impact to the UE or the network.

Clauses affected:	⌘	3.3 Abbreviations, 6.41, 8.4.1
Other specs	⌘ ☐	Other core specifications ⌘ 25.221, 25.224, 25.225, 25.331, 25.432,

affected:			25.433
	X	Test specifications	34.108, 34.122
		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.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BS	Base Station
CW	Continuous wave (unmodulated signal)
DL	Down link (forward link)
DPCH	Dedicated physical channel
DPCH_Ec	Average energy per PN chip for DPCH
$\frac{DPCH_Ec}{I_{or}}$	The ratio of the average energy per PN chip of the DPCH to the total transmit power spectral density of the downlink at the BS antenna connector
$\frac{\Sigma\ DPCH_Ec}{I_{or}}$	The ratio of the sum of DPCH_Ec for one service in case of multicode to the total transmit power spectral density of the downlink at the BS antenna connector
EIRP	Effective Isotropic Radiated Power
FDD	Frequency Division Duplexing
FER	Frame Error Ratio
Fuw	Frequency of unwanted signal. This is specified in bracket in terms of an absolute frequency(s) or frequency offset from the assigned channel frequency.
Ioc	The power spectral density of a band limited white noise source (simulating interference from other cells) as measured at the UE antenna connector.
Ior	The total transmit power spectral density of the downlink at the BS antenna connector
$\hat{I}_{or}$	The received power spectral density of the downlink as measured at the UE antenna connector
PPM	Parts Per Million
RSSI	Received Signal Strength Indicator
SCTD	Space Code Transmit Diversity
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UE	User Equipment
UL	Up link (reverse link)
UTRA	UMTS Terrestrial Radio Access

<next changed section>

6.4 Output power dynamics

Power control is used to limit the interference level.

6.4.1 Uplink power control

Uplink power control is the ability of the UE transmitter to sets its output power in accordance with measured downlink path loss, values determined by higher layer signalling and path loss weighting parameter α as defined in TS ~~25.224~~25.331. The output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off $\alpha = 0.22$ and a bandwidth equal to the chip rate.

<next changed section>

8.4 Base station transmit diversity mode

8.4.1 Demodulation of BCH in SCTD ~~Block STTD~~ mode

The performance requirement of BCH is determined by the maximum Block Error Rate (BLER). The BLER is specified for the BCH. BCH is mapped into the Primary Common Control Physical Channel (P-CCPCH).

8.4.1.1 Minimum requirement

For the parameters specified in Table 8.10 the BLER should not exceed the BLER specified in Table 8.11.

NOTE: This requirement doesn't need to be tested.

Table 8.10: P-CCPCH parameters in multipath Case 1 channel

Parameters	Unit	Test 1
$\frac{PCCPCH_E_C}{I_{or}}$	DB	-3
I	dBm/3.84 MHz	-60
Information Data Rate	Kbps	12.3

Table 8.11: Performance requirements in multipath Case 1 channel

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	8.4	10^{-2}

3GPP TSG RAN WG4 Meeting #21 **R4-020065**

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v6.1

CHANGE REQUEST

⌘ **25.102** **CR** **89** ⌘ **rev** **-** ⌘ Current version: **4.3.0** ⌘

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

Title:	⌘	UL reference measurement channel (12.2 kbps) puncturing rate and bit length correction
Source:	⌘	RAN WG4
Work item code:	⌘	TEI
Date:	⌘	1/2/2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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

Reason for change:	⌘	The reference measurement channel puncturing rate and bit length as stated in Table A.1 and Figure A.1 and are not in agreement with the time slot format defined in 25.221 Table 5b as they should be.
Summary of change:	⌘	Correct the values in Table A.1 and replace Figure A.1 to be in agreement with the current time slot format requiement.
Consequences if not approved:	⌘	The Table A.1 and Figure A.1 will contain outdated and incorrect information which is in direct conflict with the requirements in 25.221. Isolated Impact Analysis: Correction to a function where the specification was: • Containing some contradictions relative to another previously updated specification (25.221). Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	A.2.1		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	34.108, 34.122
Other comments:	⌘			

