Title   **CRs (Rel-4 and Rel-5 Category A) to TS 25.102**
Source   **TSG RAN WG4**
Agenda Item   **7.4.4**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-021559	25.102	129		F	Rel-4	4.6.0	Introduction of Rel-5 clarifications and small corrections in Rel-4	TEI4
R4-021576	25.102	130		F	Rel-4	4.6.0	Name correction of logical and transport channels	TEI4
R4-021577	25.102	131		A	Rel-5	5.2.0	Name correction of logical and transport channels	TEI4

CR-Form-v7

CHANGE REQUEST

⌘　　**25.102** CR **129**　⌘**rev**　　⌘ Current version: **4.6.0**　⌘

*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 ☐　　Core Network ☐

Title: ⌘	Introduction of Rel-5 clarifications and small corrections in Rel-4
Source: ⌘	RAN WG4
Work item code:⌘	TEI4 　　　　　　　　　　　　　　　*Date:* ⌘ 26/11/2002

Category: ⌘ **F**	*Release:* ⌘ Rel-4

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: ⌘	Before RAN#17, CRs considered as *''non-essential''* were only agreed for Rel-5 in RAN4. It was agreed that such corrections could be introduced into Rel-4 as well. This CR proposes to apply to Rel-4 all already agreed *''non-essential''* Rel-5 CRs that are applicable to Rel-4.
Summary of change:⌘	Corrections presented in the following CRs for Rel-5 are proposed for Rel-4: - Removal of "AFC on" condition for frequency stability requirement (CR108) - Update of reference to ITU-R recommendation SM.329-9 (CR125)
Consequences if not approved: ⌘	Rel-4 and Rel-5 specifications are not inlined with respect to issues that are covered in both releases. **Isolated Impact Analysis:** This CR has no impact on UE-Node B interworking since the proposed corrections are clarification of the standard.

Clauses affected: ⌘	6.3, 6.6.3

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

Other comments: ⌘	No corresponding Rel-5 CR since corrections were already agreed for Rel-5.

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.

6.3 UE frequency stability

The UE modulated carrier frequency shall be accurate to within ±0.1 PPM observed over a period of one timeslot compared to carrier frequency received from the BS. These signals will have an apparent error due to BS frequency error and Doppler shift. In the later case, signals from the BS must be averaged over sufficient time that errors due to noise or interference are allowed for within the above ±0.1PPM figure. The UE shall use the same frequency source for both RF frequency generation and the chip clock.

Table 6.2: ~~void~~Frequency stability

~~AFC~~	~~Frequency stability~~
~~ON~~	~~within ± 0.1 PPM~~

---NEXT SECTION---

6.6.3   Spurious emissions

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emission, intermodulation products and frequency conversion products, but exclude out of band emissions.

The frequency boundary and the detailed transitions of the limits between the requirement for out band emissions and spectrum emissions are based on ITU-R Recommendations SM.329-98.

CR-Form-v7

CHANGE REQUEST

⌘ **25.102** CR **130** ⌘**rev** ⌘ Current version: **4.6.0** ⌘

*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 ☐ Core Network ☐

Title: ⌘	Name correction of logical and transport channels
Source: ⌘	RAN WG4
Work item code: ⌘	TEI4 ***Date:*** ⌘ 26/11/2002

Category: ⌘ **F**   ***Release:*** ⌘ Rel-4

Use one of the following categories:	*Use one of the following releases:*
F *(correction)*	2 *(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	R96 *(Release 1996)*
B *(addition of feature),*	R97 *(Release 1997)*
C *(functional modification of feature)*	R98 *(Release 1998)*
D *(editorial modification)*	R99 *(Release 1999)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Rel-4 *(Release 4)*
	Rel-5 *(Release 5)*
	Rel-6 *(Release 6)*

Reason for change: ⌘	No clear distinction between logical and transport channels. Punctering levels and code rates are different for the data and control part of the transport channel.
Summary of change: ⌘	Referencing the DCH of the DTCH and the DCH of the DCCH instead of DCCH and DCH in general for punctering levels and coding rates.
Consequences if not approved: ⌘	Incorrect description and inconsistency with respect to WG1 specifications. **Isolated impact analysis:** The correction has no impact on UE-BS interworking.

Clauses affected: ⌘	A.2

Other specs affected: ⌘	Y	N		
	X		Other core specifications ⌘	25.105 in CR129
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	Equivalent CRs in other Releases: CR131 cat. A to 25.102 v5.2.0

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.

Annex A (normative): Measurement channels

A.1 General

A.2 Reference measurement channel

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 of the DTCH / DCH of the DCCH	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 | 1st Interleaving (360) |

| RF-segmentation | **402** | **402** | **402** | **402** | Repetition 0% Rate Matching (360) |

Puncturing Ratemaching

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
-TPC	-2 bit * 2
-Signal.	-90 bit
punc. to	**362 bit**

| **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** TFCI TPC | **452** TFCI TPC | **452** TFCI TPC | **452** TFCI TPC |
16 2

Slot segmentation

| SF=8 | 228 TFCI MA TPC TFCI 224 | 228 TFCI MA TPC TFCI 224 | 228 TFCI MA TPC TFCI 224 | 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

A.2.1.2   1.28 Mcps TDD Option

Table A.1A

Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	1TS (1*SF8) = 2RU/5ms
Midamble	144
Interleaving	20 ms
Power control	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
4 Bit reserved for future use (place of SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate 1/3 : DCH of the DTCH / DCH of the DCCH	33% / 33%

Information Data | 244 | 244 | MAC-Header 4 | 96 | DCCH

CRC attachement | 244 | 16 | 244 | 16 | 100 | 12

Tail bit attachement | 260bit/20ms | 8 | 260bit/20ms | 8 | 112 | 8

Conv. Coding 1/3 | (260+8)*3=804 | (260+8)*3=804 | (112+8)*3=360

1st Interleaving | 804bit/20ms | 804bit/20ms | 360bit

RF-Segmentation | 402 | 402 | 402 | 402

Rate Matching

402 bit puncturing to 268 bit
Puncturing Level: 33%
4 RU = 88 * 4 = 352 Bits available

gross	352 bit
- TFCI	- 16 bit
- TPC	- 4 bit
- Reserved	- 4 bit
- Signalling	- 60 bit
puncturing to	268 bit

402 bit puncturing to 268 bit
Puncturing Level: 33%
4 RU = 88 * 4 = 352 Bits available

gross	352 bit
- TFCI	- 16 bit
- TPC	- 4 bit
- Reserved	- 4 bit
- Signalling	- 60 bit
puncturing to	268 bit

Puncturing Level: 33%
Rate Matching (240)

268 | 268 | 268 | 268 | 60 | 60 | 60 | 60

Service Multiplexing | 268 | 60 | 268 | 60 | 268 | 60 | 268 | 60

2st Interleaving | 328 | 328 | 328 | 328

TFCI, TPC and SS | 328 | 16 | 8 | 328 | 16 | 8 | 16 | 8 | 328 | 16 | 8

Physical Channel Mapping | 176 | 176 | 176 | 176 | 176 | 176 | 176 | 176

Slot segmentation | SF=8

84 | 144 chips | 80 ...
TFCI TFCI
TPC & Reserved

Sub Frame #1 | Sub Frame #2 | Sub Frame #3 | Sub Frame #4 | Sub Frame #5 | Sub Frame #6 | Sub Frame #7 | Sub Frame #8

Figure A.1A

A.2.2   DL reference measurement channel (12.2 kbps)

A.2.2.1   3.84 Mcps TDD Option

TableA.2

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

Figure A.2

A.2.2.2   1.28 Mcps TDD Option

Table A.2A

Parameter	Value
Information data rate	12.2 kbps
RU's allocated	1TS (2*SF16) = 2RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
Synchronisation Shift (SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate 1/3: DCH of the DTCH / DCH of the DCCH	33% / 33%

Figure A.2A

A.2.3   DL reference measurement channel (64 kbps)

A.2.3.1   3.84 Mcps TDD Option

Table A.3

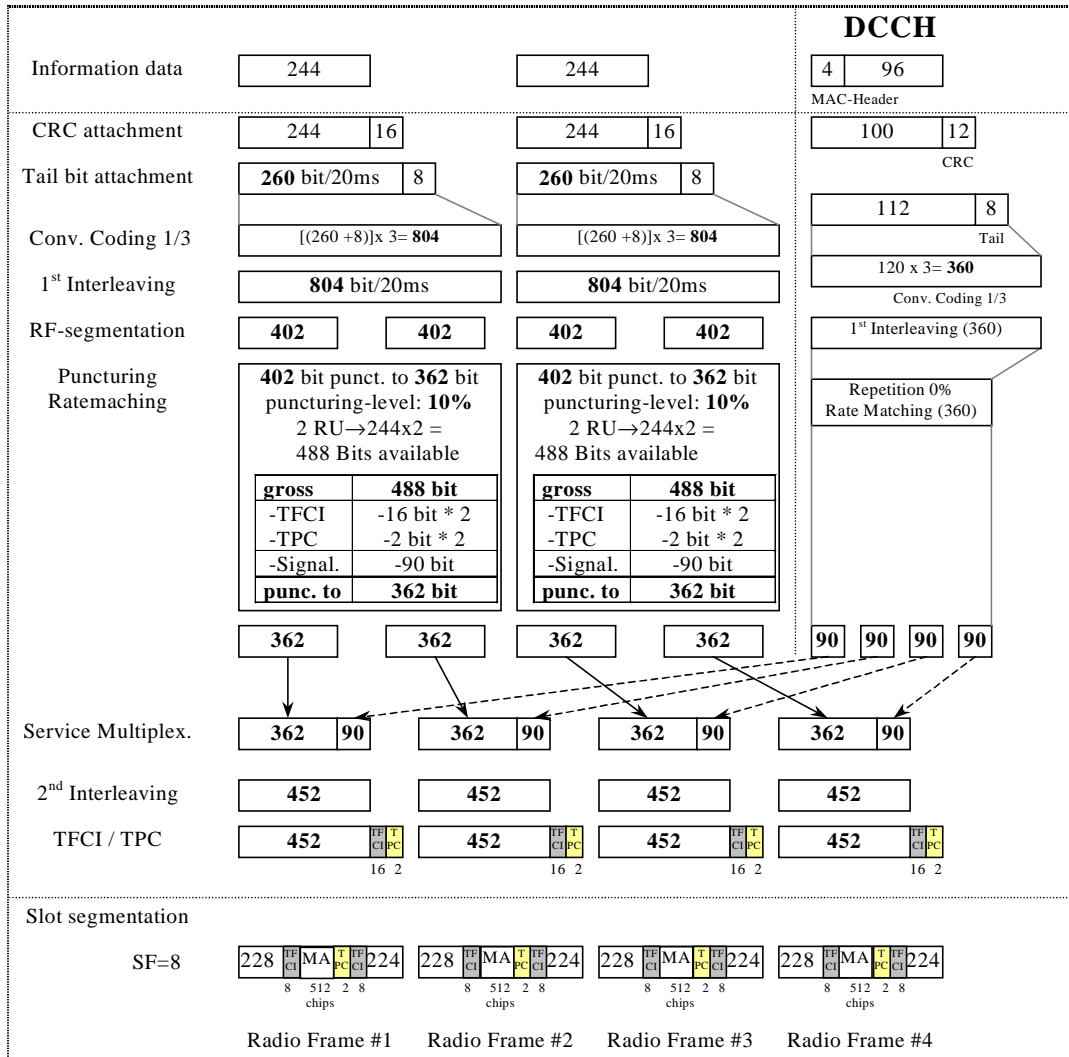| Parameter	Value
Information data rate	64 kbps
RU´s allocated	5 codes SF16 = 5RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate : 1/3 DCH of the DTCH / ½ DCH of the DCCH	41.1% / 10%

Figure A.3

A.2.3.2 1.28 Mcps TDD Option

Table A.3A

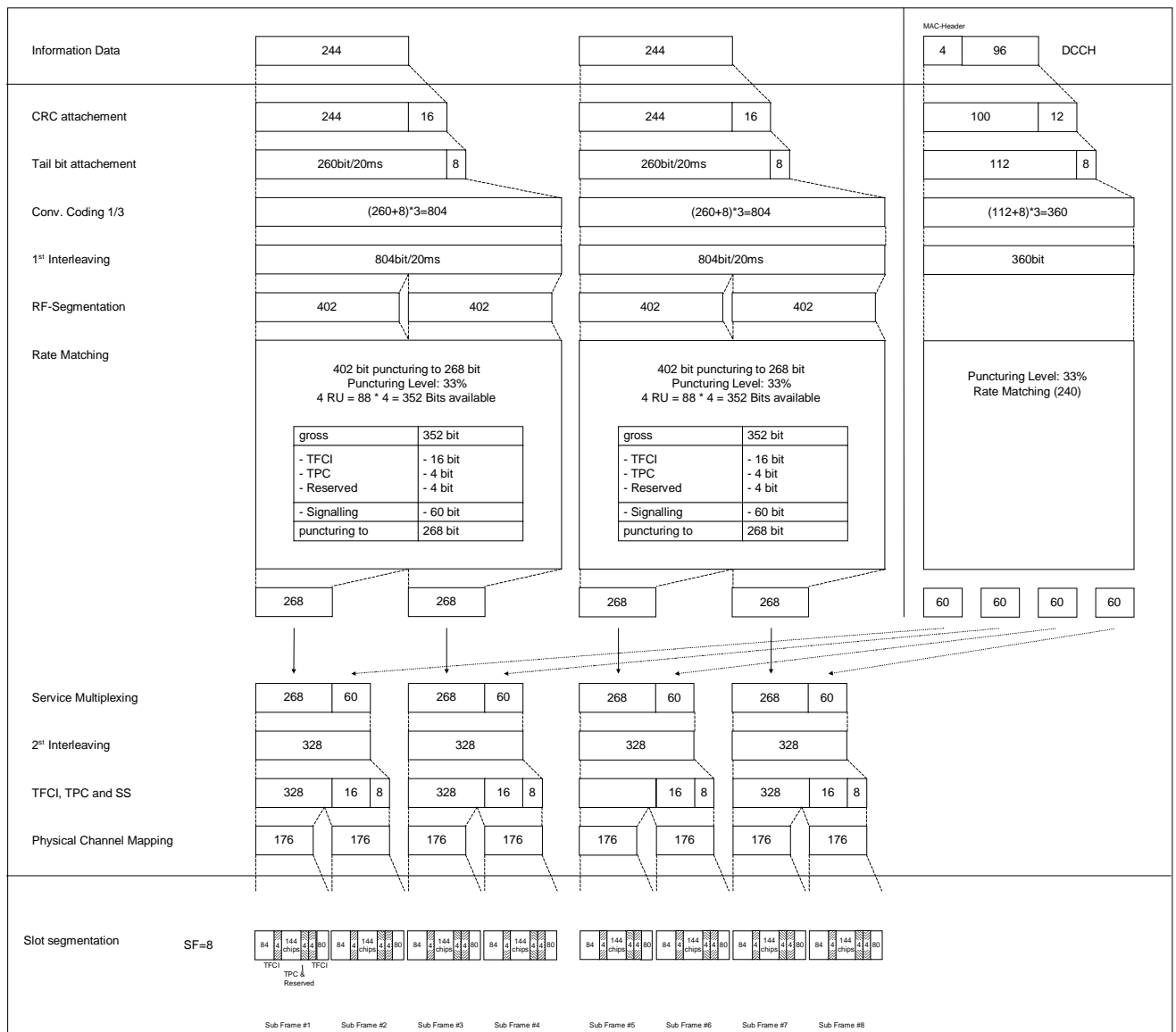| Parameter	Value
Information data rate	64 kbps
RU's allocated	1TS (8*SF16) = 8RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
Synchronisation Shift (SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	32% / 0

Figure A.3A

A.2.4   DL reference measurement channel (144 kbps)