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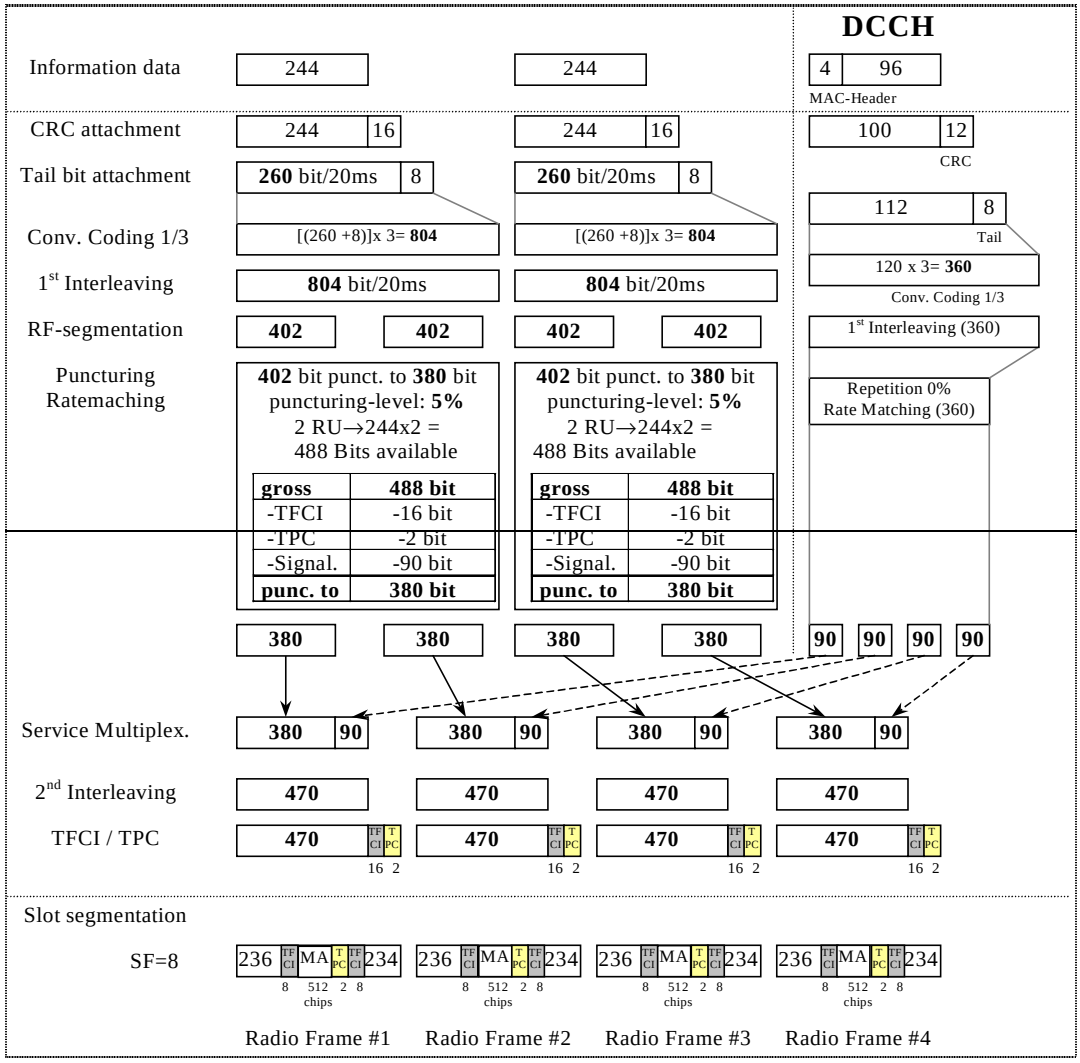
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

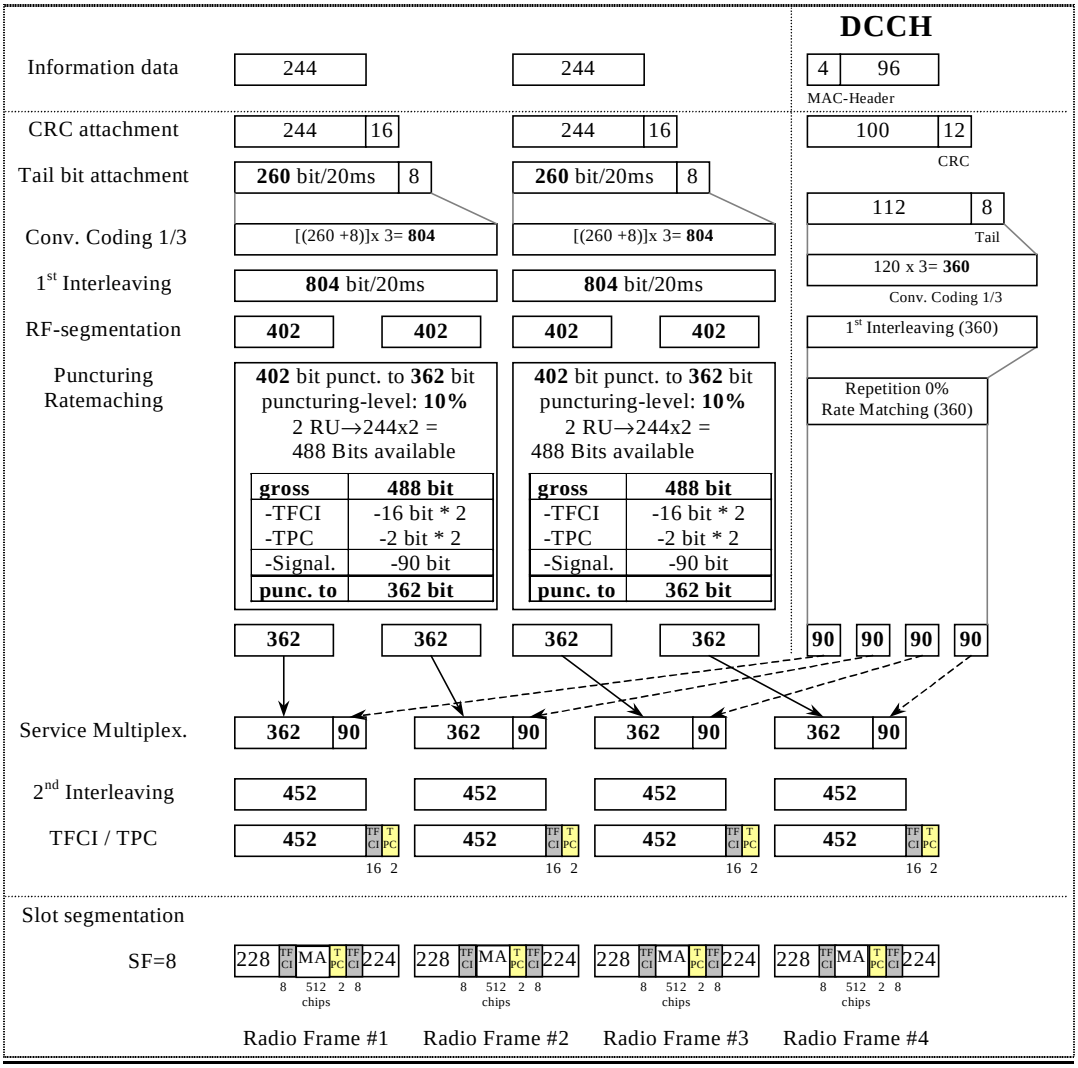
A.2.1 UL reference measurement channel (12.2 kbps)

A.2.1.1 3.84 Mcps TDD Option

Table A.1

Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	2 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH / DCCH	~~5~~10% / 0%


DCCH
Information data
244
244
4
96
MAC-Header
CRC attachment
244
16
244
16
100
12
CRC
Tail bit attachment
260 bit/20ms
8
260 bit/20ms
8
112
8
Tail
Conv. Coding 1/3
[(260 +8)]x 3= 804
[(260 +8)]x 3= 804
120 x 3= 360
Conv. Coding 1/3
1st Interleaving
804 bit/20ms
804 bit/20ms
RF-segmentation
402
402
402
402
1st Interleaving (360)
Puncturing
Ratematching
402 bit punct. to 380 bit
puncturing-level: 5%
2 RU→244x2 =
488 Bits available
402 bit punct. to 380 bit
puncturing-level: 5%
2 RU→244x2 =
488 Bits available
Repetition 0%
Rate Matching (360)
gross 488 bit
-TFCI -16 bit
-TPC -2 bit
-Signal. -90 bit
punc. to 380 bit
gross 488 bit
-TFCI -16 bit
-TPC -2 bit
-Signal. -90 bit
punc. to 380 bit
380
380
380
380
90
90
90
90
Service Multiplex.
380
90
380
90
380
90
380
90
2nd Interleaving
470
470
470
470
TFCI / TPC
470
470
470
470
TFCI
TPC
16 2
Slot segmentation
SF=8
236
TFCI
MA
TPC
TFCI
234
8 512 2 8
chips
Radio Frame #1
Radio Frame #2
Radio Frame #3
Radio Frame #4