A.2.4.1   3.84 Mcps TDD Option

Table A.4

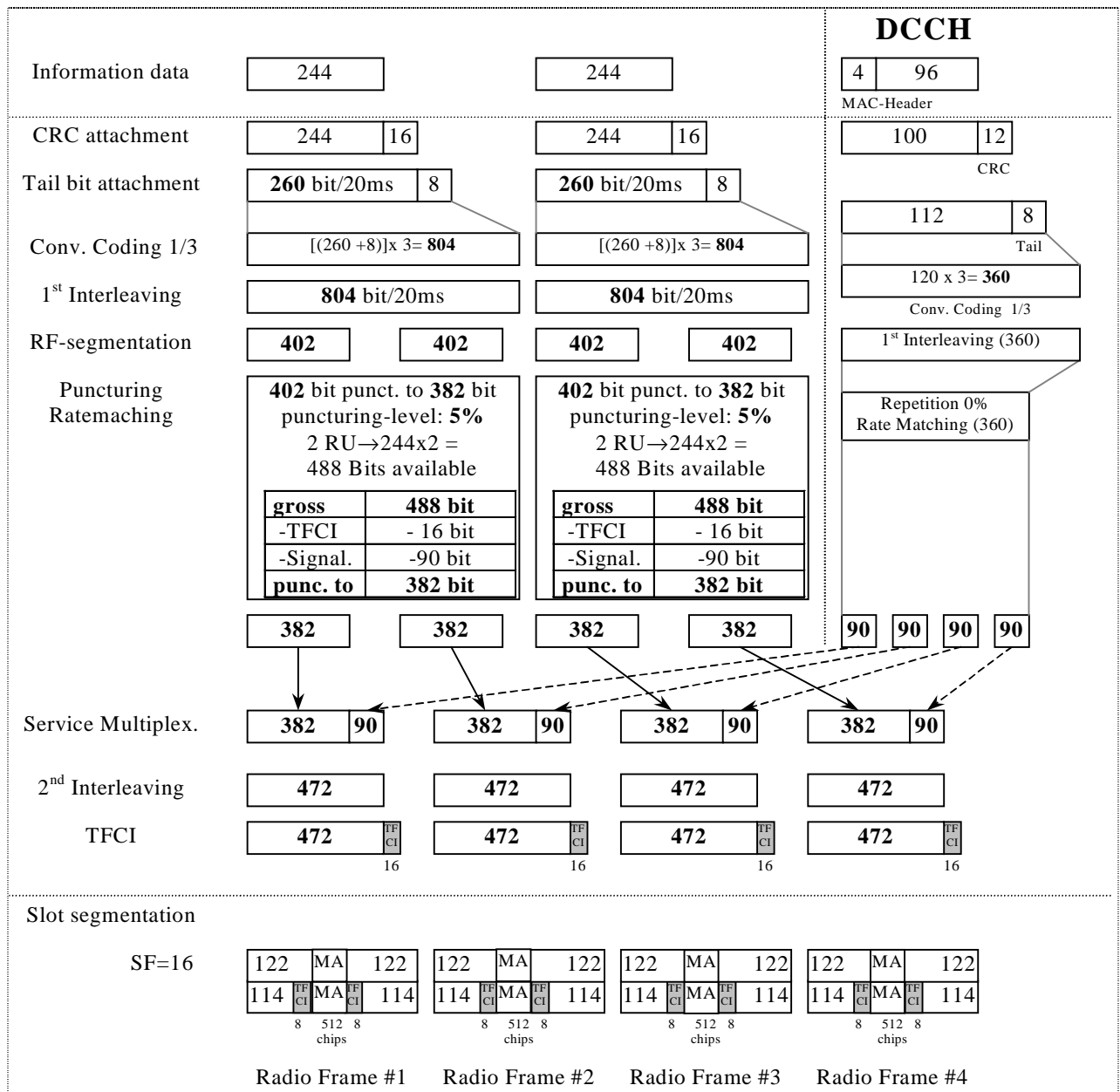| Parameter	Value
Information data rate	144 kbps
RU´s allocated	9 codes SF16 = 9RU
Midamble	256 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	44.5% / 16.6%

Information data	2880	2880	4	96

MAC-Header

CRC attachment | 2880 | 16 | 2880 | 16 | 100 | 12

CRC

Turbo Coding 1/3 | [(1440 x 2) +16] x 3= **8688** | [(1440 x 2) +16] x 3=**8688** | 112 | 8

Tail

Trellis-Termination | **8688** bit/20ms | 12 | **8688** bit/20ms | 12 | 120 x 2= **240**

Conv. Coding 1/2

1st Interleaving | **8700** bit/20ms | **8700** bit/20ms | 1st Interleaving (240)

RF-segmentation | **4350** | **4350** | **4350** | **4350**

Puncturing Ratemaching | **4350** bit punct. to **2418** bit puncturing-level: **44%** 9 RU→276x9 = 2484 Bits available | **4350** bit punct. to **2418** bit puncturing-level: **44%** 9 RU→276x9 = 2484 Bits available | Puncturing 17% Rate Matching (200)

gross	**2484 bit**
-TFCI	- 16 bit
-Signal.	-50 bit
punc. to	**2418 bit**

gross	**2484 bit**
-TFCI	- 16 bit
-Signal.	-50 bit
punc. to	**2418 bit**

2418 | **2418** | **2418** | **2418** | 50 | 50 | 50 | 50

Service Multiplex. | **2418** | 50 | **2418** | 50 | **2418** | 50 | **2418** | 50

2nd Interleaving | **2468** | **2468** | **2468** | **2468**

TFCI | **2468** | TFCI 16 | **2468** | TFCI 16 | **2468** | TFCI 16 | **2468** | TFCI 16

Slot segmentation SF=16

138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
130	TFCI MA TFCI	130	130	TFCI MA TFCI	130	130	TFCI MA TFCI	130	130	TFCI MA TFCI	130

8 256 8 chips

Radio Frame #1   Radio Frame #2   Radio Frame #3   Radio Frame #4

Figure A.4

A.2.4.2 1.28 Mcps TDD Option

Table A.4A

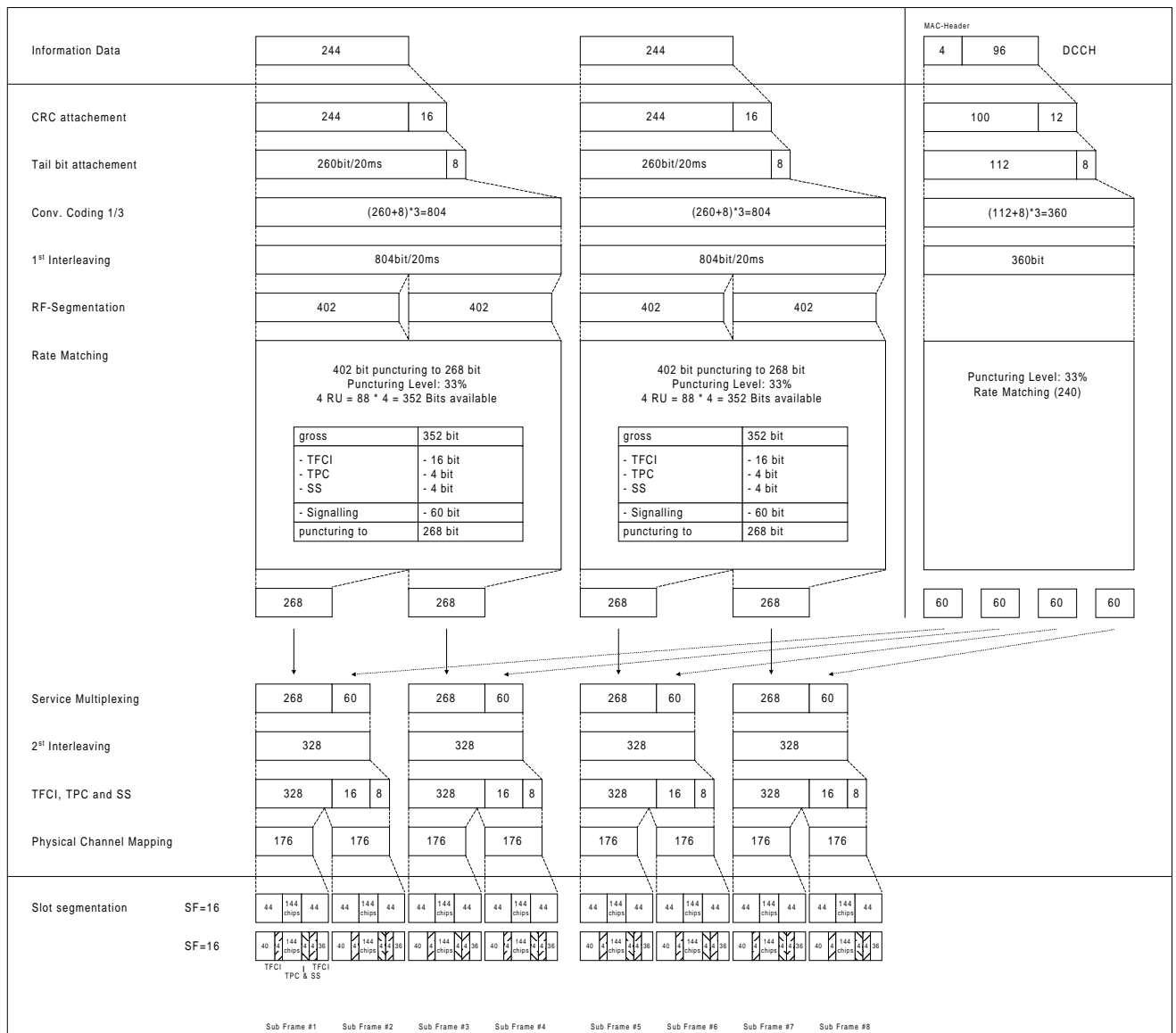| Parameter	Value
Information data rate	144 kbps
RU's allocated	2TS (8*SF16) = 16RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	8 Bit/user/10ms
TFCI	32 Bit/user/10ms
Synchronisation Shift (SS)	8 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	38% / 7%

Figure A.4A

A.2.5 DL reference measurement channel (384 kbps)

A.2.5.1 3.84 Mcps TDD Option

Table A.5

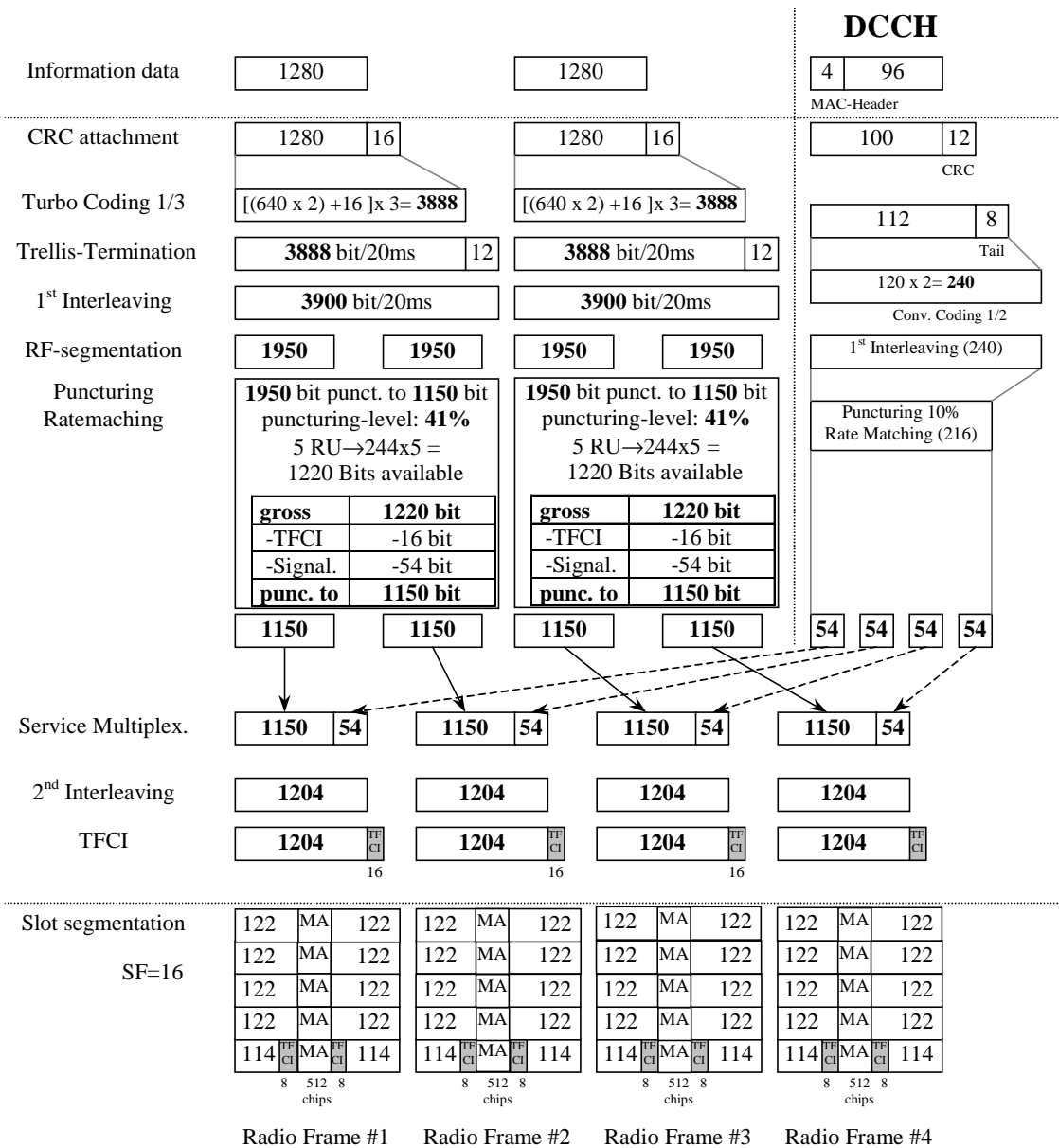| Parameter	Value
Information data rate	384 kbps
RU´s allocated	8*3TS = 24RU
Midamble	256 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate : 1/3 DCH of the DTCH / ½ DCH of the DCCH	43.4% / 15.3%

						DCCH	

Information data: 3840 | 3840 | 3840 | 3840 | 4 | 96
MAC-Header

CRC attachment: 3840 16 | 3840 16 | 3840 16 | 3840 16 | 100 12
CRC

Turbo Coding 1/3: [(3840+16) x2]x 3= **23136** | [(3840+16) x2]x 3= **23136** | 112 8
Tail

Trellis-Termination: **23136** bit/20ms 24 | **23136** bit/20ms 24 | 120 x 2= **240**
Conv. Coding 1/2

1st Interleaving: **23160** bit/20ms | **23160** bit/20ms | 1st Interleaving (240)

RF-segmentation: **11580** **11580** | **11580** **11580**

Puncturing Ratemaching: **11580** bit punc. to **6557** bit puncturing-level: **43%** 24 RU→276 x 24 = 6624 Bits available | **11580** bit punc. to **6557** bit puncturing-level: **43%** 24 RU→276 x 24 = 6624 Bits available | Puncturing 15% Rate Matching (204)