DCCH
Information data
244
244
4
96
MAC-Header
CRC attachment
244
16
244
16
100
12
CRC
Tail bit attachment
260 bit/20ms
8
260 bit/20ms
8
112
8
Tail
Conv. Coding 1/3
[(260 +8)]x 3= 804
[(260 +8)]x 3= 804
120 x 3= 360
Conv. Coding 1/3
1st Interleaving
804 bit/20ms
804 bit/20ms
RF-segmentation
402
402
402
402
1st Interleaving (360)
Puncturing
Ratematching
402 bit punct. to 362 bit puncturing-level: 10%
2 RU→244x2 = 488 Bits available
gross 488 bit
-TFCI -16 bit * 2
-TPC -2 bit * 2
-Signal. -90 bit
punc. to 362 bit
402 bit punct. to 362 bit puncturing-level: 10%
2 RU→244x2 = 488 Bits available
gross 488 bit
-TFCI -16 bit * 2
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-Signal. -90 bit
punc. to 362 bit
Repetition 0%
Rate Matching (360)
362
362
362
362
90
90
90
90
Service Multiplex.
362
90
362
90
362
90
362
90
2nd Interleaving
452
452
452
452
TFCI / TPC
452
452
452
452
TFCI
TPC
16 2
Slot segmentation
SF=8
228
TFCI
MA
TPC
TFCI
224
8 512 2 8
chips
Radio Frame #1
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Radio Frame #3
Radio Frame #4

Figure A.1

3GPP TSG RAN WG4 Meeting #21 **R4-020064**

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v6.1

CHANGE REQUEST

⌘ **25.102** **CR** **88** ⌘ **rev** **-** ⌘ Current version: **3.9.0** ⌘

*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:	⌘	UL reference measurement channel (12.2 kbps) puncturing rate and bit length correction
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 1/2/2002
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
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Use one of the following releases:

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R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The reference measurement channel puncturing rate and bit length as stated in Table A.1 and Figure A.1 and are not in agreement with the time slot format defined in 25.221 Table 5b as they should be.
Summary of change:	⌘	Correct the values in Table A.1 and replace Figure A.1 to be in agreement with the current time slot format requiement.
Consequences if not approved:	⌘	The Table A.1 and Figure A.1 will contain outdated and incorrect information which is in direct conflict with the requirements in 25.221. Isolated Impact Analysis: Correction to a function where the specification was: • Containing some contradictions relative to another previously updated specification (25.221). Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	A.2.1		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	34.108, 34.122
Other comments:	⌘			

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A.2.1 UL reference measurement channel (12.2 kbps)

Table A.1

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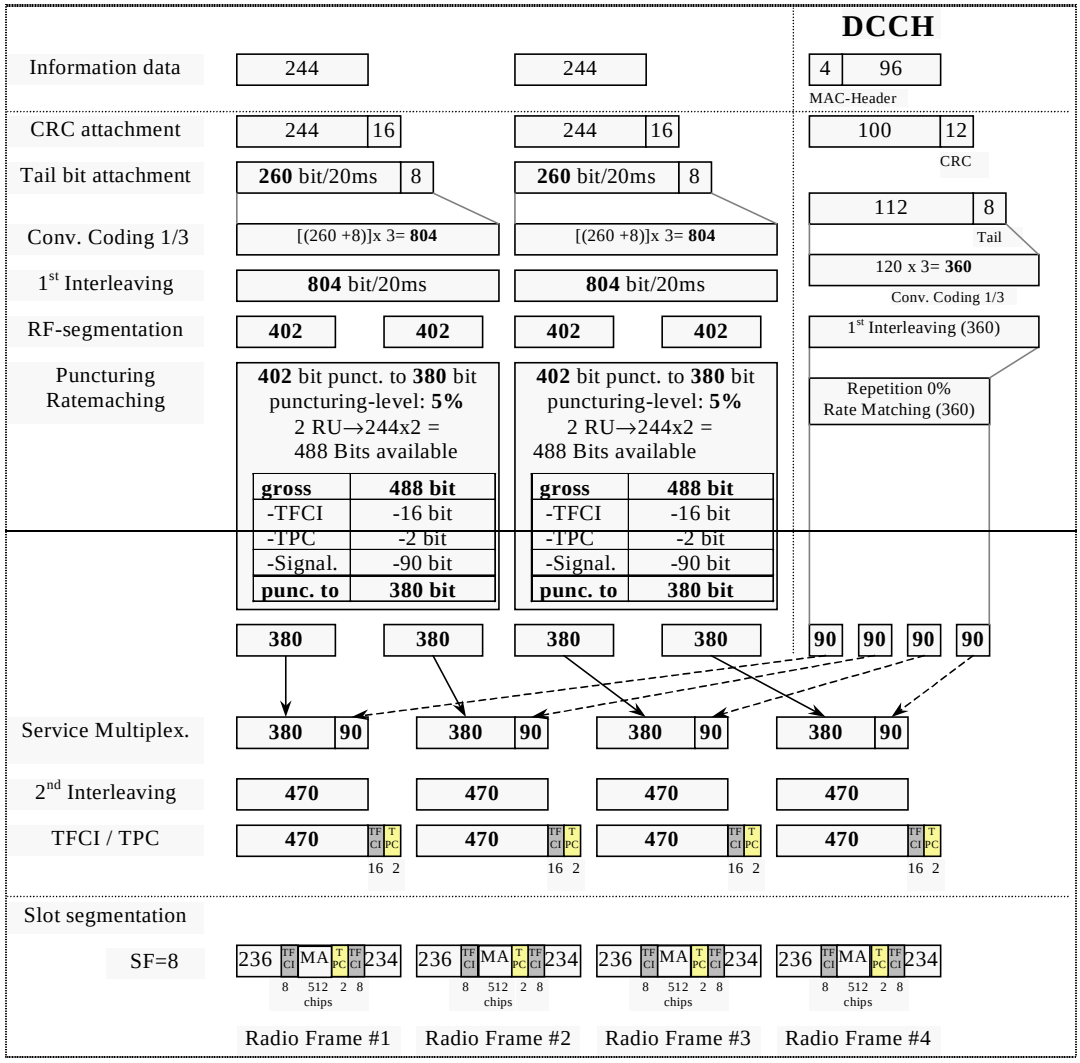
Puncturing level at Code rate 1/3 : DCH / DCCH	10~~5~~% / 0%