gross	6624 bit
-TFCI	- 16 bit
-Signal.	-51 bit
punc. to	**6557 bit**

gross	6624 bit
-TFCI	- 16 bit
-Signal.	-51 bit
punc. to	**6557 bit**

6557 | **6557** | **6557** | **6557** | 51 51 51 51

Service Multiplex.: **6557** 51 | **6557** 51 | **6557** 51 | **6557** 51

2nd Interleaving: **6608** | **6608** | **6608** | **6608**

TFCI: **6608** TFCI 16 | **6608** TFCI 16 | **6608** TFCI 16 | **6608** TFCI 16

Slot segmentation
SF=16
3 Timeslots
8 codes per slot

138 MA 138
138 MA 138
138 MA 138
138 MA 138
138 MA 138
138 MA 138
138 MA 138
130 TFCI MA TFCI 130

8   256 chips   8   TS #1..#3

Radio Frame #1   Radio Frame #2   Radio Frame #3   Radio Frame #4

Figure A.5

A.2.5.2 1.28 Mcps TDD Option

Table A.5A

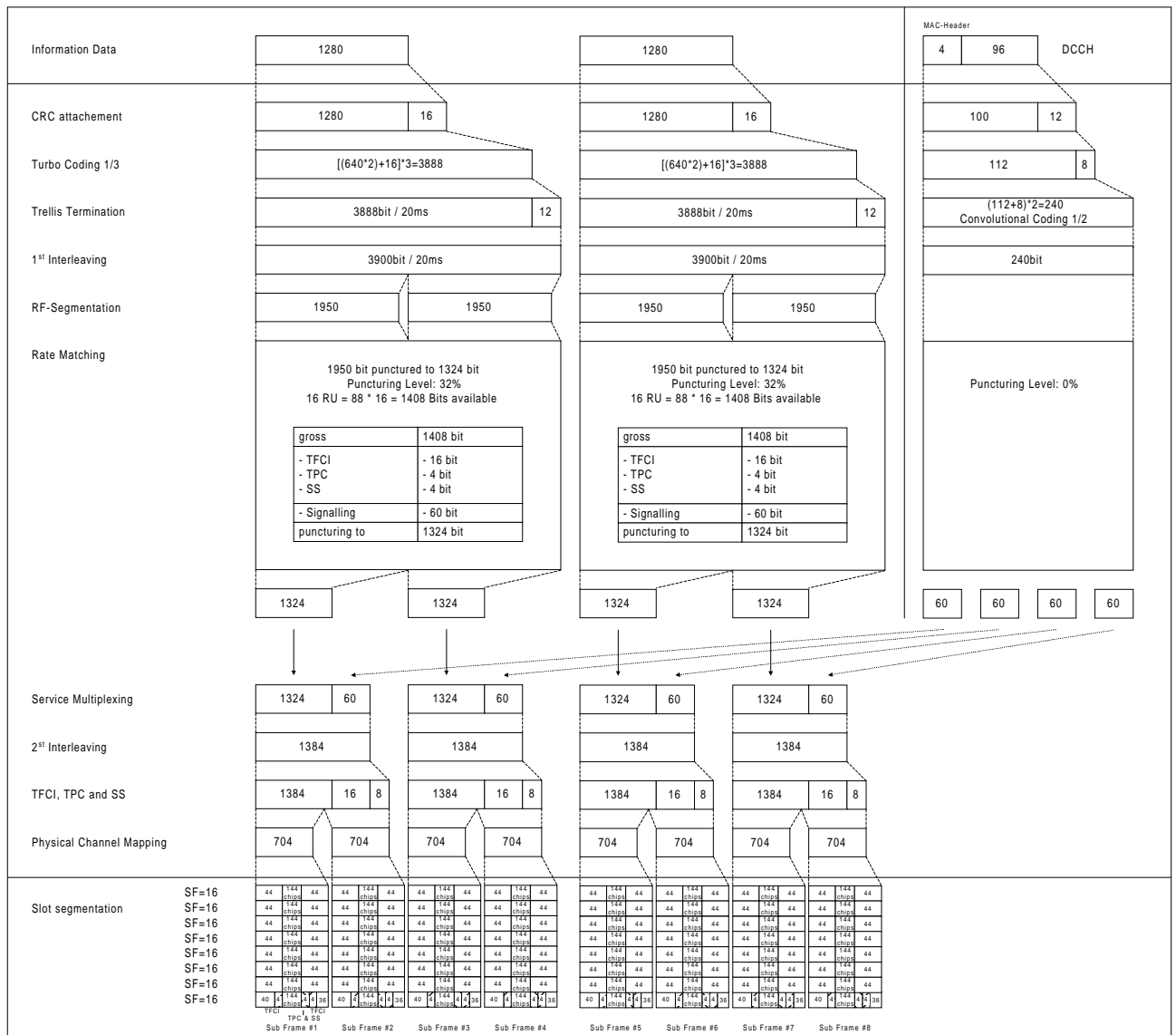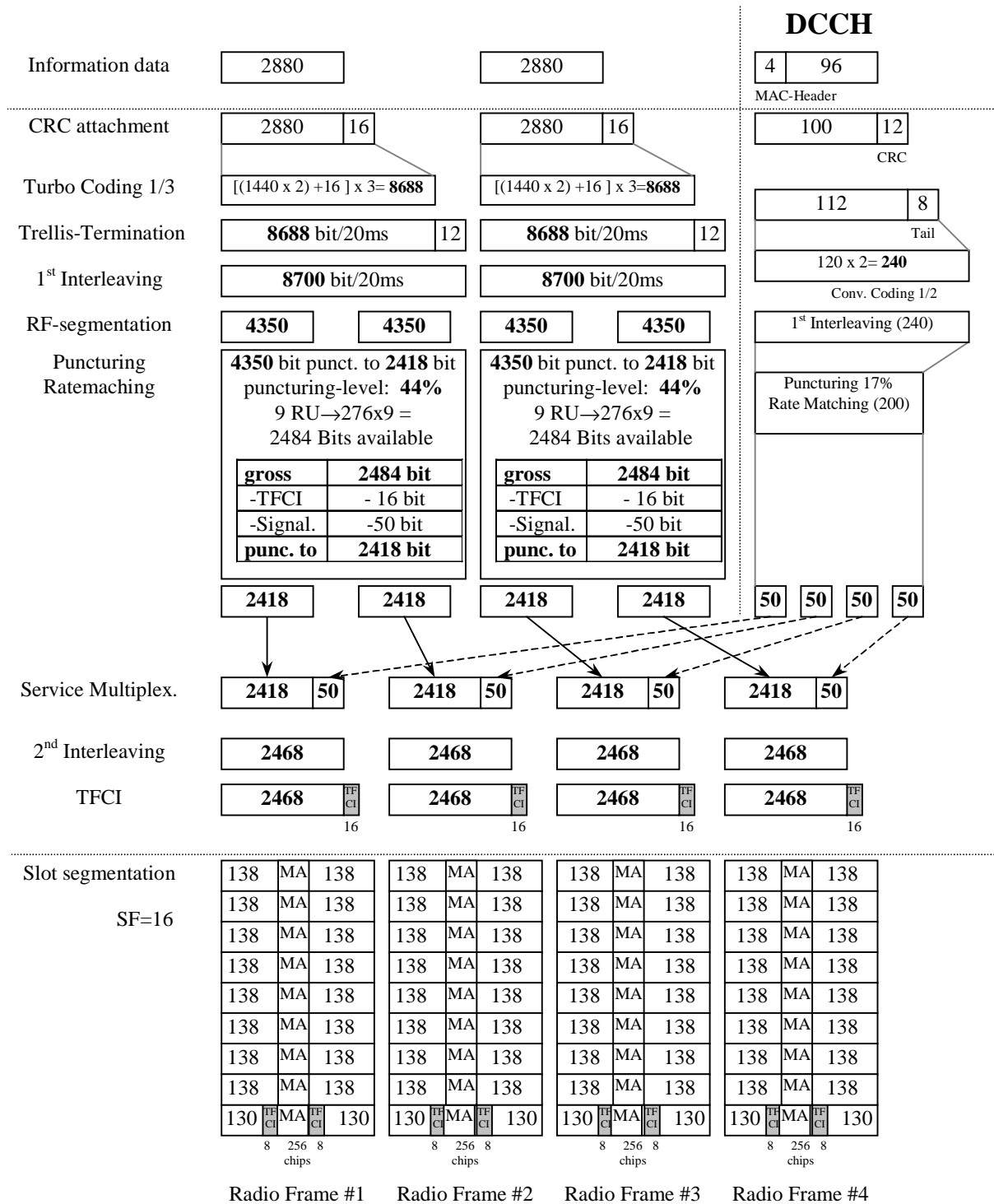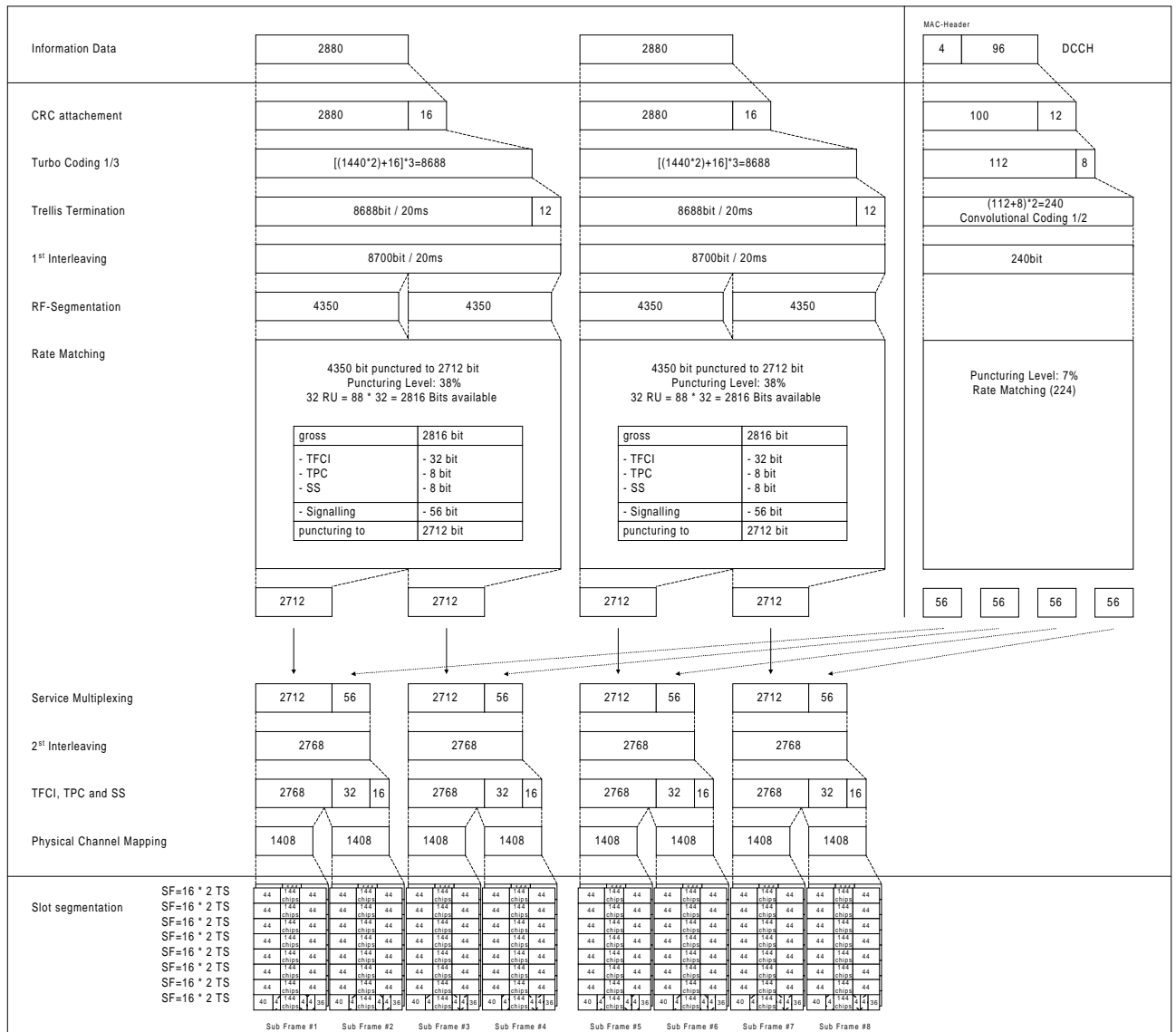| Parameter	Value
Information data rate	384 kbps
RU's allocated	4TS (10*SF16) = 40RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	16 Bit/user/10ms
TFCI	64 Bit/user/10ms
Synchronisation Shift (SS)	16 Bit/user/10ms
Inband signalling DCCH	max.2 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	41% / 12%

Figure A.5A

A.2.6   BCH reference measurement channel

[mapped to 1 code SF16]

A.2.6.1   3.84 Mcps TDD Option

Table A.6

Parameter	Value
Information data rate:	12.3 kbps
RU´s allocated	1 RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 bit
TFCI	0 bit
Puncturing level	10%

Figure A.6

A.2.6.2   1.28 Mcps TDD Option

Table A.6A

Parameter	Value
Information data rate:	12.3 kbps
RU´s allocated	2 RU
Midamble	144 chips
Interleaving	20 ms
Power control	0 bit
TFCI	0 bit
Puncturing level	13%

Figure A.6A

A.2.7 UL multi code reference measurement channel (12.2 kbps)

A.2.7.1 3.84 Mcps TDD Option

Table A.7

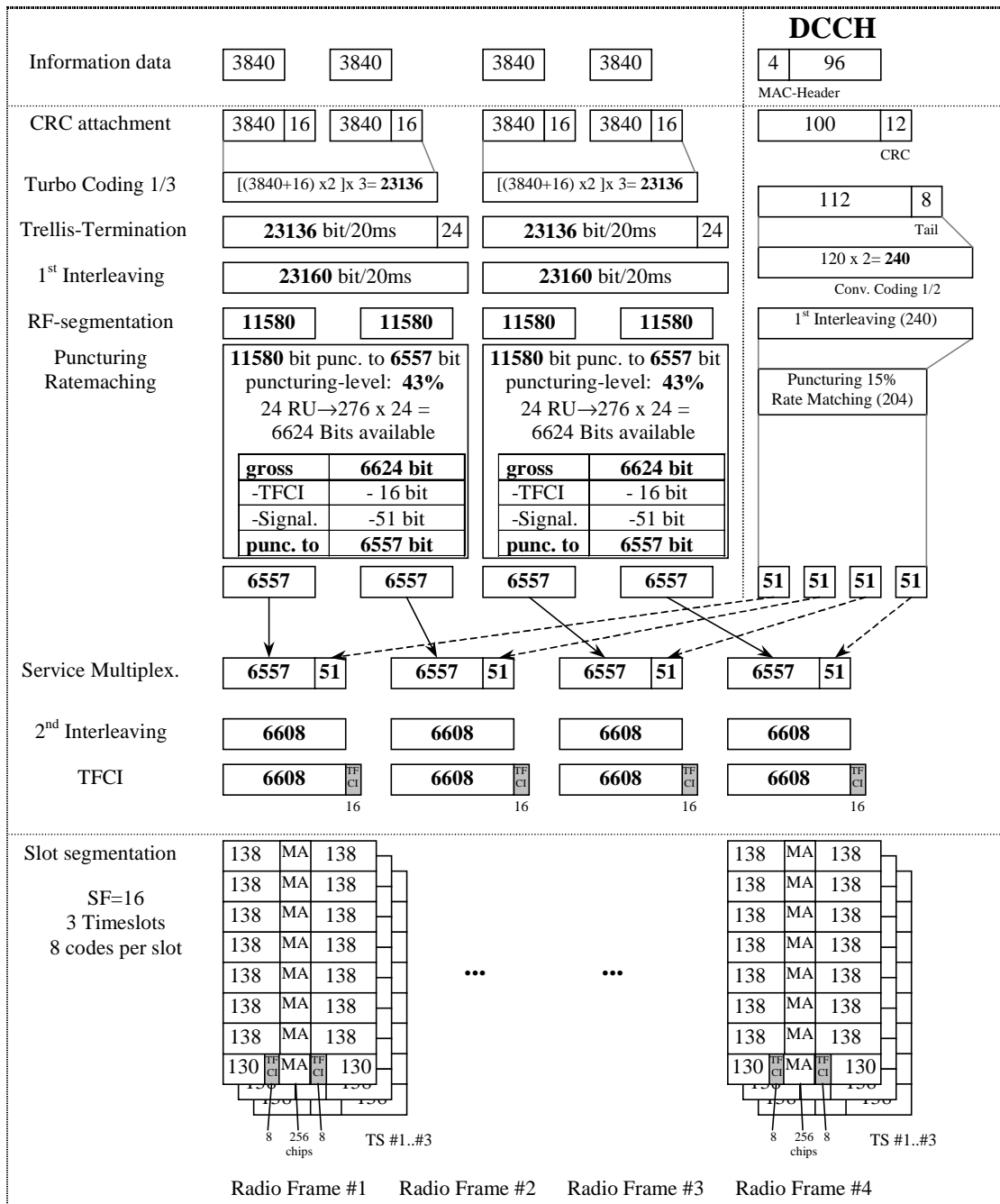| Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	2 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH of the DTCH / DCH of the DCCH	5% / 0 %

Figure A.7

A.2.7.2   1.28 Mcps TDD Option

Table A.7A

Parameter	Value
Information data rate	12.2 kbps
RU's allocated	1TS (2*SF16) = 2RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
4 Bit reserved for future use (place of SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate 1/3: DCH of the DTCH / DCH of the DCCH	33% / 33%

Figure A.7A

A.2.8   DL reference measurement channel (2 Mbps)

A.2.8.1   3.84 Mcps TDD Option

Table A.8

Parameter	Value
Information data rate	2048 kbps
RU´s allocated	16*12TS = 192RU
Midamble	256 chips
Interleaving	10 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH of the DTCH / DCH of the DCCH	13.9% / 0%

Figure A.8

| 10 ms TTI # 1 | 10 ms TTI # 2 | 10 ms TTI # 3 | 10 ms TTI # 4 | **DCCH** |

Information data
#1 ... #5 (TTI 1): 4076 ... 4076
#1 ... #5 (TTI 2): 4076 ... 4076