DCCH
Information data
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244
4
96
MAC-Header
CRC attachment
244
16
244
16
100
12
CRC
Tail bit attachment
260 bit/20ms
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punc. to 380 bit
380
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Service Multiplex.
380
90
380
90
380
90
380
90
2nd Interleaving
470
470
470
470
TFCI / TPC
470
470
470
470
TFCI
TPC
16 2
Slot segmentation
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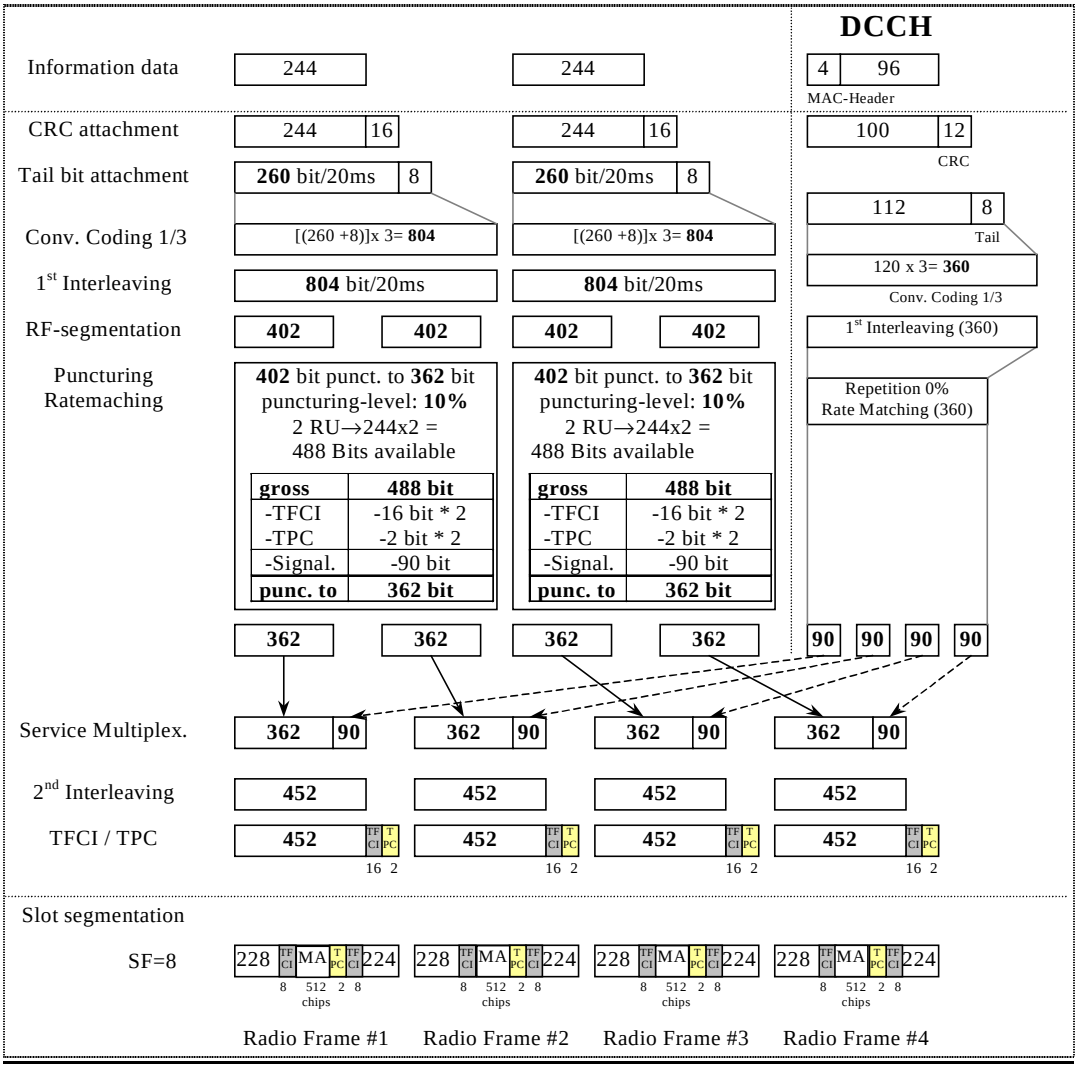
236
TFCI
MA
TPC
TFCI
234
8 512 2 8
chips
Radio Frame #1
Radio Frame #2
Radio Frame #3
Radio Frame #4


DCCH
Information data
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Tail bit attachment
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punc. to 362 bit
Repetition 0%
Rate Matching (360)
362
362
362
362
90
90
90
90
Service Multiplex.
362
90
362
90
362
90
362
90
2nd Interleaving
452
452
452
452
TFCI / TPC
452
452
452
452
TFCI
TPC
16 2
Slot segmentation
SF=8
228
TFCI
MA
TPC
TFCI
224
8 512 2 8
chips
Radio Frame #1
Radio Frame #2
Radio Frame #3
Radio Frame #4

Figure A.1

3GPP TSG RAN WG4 Meeting #21 **R4-020374**

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v4

CHANGE REQUEST

⌘ **25.102** **CR** **87** ⌘ **rev** **1** ⌘ Current version: **4.3.0** ⌘

*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 **X** Radio Access Network ☐ Core Network ☐

Title:	⌘	Replacement of Block STTD by Space Code Transmit Diversity (SCTD)
Source:	⌘	RAN WG4
Work item code:	⌘	TEI
Date:	⌘	1/2/2002
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
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Use one of the following releases:

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REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	1. The Block STTD scheme is no longer applied. It was replaced by SCTD in WG1, WG2, and WG3 specifications. 2. The specification incorrectly references the definition of a parameter, due to the definition being moved to a different specification. The definition of path loss weighting parameter α has been moved from 25.224 to 25.331.
Summary of change:	⌘	Item 1 Block STTD replacement by SCTD: Removal of references to Block STTD and replacing it by SCTD. Item 2 location of parameter definition reference: Correct the reference so that the path loss weighting parameter definition can be found.
Consequences if not approved:	⌘	Item 1 Block STTD replacement by SCTD: Inconsistencies between specifications. Item 2 location of parameter definition reference: The specification will reference a non-existing definition and the parameter will be undefined Isolated Impact Analysis: Item 1 Block STTD replacement by SCTD: UEs supporting Block STTD transmit diversity will operate in a network supporting SCTD transmit diversity, but with possibly degraded performance when the network is applying transmit diversity. UEs supporting SCTD transmit diversity will operate in a network supporting Block STTD transmit diversity, but with possibly degraded performance when the network is applying transmit diversity. Item 2 location of parameter definition reference: No impact to the UE or the network.

Clauses affected:	⌘	3.3 Abbreviations, 6.41, 8.4.1
Other specs	⌘ ☐	Other core specifications ⌘ 25.221, 25.224, 25.225, 25.331, 25.432,

affected:			25.433
	X	Test specifications	34.108, 34.122
		O&M Specifications	
Other comments: ⌘			

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3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ACIR	Adjacent Channel Interference Ratio
ACLR	Adjacent Channel Leakage power Ratio
ACS	Adjacent Channel Selectivity
BS	Base Station
CW	Continuous wave (unmodulated signal)
DL	Down link (forward link)
DPCH	Dedicated physical channel
DPCH_Ec	Average energy per PN chip for DPCH
$\frac{DPCH_Ec}{I_{or}}$	The ratio of the average energy per PN chip of the DPCH to the total transmit power spectral density of the downlink at the BS antenna connector
$\frac{\Sigma DPCH_Ec}{I_{or}}$	The ratio of the sum of DPCH_Ec for one service in case of multicode to the total transmit power spectral density of the downlink at the BS antenna connector
EIRP	Effective Isotropic Radiated Power
FDD	Frequency Division Duplexing
FER	Frame Error Ratio
Fuw	Frequency of unwanted signal. This is specified in bracket in terms of an absolute frequency(s) or frequency offset from the assigned channel frequency.
Ioc	The power spectral density of a band limited white noise source (simulating interference from other cells) as measured at the UE antenna connector.
Ior	The total transmit power spectral density of the downlink at the BS antenna connector
$\hat{I}_{or}$	The received power spectral density of the downlink as measured at the UE antenna connector
PPM	Parts Per Million
RSSI	Received Signal Strength Indicator
SCTD	Space Code Transmit Diversity
SIR	Signal to Interference ratio
TDD	Time Division Duplexing
TPC	Transmit Power Control
UE	User Equipment
UL	Up link (reverse link)
UTRA	UMTS Terrestrial Radio Access

<next changed section>

6.4.1 Power control

6.4.1.1 3.84 Mcps option

Uplink power control is the ability of the UE transmitter to sets its output power in accordance with measured downlink path loss, values determined by higher layer signalling and path loss weighting parameter α as defined in TS 25.331 ~~25.224~~. The output power is defined as the average power of the transmit timeslot, and is measured with a filter that has a Root-Raised Cosine (RRC) filter response with a roll off $\alpha = 0.22$ and a bandwidth equal to the chip rate.

<next changed section>

8.4 Base station transmit diversity mode for 3.84 Mcps TDD Option

8.4.1 Demodulation of BCH in SCTD ~~Block STTD~~ mode

The performance requirement of BCH is determined by the maximum Block Error Rate (BLER). The BLER is specified for the BCH. BCH is mapped into the Primary Common Control Physical Channel (P-CCPCH).

8.4.1.1 Minimum requirement

For the parameters specified in Table 8.10 the BLER should not exceed the BLER specified in Table 8.11.

NOTE: This requirement doesn't need to be tested.

Table 8.10: P-CCPCH parameters in multipath Case 1 channel

Parameters	Unit	Test 1
$\frac{PCCPCH_E_c}{I_{or}}$	dB	-3
I	dBm/3.84 MHz	-60
Information Data Rate	Kbps	12.3

Table 8.11: Performance requirements in multipath Case 1 channel

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	8.4	10^{-2}