L2-Header: 4 | max. 96

CRC attachment
4076 | 16 ... 4076 | 16
4076 | 16 ... 4076 | 16

CRC: 100 | 12

Turbo Coding 1/3
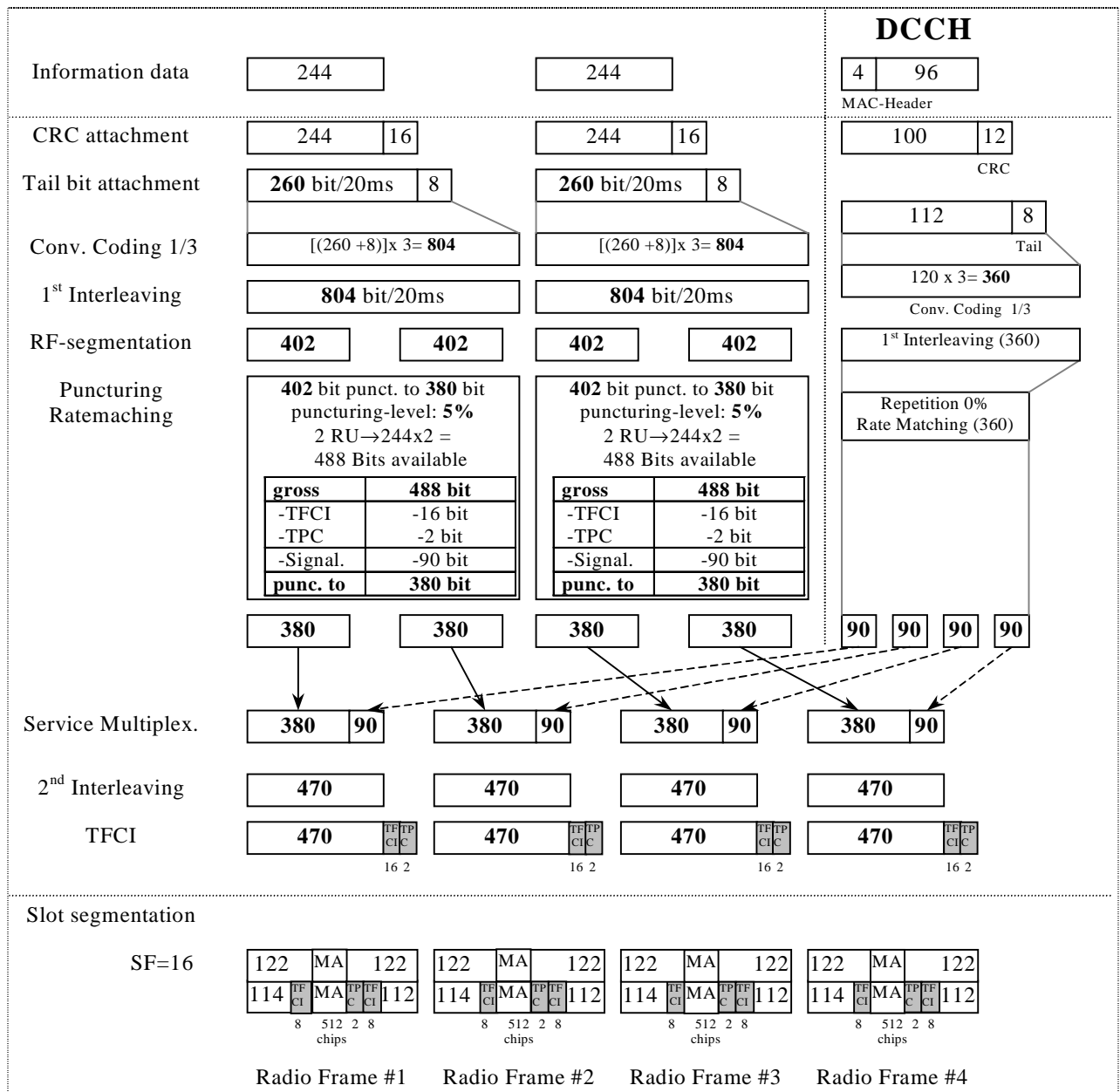[(4076 +16)x5]x 3= **61380**
[(4076 +16)x5]x 3= 61380

112 | 8 Tail

Trellis Termination
61380 bit/10ms | 60
61380 bit/10ms | 60

120 x 3= **360** Conv. Coding 1/3

1st Interleaving
61440 bit/10ms
61440 bit/10ms

1st Interleaving (360)

RF-segmentation
61440
61440

Puncturing Ratemaching
61440 bit punct. to **52886** bit puncturing-level: **13.9%** 192 RU→276x192 = 52992 Bits available

Punturing 0% Rate Matching (360)

gross	52992 bit
-TFCI	-16 bit
-Signal.	-90 bit
punc. to	**52886 bit**

61440 bit punct. to **52886** bit puncturing-level: **13.9%** 192 RU→276x192 = 52992 Bits available

gross	52992 bit
-TFCI	-16 bit
-Signal.	-90 bit
punc. to	**52886 bit**

52886 | **52886** | **52886** | **52886** | 90 90 90 90

Service Multiplex.
52886 | 90
52886 | 90
52886 | 90
52886 | 90

2nd Interleaving
52976 | **52976** | **52976** | **52976**

TFCI
52976 | TFCI 16
52976 | TFCI 16
52976 | TFCI 16
52976 | TFCI 16

Slot segmentation SF=1
256 chips
8 | 8
2200 | TFCI | MA | TFCI | 2200
.
.
2208 | MA | 2208

TS #1...#12   TS #1...#12   TS #1...#12   TS #1...#12

Radio Frame #1   Radio Frame #2   Radio Frame #3   Radio Frame #4

A.2.8.2 1.28 Mcps TDD Option

Table A.8A

Parameter	Value
Information data rate	2048 kbps
RU's allocated	5TS (1*SF1) = 80RU/5ms
Midamble	144
Interleaving	10 ms
Power control (TPC)	6 Bit/user/10ms
TFCI	48 Bit/user/10ms
Synchronisation Shift (SS)	6 Bit/user/10ms
Inband signalling DCCH	no
Coding	no
Modulation	8PSK

Figure A.8A

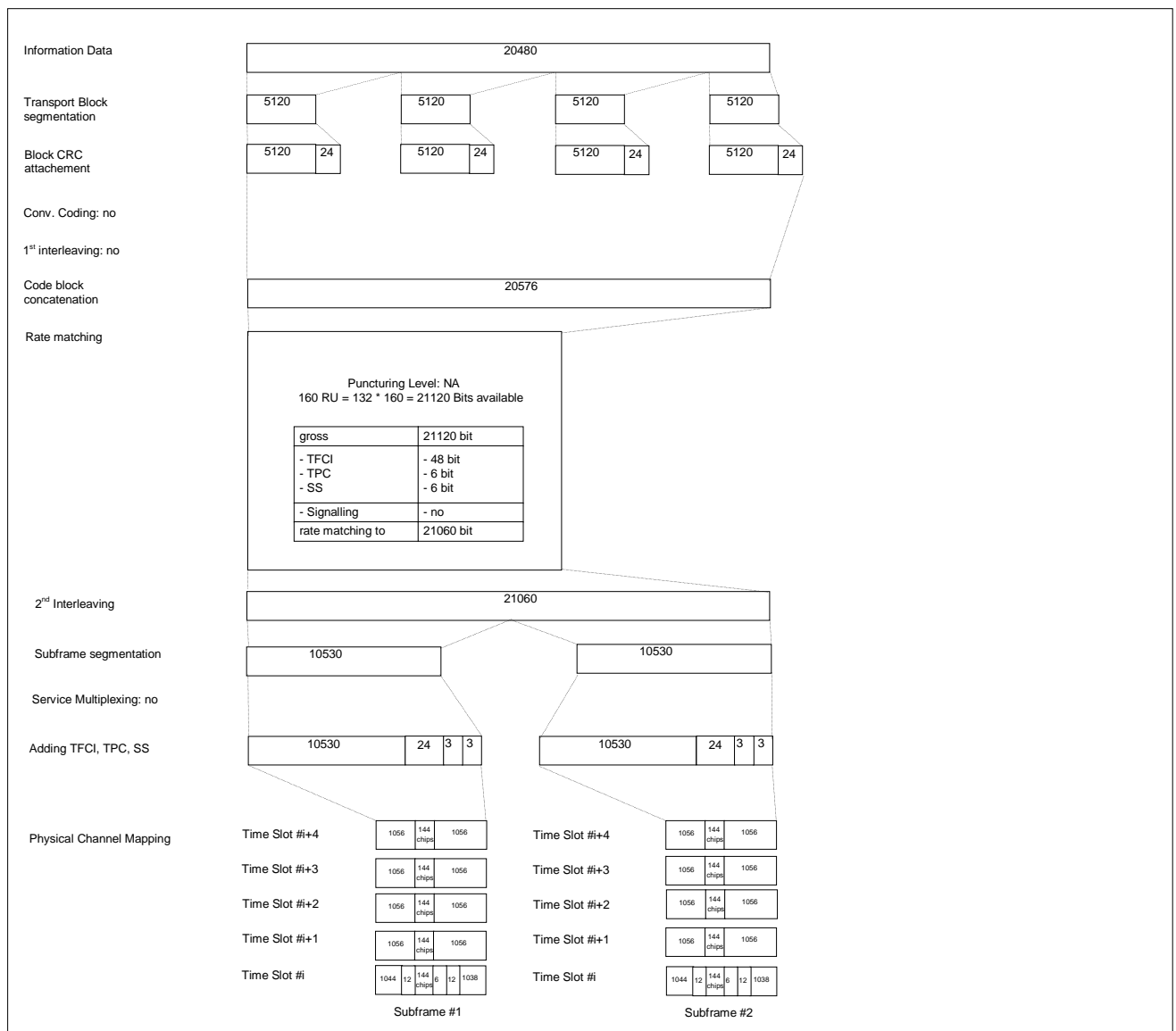*CR-Form-v7*

CHANGE REQUEST

⌘   **25.102** CR   **131**   ⌘ **rev**   ⌘   Current version: **5.2.0**   ⌘

*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 ☐   Core Network ☐

Title: ⌘	Name correction of logical and transport channels
Source: ⌘	RAN WG4

Work item code: ⌘	TEI4	***Date:*** ⌘	26/11/2002

Category: ⌘	**A**	***Release:*** ⌘	Rel-5

<table>
<tr><td></td><td>Use <u>one</u> of the following categories:</td><td>Use <u>one</u> of the following releases:</td></tr>
<tr><td></td><td>***F*** *(correction)*</td><td>2   (GSM Phase 2)</td></tr>
<tr><td></td><td>***A*** *(corresponds to a correction in an earlier release)*</td><td>R96 (Release 1996)</td></tr>
<tr><td></td><td>***B*** *(addition of feature),*</td><td>R97 (Release 1997)</td></tr>
<tr><td></td><td>***C*** *(functional modification of feature)*</td><td>R98 (Release 1998)</td></tr>
<tr><td></td><td>***D*** *(editorial modification)*</td><td>R99 (Release 1999)</td></tr>
<tr><td></td><td>Detailed explanations of the above categories can</td><td>Rel-4 (Release 4)</td></tr>
<tr><td></td><td>be found in 3GPP TR 21.900.</td><td>Rel-5 (Release 5)</td></tr>
<tr><td></td><td></td><td>Rel-6 (Release 6)</td></tr>
</table>

Reason for change: ⌘	No clear distinction between logical and transport channels. Punctering levels and code rates are different for the data and control part of the transport channel.
Summary of change: ⌘	Referencing the DCH of the DTCH and the DCH of the DCCH instead of DCCH and DCH in general for punctering levels and coding rates.
Consequences if not approved: ⌘	Incorrect description and inconsistency with respect to WG1 specifications. **Isolated impact analysis:** The correction has no impact on UE-BS interworking.

Clauses affected: ⌘	A.2

Other specs affected: ⌘	**Y** **N** **X** ☐ ☐ **X** ☐ **X**	Other core specifications Test specifications O&M Specifications	⌘	25.105 in CR130

Other comments: ⌘	Equivalent CRs in other Releases: CR130 cat. F to 25.102 v4.6.0

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.

Annex A (normative): Measurement channels

A.1 General

A.2 Reference measurement channel

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 of the DTCH / DCH of the DCCH	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	1st Interleaving (360)

RF-segmentation	**402**	**402**	**402**	**402**	Repetition 0% Rate Matching (360)

Puncturing Ratemaching

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
-TPC	-2 bit * 2
-Signal.	-90 bit
punc. to	**362 bit**

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**	TFCI TPC	**452**	TFCI TPC	**452**	TFCI TPC	**452**	TFCI TPC

16 2   16 2   16 2   16 2

Slot segmentation

SF=8

228	TFCI	MA	TPC	TFCI	224	228	TFCI	MA	TPC	TFCI	224	228	TFCI	MA	TPC	TFCI	224	228	TFCI	MA	TPC	TFCI	224

8   512   2 8 chips (×4)

Radio Frame #1   Radio Frame #2   Radio Frame #3   Radio Frame #4

Figure A.1

A.2.1.2   1.28 Mcps TDD Option

Table A.1A

Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	1TS (1*SF8) = 2RU/5ms
Midamble	144
Interleaving	20 ms
Power control	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
4 Bit reserved for future use (place of SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate 1/3 : DCH of the DTCH / DCH of the DCCH	33% / 33%

Information Data	244	244	MAC-Header 4	96 DCCH
CRC attachement	244 16	244 16	100	12
Tail bit attachement	260bit/20ms 8	260bit/20ms 8	112	8
Conv. Coding 1/3	(260+8)*3=804	(260+8)*3=804	(112+8)*3=360	
1st Interleaving	804bit/20ms	804bit/20ms	360bit	
RF-Segmentation	402 402	402 402		

Figure A.1A

A.2.2 DL reference measurement channel (12.2 kbps)

A.2.2.1 3.84 Mcps TDD Option

TableA.2

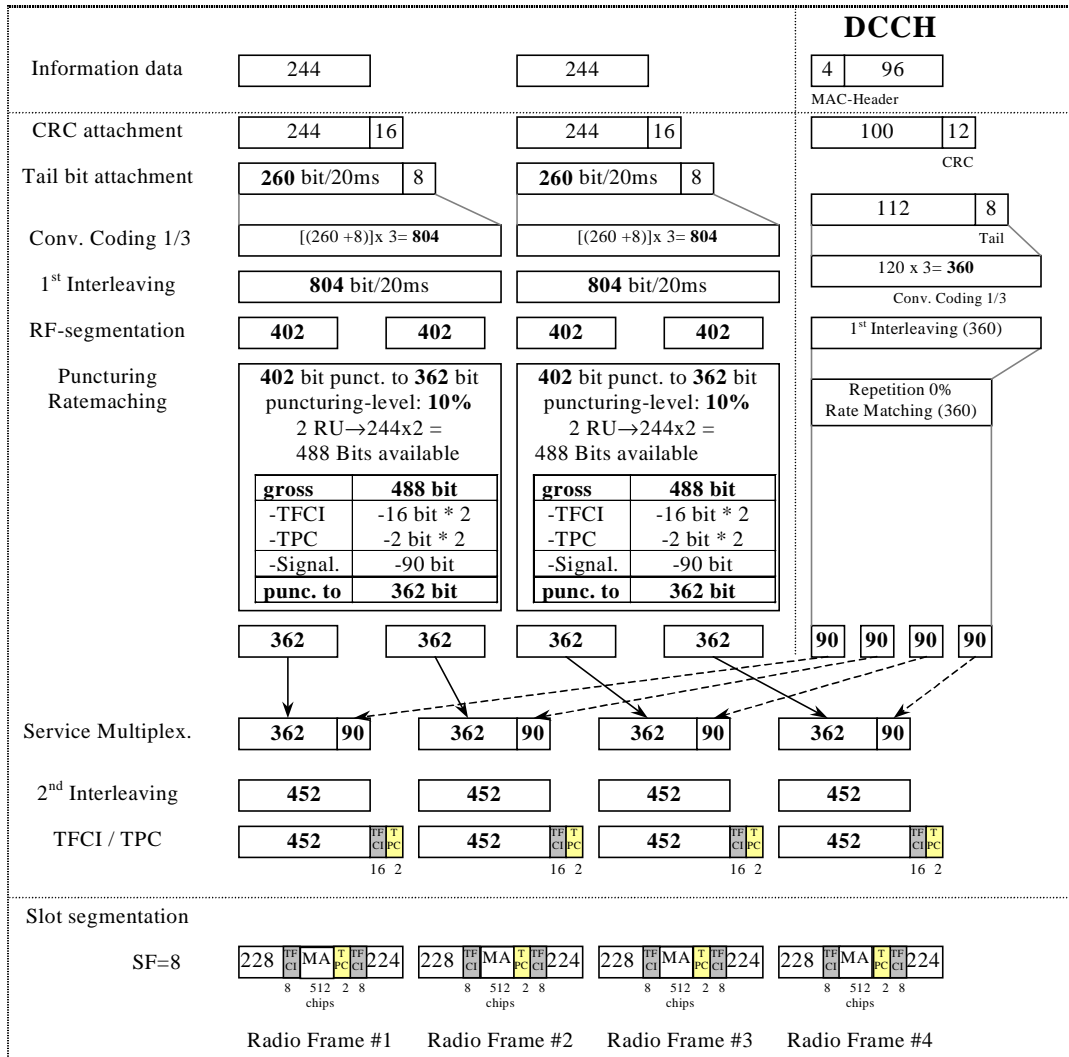| Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH of the DTCH / DCH of the DCCH	5% / 0 %

Figure A.2

A.2.2.2   1.28 Mcps TDD Option

Table A.2A

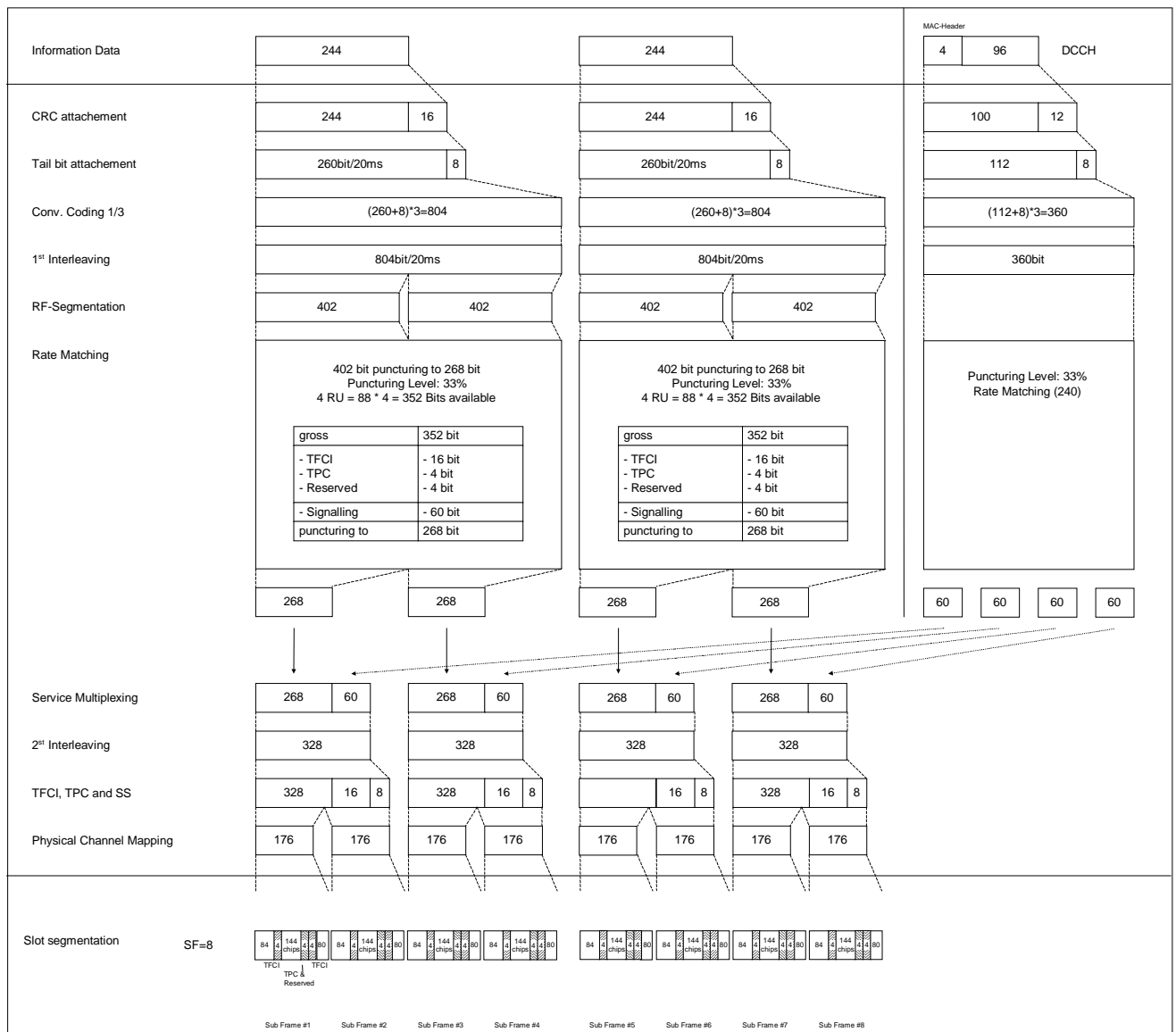| Parameter	Value
Information data rate	12.2 kbps
RU's allocated	1TS (2*SF16) = 2RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
Synchronisation Shift (SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate 1/3: DCH of the DTCH / DCH of the DCCH	33% / 33%

Figure A.2A

A.2.3 DL reference measurement channel (64 kbps)

A.2.3.1 3.84 Mcps TDD Option

Table A.3

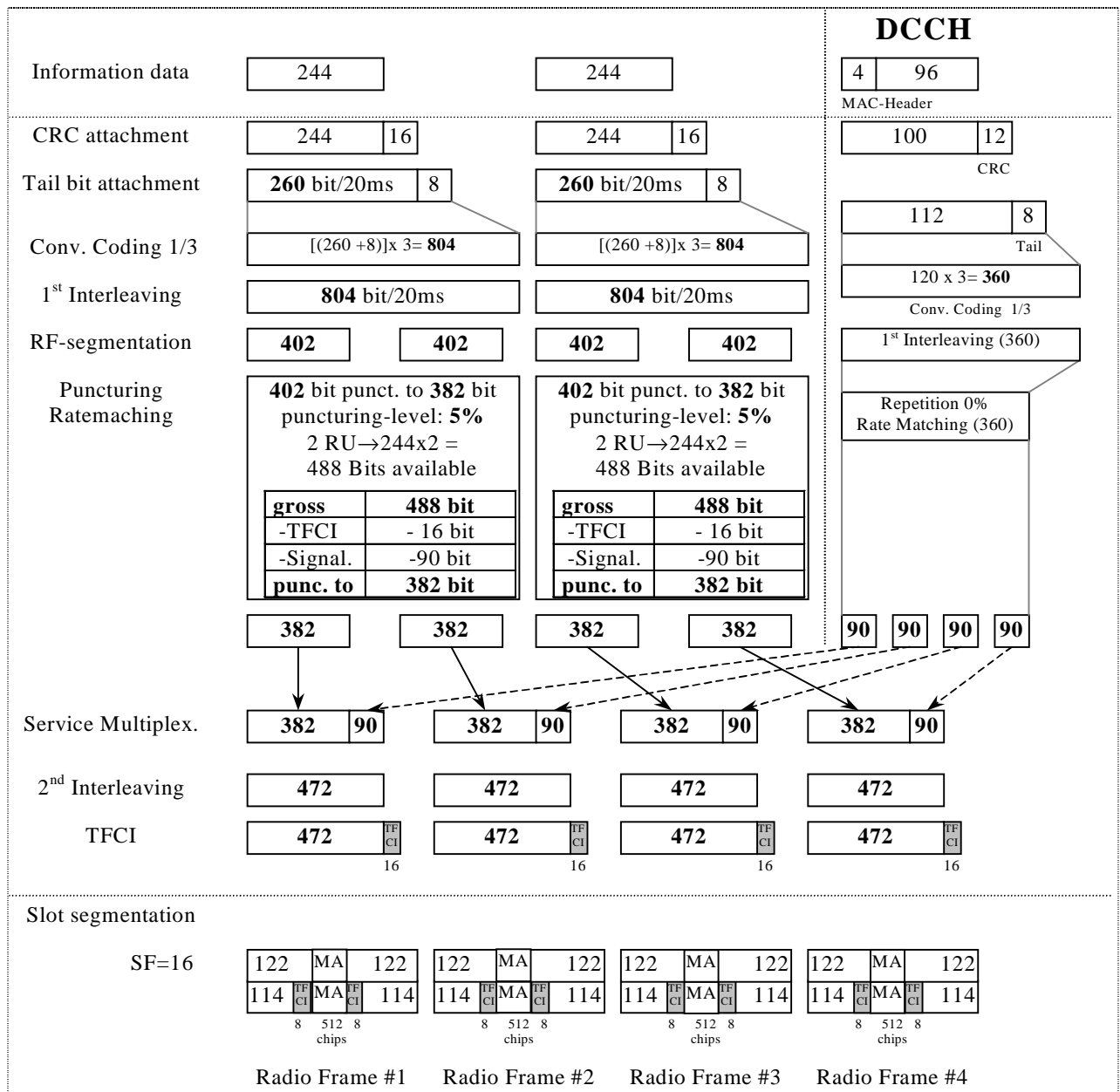| Parameter	Value
Information data rate	64 kbps
RU´s allocated	5 codes SF16 = 5RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate : 1/3 DCH of the DTCH / ½ DCH of the DCCH	41.1% / 10%

Figure A.3

A.2.3.2 1.28 Mcps TDD Option

Table A.3A

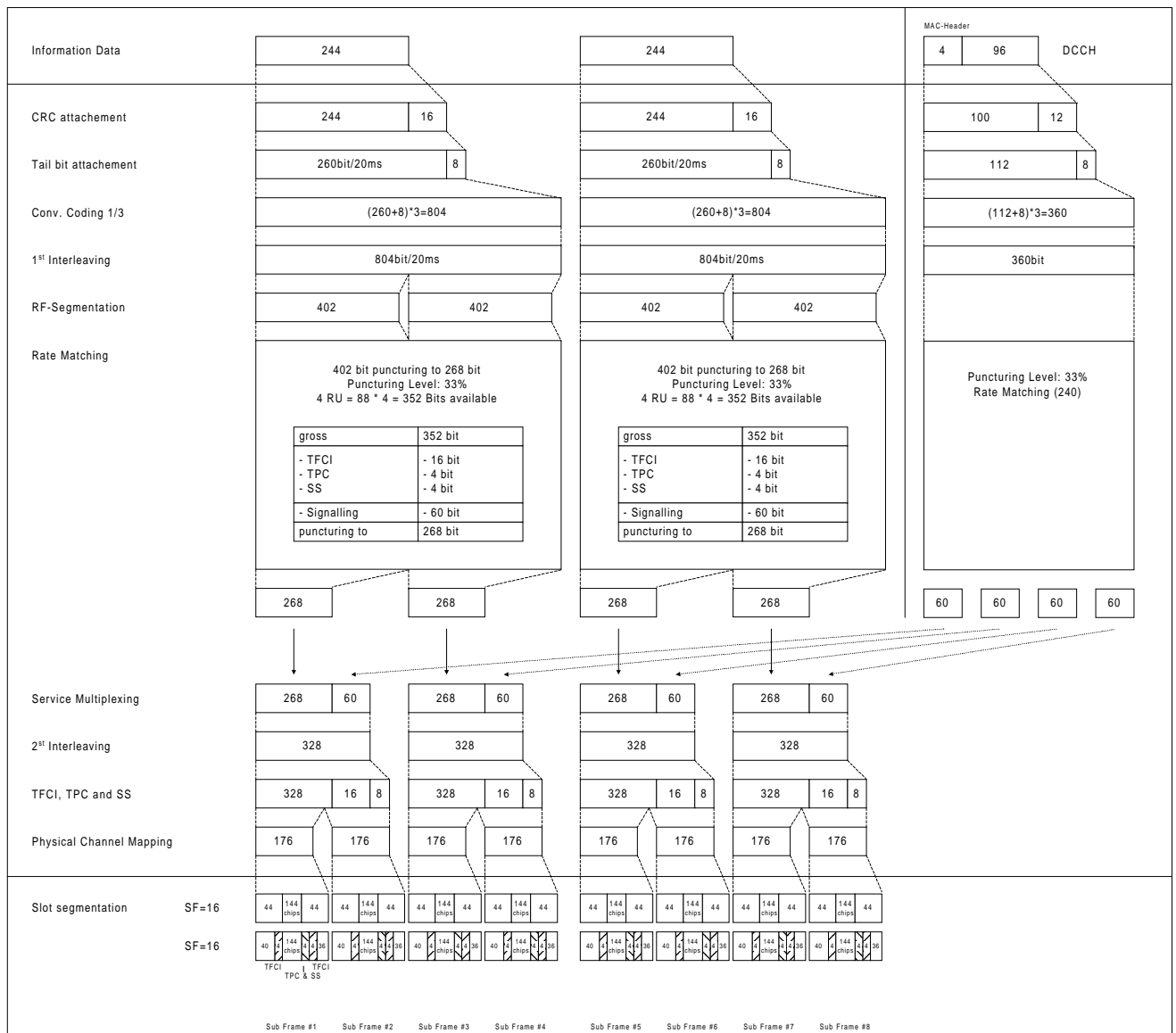| Parameter	Value
Information data rate	64 kbps
RU's allocated	1TS (8*SF16) = 8RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
Synchronisation Shift (SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	32% / 0

Figure A.3A

A.2.4 DL reference measurement channel (144 kbps)

A.2.4.1 3.84 Mcps TDD Option

Table A.4

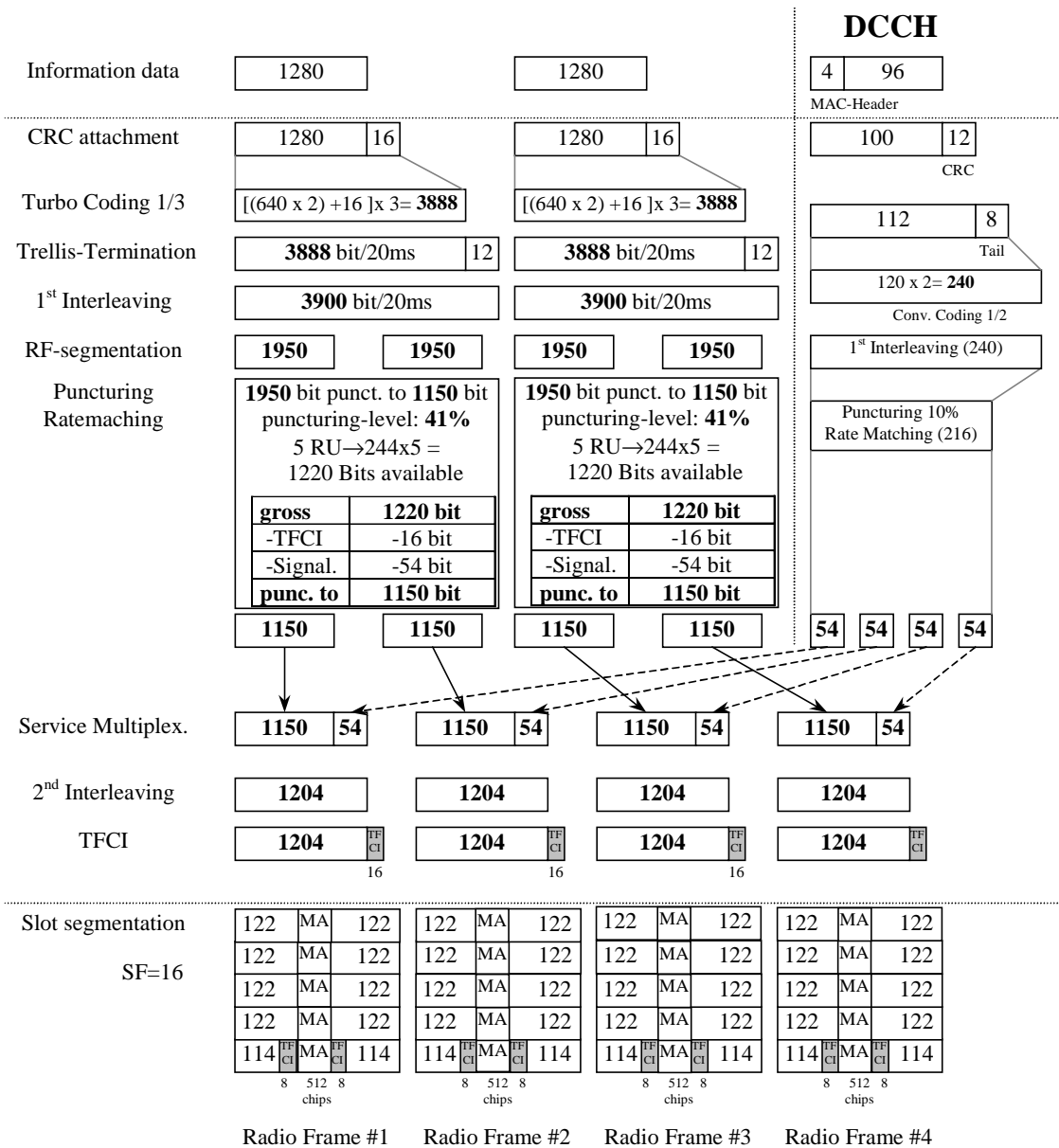| Parameter	Value
Information data rate	144 kbps
RU´s allocated	9 codes SF16 = 9RU
Midamble	256 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	44.5% / 16.6%

Information data	2880	2880	4	96

MAC-Header

CRC attachment	2880	16	2880	16	100	12

CRC

Turbo Coding 1/3	[(1440 x 2) +16] x 3= **8688**	[(1440 x 2) +16] x 3= **8688**	112	8

Tail

Trellis-Termination	**8688** bit/20ms	12	**8688** bit/20ms	12	120 x 2= **240**

Conv. Coding 1/2

1st Interleaving	**8700** bit/20ms	**8700** bit/20ms	1st Interleaving (240)

RF-segmentation	**4350**	**4350**	**4350**	**4350**	Puncturing 17% Rate Matching (200)

Puncturing Ratemaching

4350 bit punct. to **2418** bit
puncturing-level: **44%**
9 RU→276x9 =
2484 Bits available

gross	**2484 bit**
-TFCI	- 16 bit
-Signal.	-50 bit
punc. to	**2418 bit**

4350 bit punct. to **2418** bit
puncturing-level: **44%**
9 RU→276x9 =
2484 Bits available

gross	**2484 bit**
-TFCI	- 16 bit
-Signal.	-50 bit
punc. to	**2418 bit**

2418	**2418**	**2418**	**2418**	50	50	50	50

Service Multiplex.	**2418**	50	**2418**	50	**2418**	50	**2418**	50

2nd Interleaving	**2468**	**2468**	**2468**	**2468**

TFCI	**2468**	TFCI 16	**2468**	TFCI 16	**2468**	TFCI 16	**2468**	TFCI 16

Slot segmentation

SF=16

138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
138	MA	138	138	MA	138	138	MA	138	138	MA	138
130	TFCI MA TFCI	130	130	TFCI MA TFCI	130	130	TFCI MA TFCI	130	130	TFCI MA TFCI	130

8 256 8
chips

Radio Frame #1   Radio Frame #2   Radio Frame #3   Radio Frame #4

Figure A.4

A.2.4.2 1.28 Mcps TDD Option

Table A.4A

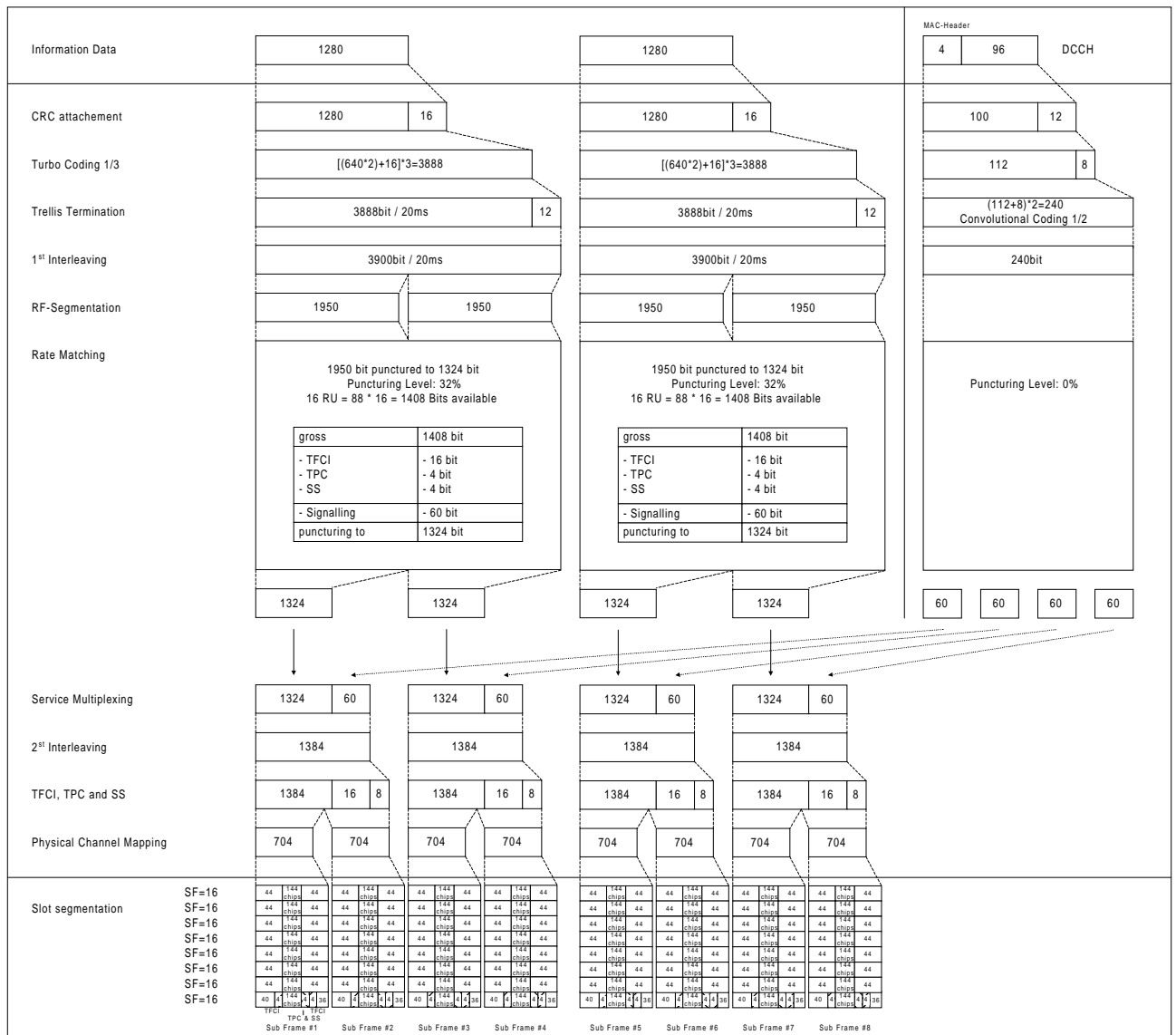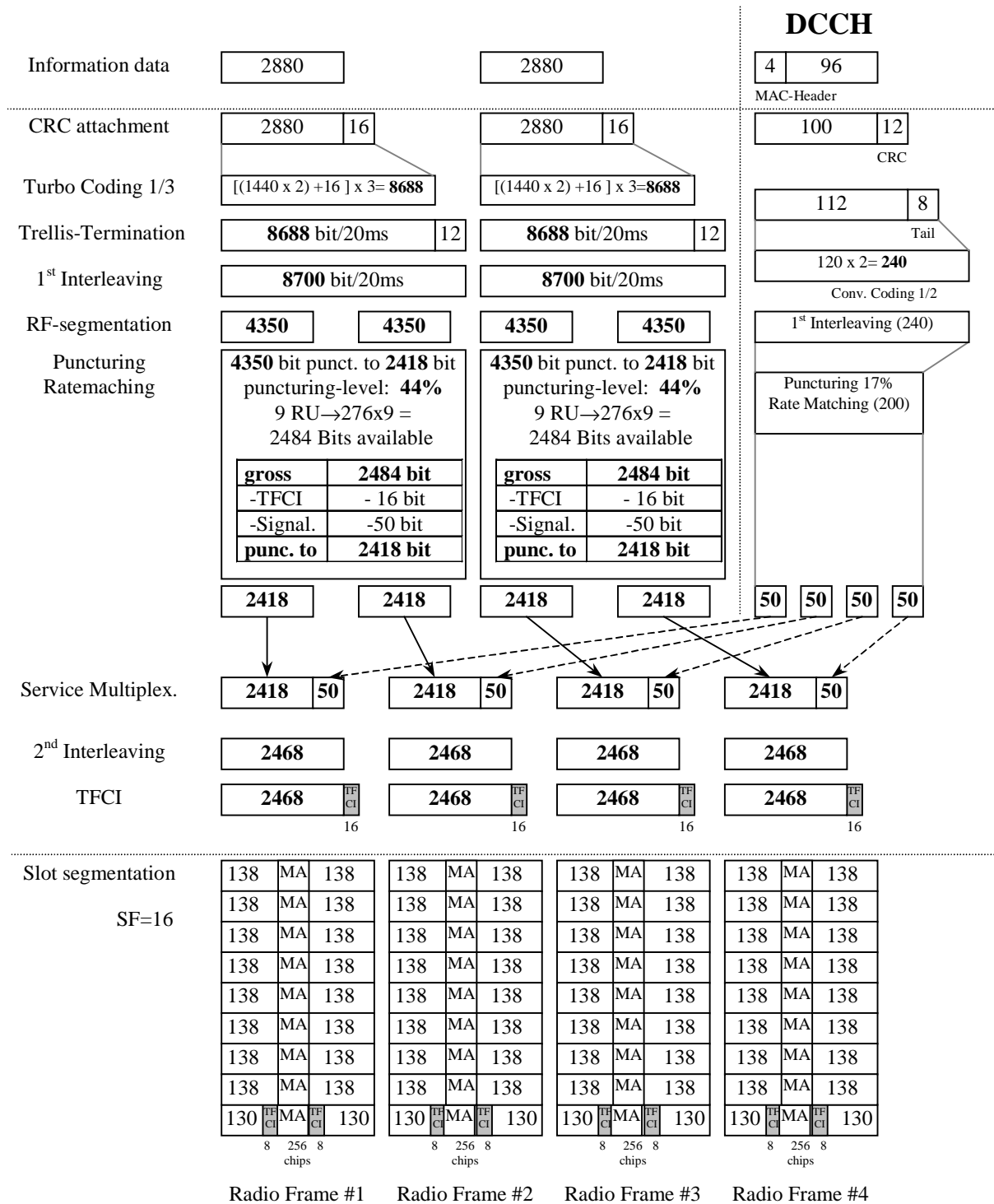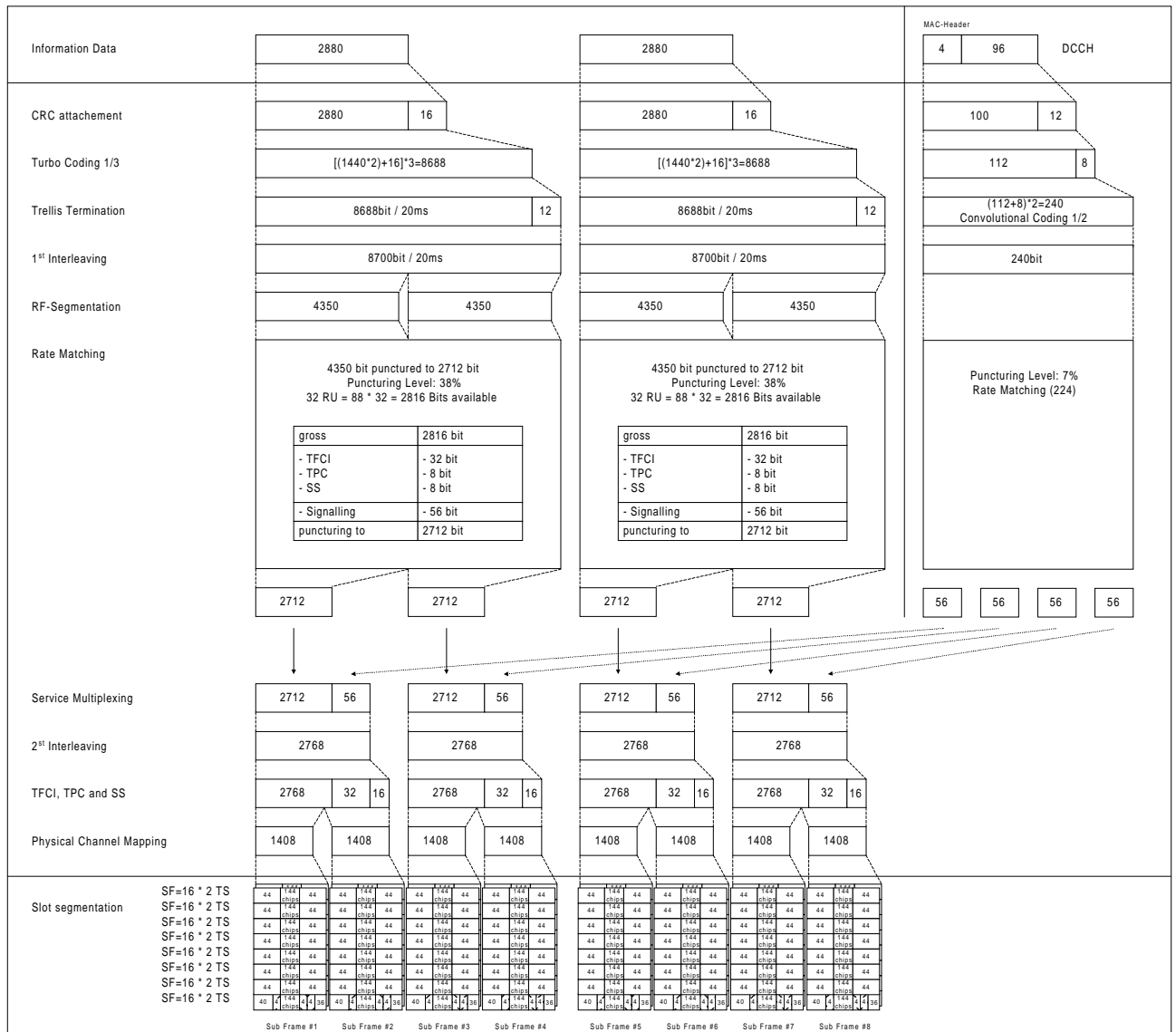| Parameter	Value
Information data rate	144 kbps
RU's allocated	2TS (8*SF16) = 16RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	8 Bit/user/10ms
TFCI	32 Bit/user/10ms
Synchronisation Shift (SS)	8 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	38% / 7%

Figure A.4A

A.2.5   DL reference measurement channel (384 kbps)

A.2.5.1   3.84 Mcps TDD Option

Table A.5

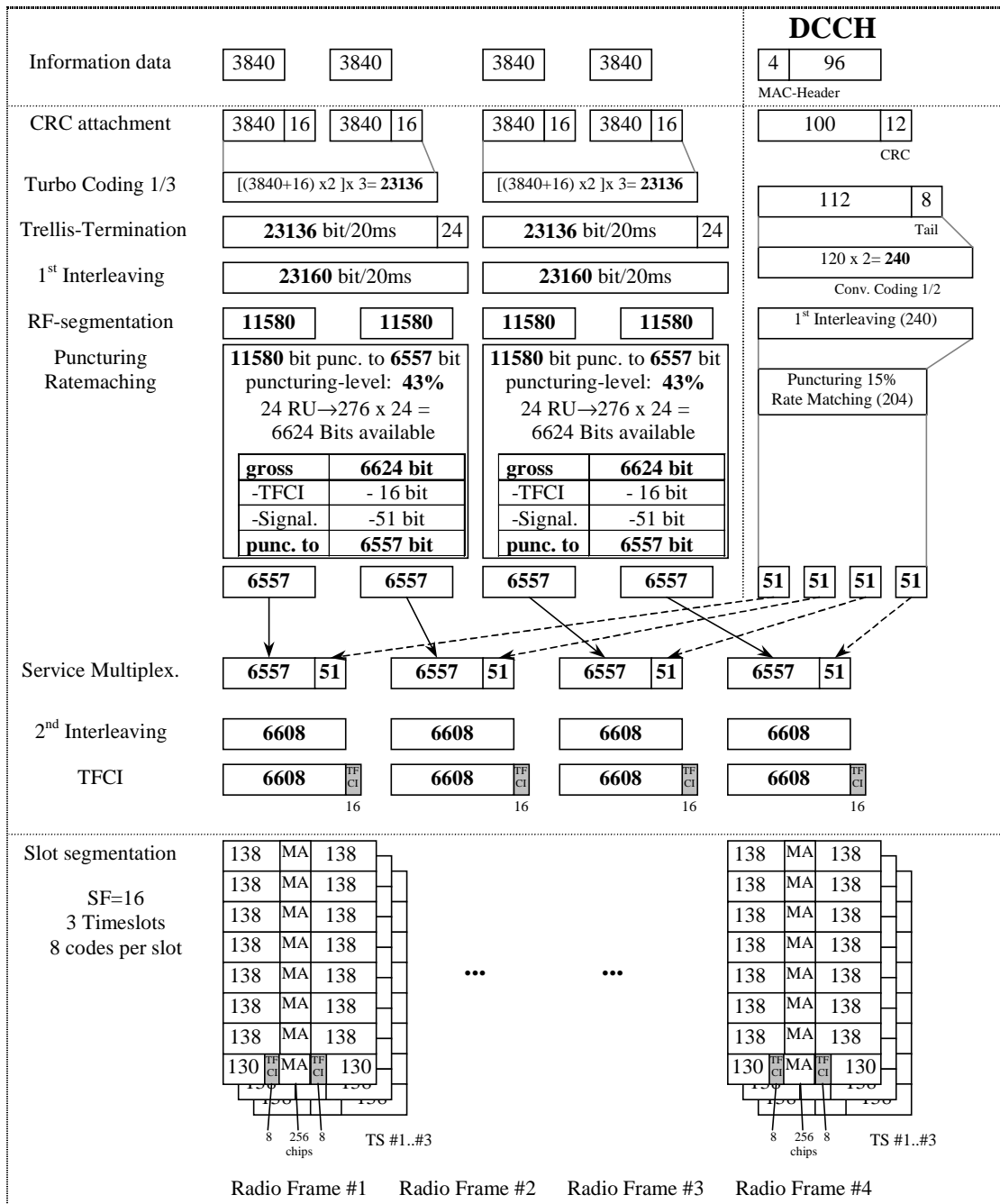| Parameter	Value
Information data rate	384 kbps
RU´s allocated	8*3TS = 24RU
Midamble	256 chips
Interleaving	20 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate : 1/3 DCH of the DTCH / ½ DCH of the DCCH	43.4% / 15.3%

DCCH

Stage					
Information data	3840	3840	3840	3840	4	96

MAC-Header

CRC attachment: 3840 16 | 3840 16 | 3840 16 | 3840 16 | 100 12

CRC

Turbo Coding 1/3: [(3840+16) x2]x 3= **23136** | [(3840+16) x2]x 3= **23136**

112 | 8

Tail

Trellis-Termination: **23136** bit/20ms 24 | **23136** bit/20ms 24

120 x 2= **240**

Conv. Coding 1/2

1st Interleaving: **23160** bit/20ms | **23160** bit/20ms

1st Interleaving (240)

RF-segmentation: **11580** **11580** | **11580** **11580**

Puncturing Ratemaching:
11580 bit punc. to **6557** bit
puncturing-level: **43%**
24 RU→276 x 24 =
6624 Bits available

Puncturing 15%
Rate Matching (204)

gross	**6624 bit**
-TFCI	- 16 bit
-Signal.	-51 bit
punc. to	**6557 bit**

gross	**6624 bit**
-TFCI	- 16 bit
-Signal.	-51 bit
punc. to	**6557 bit**

6557 **6557** **6557** **6557** | 51 51 51 51

Service Multiplex.: **6557** 51 | **6557** 51 | **6557** 51 | **6557** 51

2nd Interleaving: **6608** | **6608** | **6608** | **6608**

TFCI: **6608** TFCI 16 | **6608** TFCI 16 | **6608** TFCI 16 | **6608** TFCI 16

Slot segmentation

SF=16
3 Timeslots
8 codes per slot

138	MA	138
138	MA	138
138	MA	138
138	MA	138
138	MA	138
138	MA	138
138	MA	138
130	TFCI MA TFCI	130

8 256 chips 8   TS #1..#3

138	MA	138
138	MA	138
138	MA	138
138	MA	138
138	MA	138
138	MA	138
138	MA	138
130	TFCI MA TFCI	130

8 256 chips 8   TS #1..#3

Radio Frame #1   Radio Frame #2   Radio Frame #3   Radio Frame #4

Figure A.5

A.2.5.2　1.28 Mcps TDD Option

Table A.5A

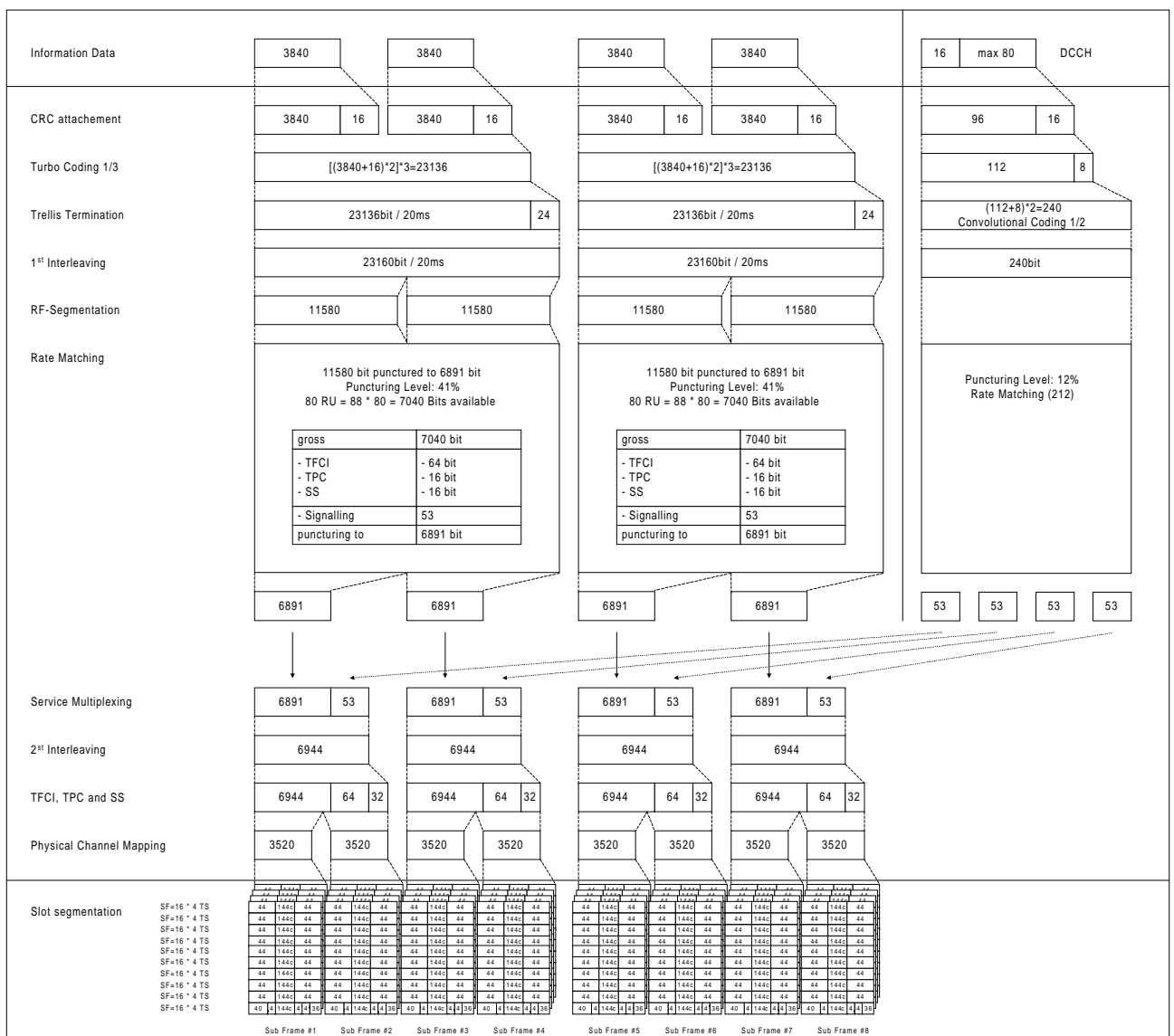| Parameter	Value
Information data rate	384 kbps
RU's allocated	4TS (10*SF16) = 40RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	16 Bit/user/10ms
TFCI	64 Bit/user/10ms
Synchronisation Shift (SS)	16 Bit/user/10ms
Inband signalling DCCH	max.2 kbps
Puncturing level at Code rate: 1/3 DCH of the DTCH / ½ DCH of the DCCH	41% / 12%

Figure A.5A

A.2.6 BCH reference measurement channel

[mapped to 1 code SF16]

A.2.6.1 3.84 Mcps TDD Option

Table A.6

Parameter	Value
Information data rate:	12.3 kbps
RU´s allocated	1 RU
Midamble	512 chips
Interleaving	20 ms
Power control	0 bit
TFCI	0 bit
Puncturing level	10%

Figure A.6

A.2.6.2 1.28 Mcps TDD Option

Table A.6A

Parameter	Value
Information data rate:	12.3 kbps
RU´s allocated	2 RU
Midamble	144 chips
Interleaving	20 ms
Power control	0 bit
TFCI	0 bit
Puncturing level	13%

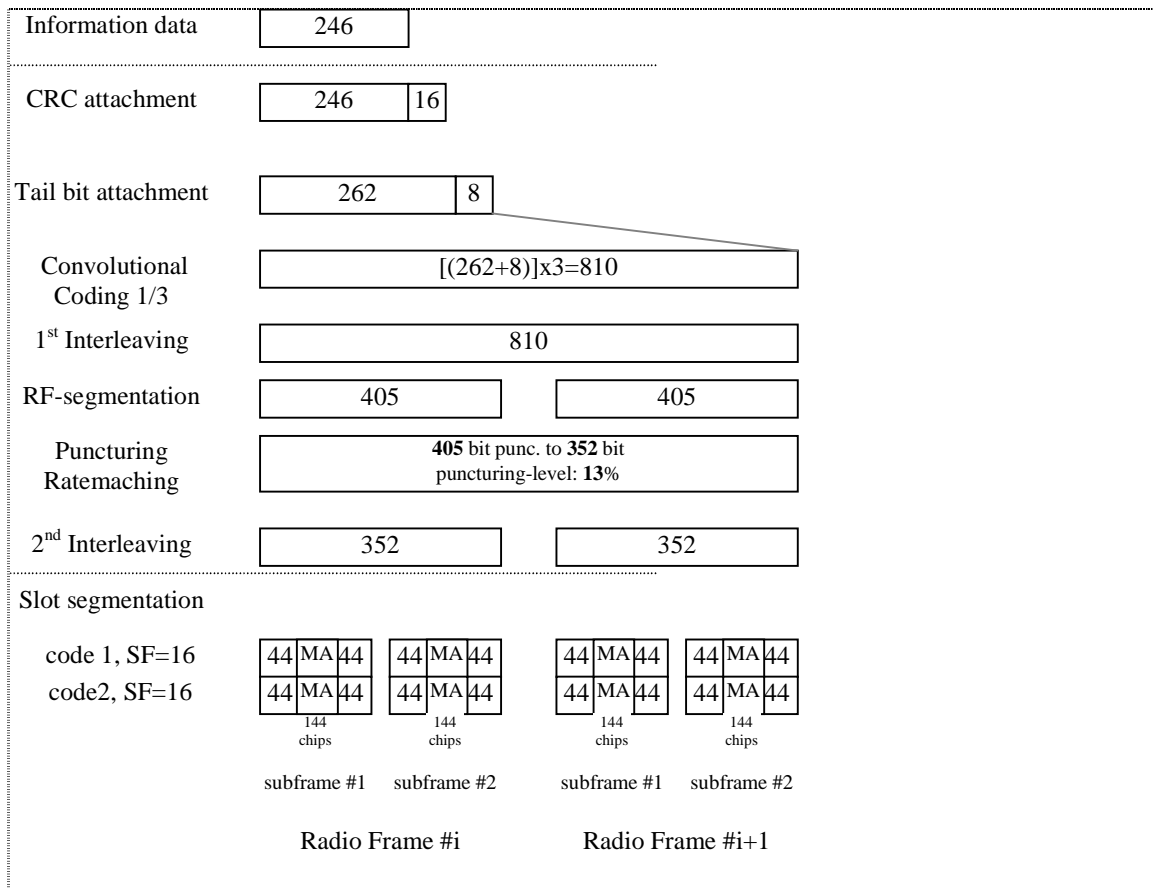**Figure A.6A**

A.2.7 UL multi code reference measurement channel (12.2 kbps)

A.2.7.1 3.84 Mcps TDD Option

Table A.7

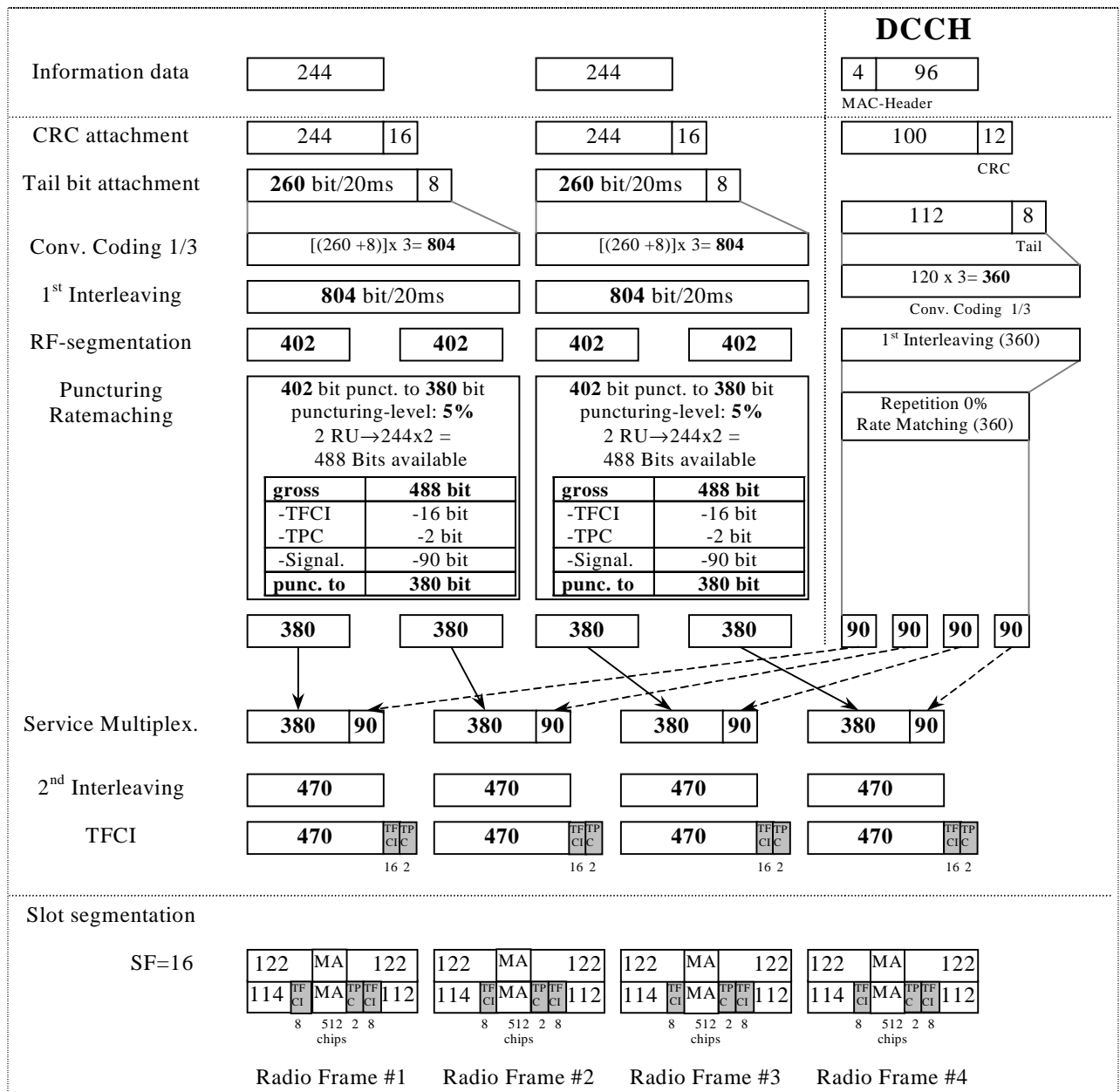| Parameter	Value
Information data rate	12.2 kbps
RU´s allocated	2 RU
Midamble	512 chips
Interleaving	20 ms
Power control	2 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH of the DTCH / DCH of the DCCH	5% / 0 %

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 | 1st Interleaving (360) |

| RF-segmentation | **402** | **402** | **402** | **402** | Repetition 0% Rate Matching (360) |

Puncturing Ratemaching

402 bit punct. to **380** bit
puncturing-level: **5%**
2 RU→244x2 =
488 Bits available

gross	**488 bit**
-TFCI	-16 bit
-TPC	-2 bit
-Signal.	-90 bit
punc. to	**380 bit**

402 bit punct. to **380** bit
puncturing-level: **5%**
2 RU→244x2 =
488 Bits available

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 | **470** TFCI TPC 16 2 | **470** TFCI TPC 16 2 | **470** TFCI TPC 16 2 | **470** TFCI TPC 16 2 |

Slot segmentation

SF=16

122 MA 122	122 MA 122	122 MA 122	122 MA 122
114 TFCI MA TPC TFCI 112	114 TFCI MA TPC TFCI 112	114 TFCI MA TPC TFCI 112	114 TFCI MA TPC TFCI 112
8 512 2 8 chips	8 512 2 8 chips	8 512 2 8 chips	8 512 2 8 chips

Radio Frame #1 Radio Frame #2 Radio Frame #3 Radio Frame #4

Figure A.7

A.2.7.2   1.28 Mcps TDD Option

Table A.7A

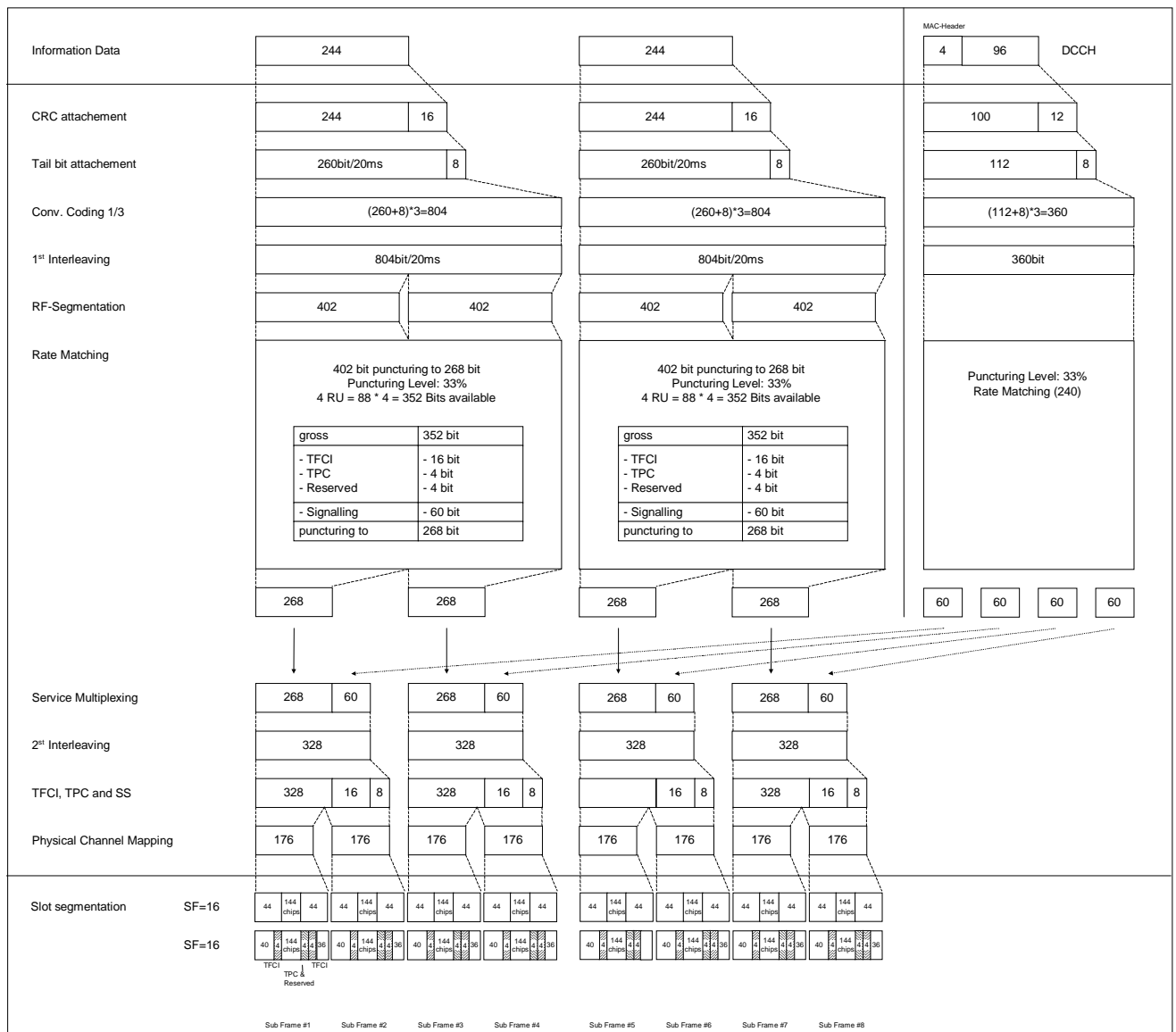| Parameter	Value
Information data rate	12.2 kbps
RU's allocated	1TS (2*SF16) = 2RU/5ms
Midamble	144
Interleaving	20 ms
Power control (TPC)	4 Bit/user/10ms
TFCI	16 Bit/user/10ms
4 Bit reserved for future use (place of SS)	4 Bit/user/10ms
Inband signalling DCCH	2.4 kbps
Puncturing level at Code rate 1/3: DCH of the DTCH / DCH of the DCCH	33% / 33%

Figure A.7A

A.2.8 DL reference measurement channel (2 Mbps)

A.2.8.1 3.84 Mcps TDD Option

Table A.8

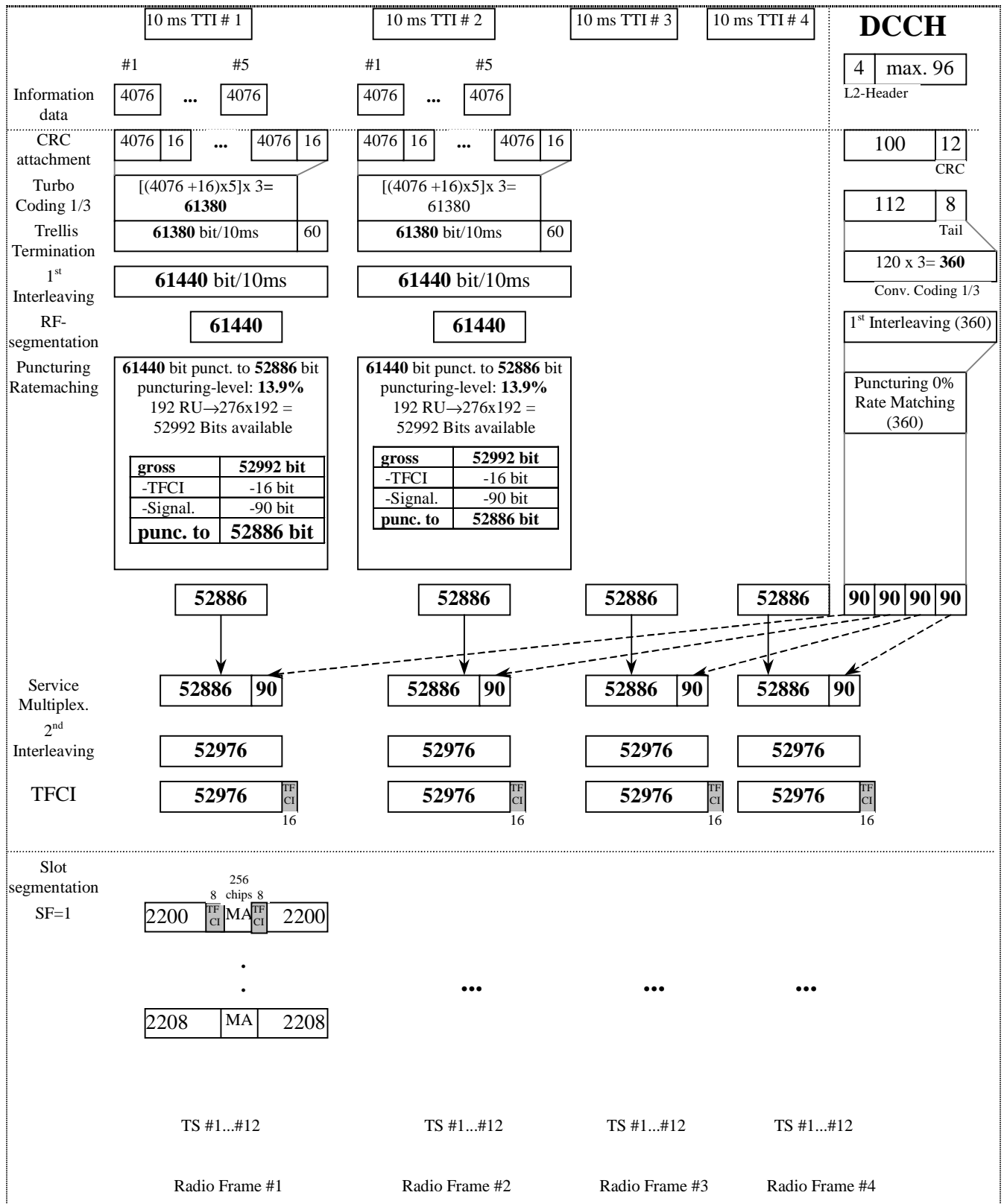| Parameter	Value
Information data rate	2048 kbps
RU´s allocated	16*12TS = 192RU
Midamble	256 chips
Interleaving	10 ms
Power control	0 Bit/user
TFCI	16 Bit/user
Inband signalling DCCH	2 kbps
Puncturing level at Code rate 1/3 : DCH of the DTCH / DCH of the DCCH	13.9% / 0%

Figure A.8

A.2.8.2   1.28 Mcps TDD Option

Table A.8A

Parameter	Value
Information data rate	2048 kbps
RU's allocated	5TS (1*SF1) = 80RU/5ms
Midamble	144
Interleaving	10 ms
Power control (TPC)	6 Bit/user/10ms
TFCI	48 Bit/user/10ms
Synchronisation Shift (SS)	6 Bit/user/10ms
Inband signalling DCCH	no
Coding	no
Modulation	8PSK

Figure A.8A

A.3 HSDPA reference measurement channels

A.3.1 void

A.3.2 HSDPA reference measurement channels for 1.28 Mcps TDD option

A.3.2.1 Reference measurement channels for 1.4 Mbps UE class

A.3.2.1.1 QPSK modulation scheme

Table [A.9]

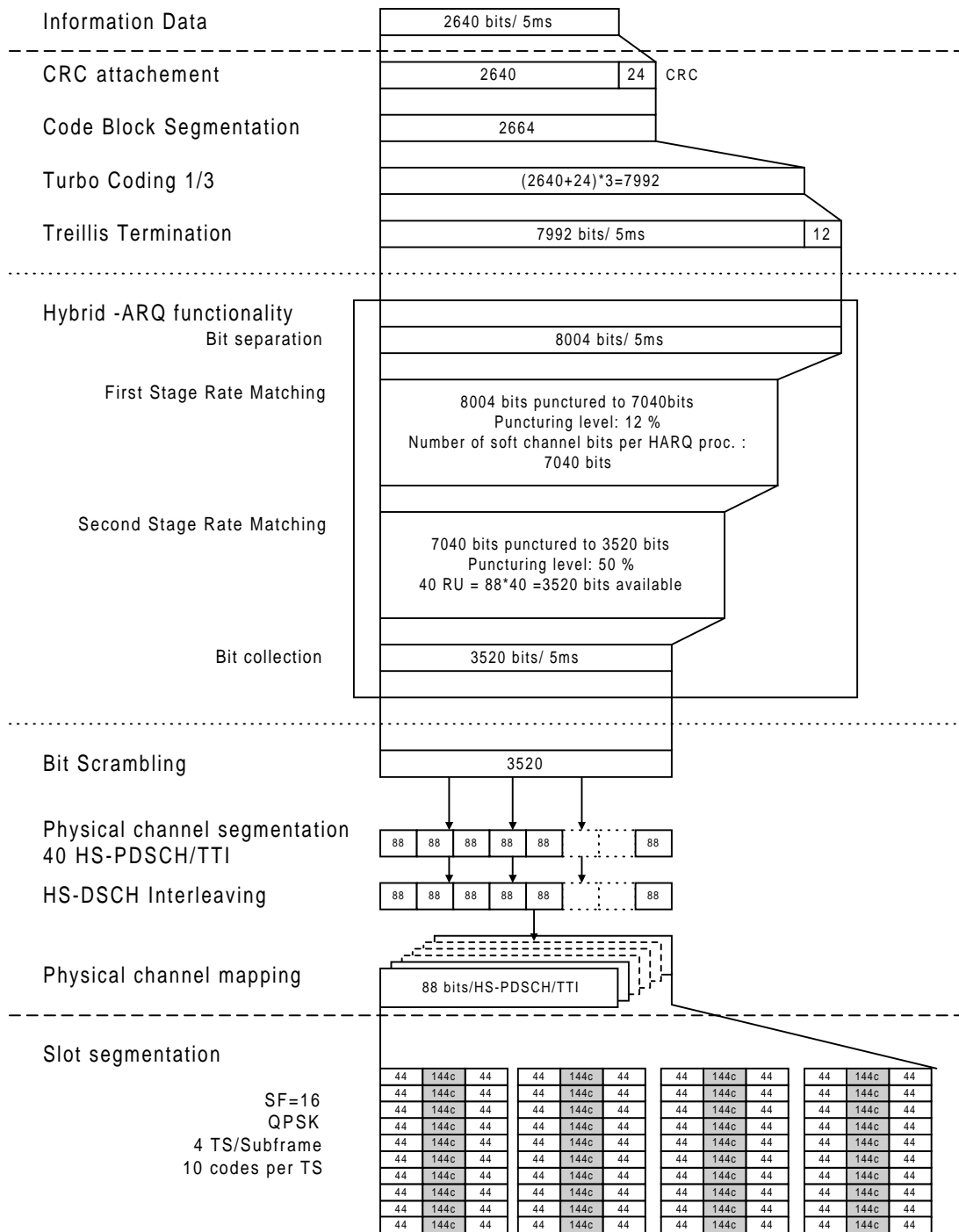| Parameter	Value
Maximum information data rate	528 kbps
RU´s allocated	4TS (10*SF16) = 40RU/5ms
Midamble	144 chips
Puncturing level at code rate 1/3 : first stage/second stage	12% / 50%

Figure [A.9]

A.3.2.1.2   16QAM modulation scheme

Table [A.10]

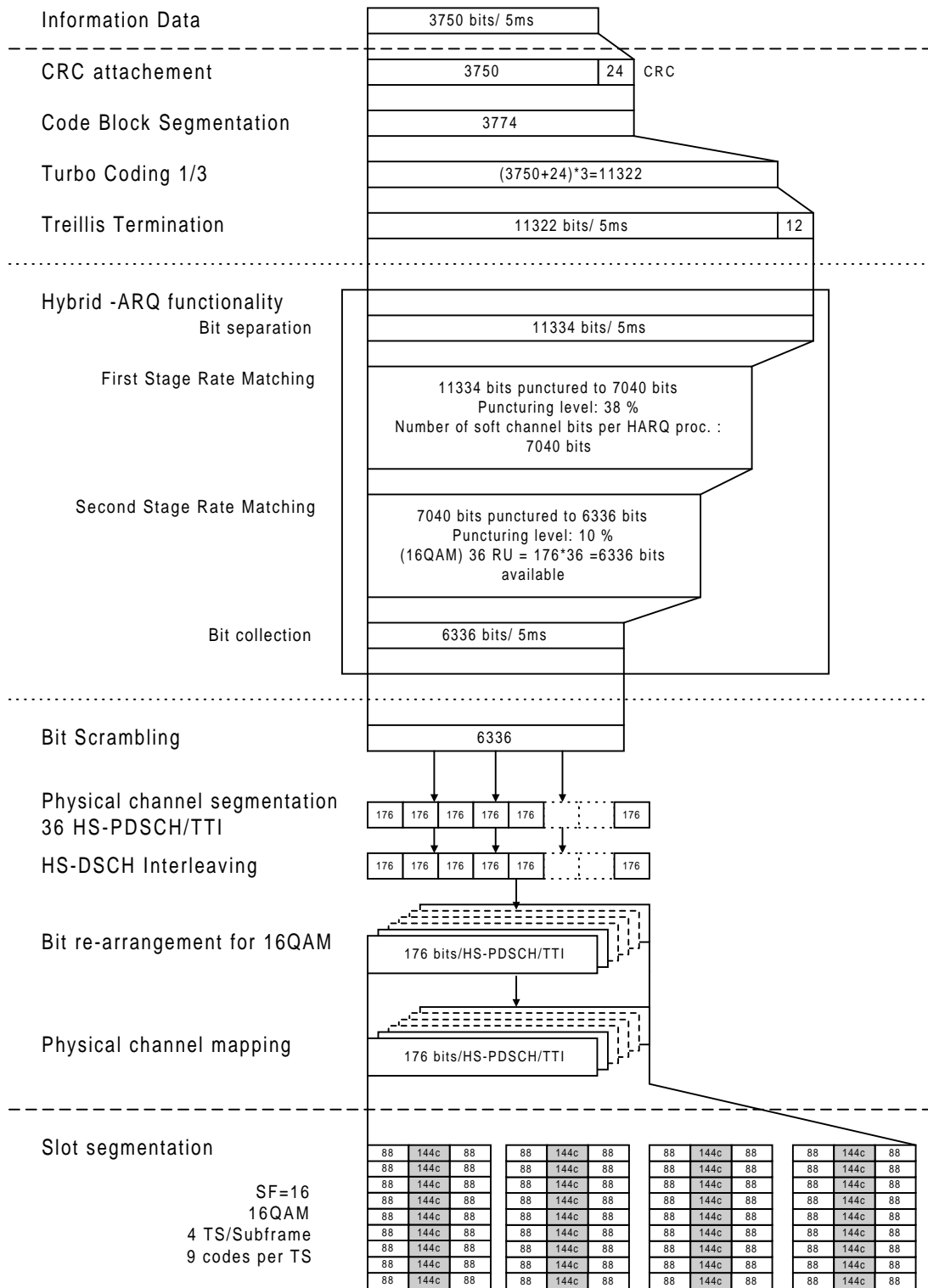| Parameter	Value
Maximum information data rate	750 kbps
RU´s allocated	4TS (9*SF16) = 36RU/5ms
Midamble	144 chips
Puncturing level at code rate 1/3 : first stage/second stage	38% / 10%

Figure [A.10]