

Source: Siemens AG
Title: Corrections for TDD part of TR 25.944
Document for: Approval

Introduction

The attached CR includes corrections for the TDD part of TR 25.944, which are based on technical reasons. These corrections are aligned with latest version of the Typical Radio Parameter Sets from GSMA ISG (version 1.3).

Corrections in the TDD Part of the TR 25.944

Section 4.2.1.2 Example for PCH and FACH

- ?? It was found that 64 bits are not enough for a paging message, which has an IMSI, and 80 bits are needed for the IMSI. Therefore, TrBlk size of 64 bits was replaced by 80 bits.
- ?? Transport block set size of 168x3 bits was deleted since otherwise coding block segmentation would be needed.

Section 4.2.1.3.1.2 Example for 12.2 kbps data

- ?? In table 28 of section 4.2.1.3.1.2, transport block size and TFCS were changed so that the CRC attachment for 0 TrBlk size is not applied (neither for uplink, nor for downlink) in order to avoid a concern on additional overhead on uplink Iub caused by CRC OK/NG indication during DTX and to allow for efficient DTX.
- ?? In TFCS of table 28, the number of transport block is clarified.

Section 4.2.1.3.1.4 Example for 64/128/144 kbps packet data

- ?? TF of 3x336 bits for 64 kbps was added to avoid additional transmission delay

Section 4.2.1.3.1.5 Example for 384 kbps packet data

- ?? TF of 16x336 and 20x336 were added for TTI of 20 ms to avoid additional transmission delay.

CHANGE REQUEST		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.	
TR 25.944	CR	04	Current Version: 3.2.0
GSM (AA.BB) or 3G (AA.BBB) specification number ?		? CR number as allocated by MCC support team	
For submission to: RAN #10 <i>list expected approval meeting # here ?</i>	for approval <input checked="" type="checkbox"/>	for information <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input type="checkbox"/> <i>(for SMG use only)</i>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Formv2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
(at least one should be marked with an X)

Source: Siemens AG **Date:** 22.11.2000

Subject: TDD related changes for TR25.944, update

Work item: TR 25.944

Category:	F Correction <input checked="" type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

Reason for change: This CR includes corrections for TDD part of TR 25.944, which is based on technical reasons. These corrections are aligned with latest version of the Typical Radio Parameter Sets from GSMA ISG version 1.3.

Clauses affected: 4.2.1.2, 4.2.1.3.1.2, 4.2.1.3.1.4, 4.2.1.3.1.4

Other specs affected:	Other 3G core specifications <input type="checkbox"/> ? List of CRs: Other GSM core specifications <input type="checkbox"/> ? List of CRs: MS test specifications <input type="checkbox"/> ? List of CRs: BSS test specifications <input type="checkbox"/> ? List of CRs: O&M specifications <input type="checkbox"/> ? List of CRs:	
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Other comments:



help.doc

<----- double-click here for help and instructions on how to create a CR.

4.2.1.2 Example for PCH and FACH

Table 26: Parameters for PCH and FACH

Transport block size	PCH	$N_{PCH} = \underline{6480}$ or 240 bits
	FACH1	360 bits
	FACH2	168 bits
Transport block set size	PCH	$\underline{6480} * B_{PCH}$ or $240 * B_{PCH}$ bits ($B_{PCH}=0,1$)
	FACH1	$360 * B_{FACH1}$ bits ($B_{FACH1}=0,1$)
	FACH2	$168 * B_{FACH2}$ bits ($B_{FACH2}=0,1,2,3$)
Coding	PCH, FACH2	CC, coding rate = 1/2
	FACH1	TC
TTI		10 ms
Midamble		512 chips
Codes and time slots		SF = 16 x 2 x 1 time slot
TFCI		16 bit
TPC		0 bit

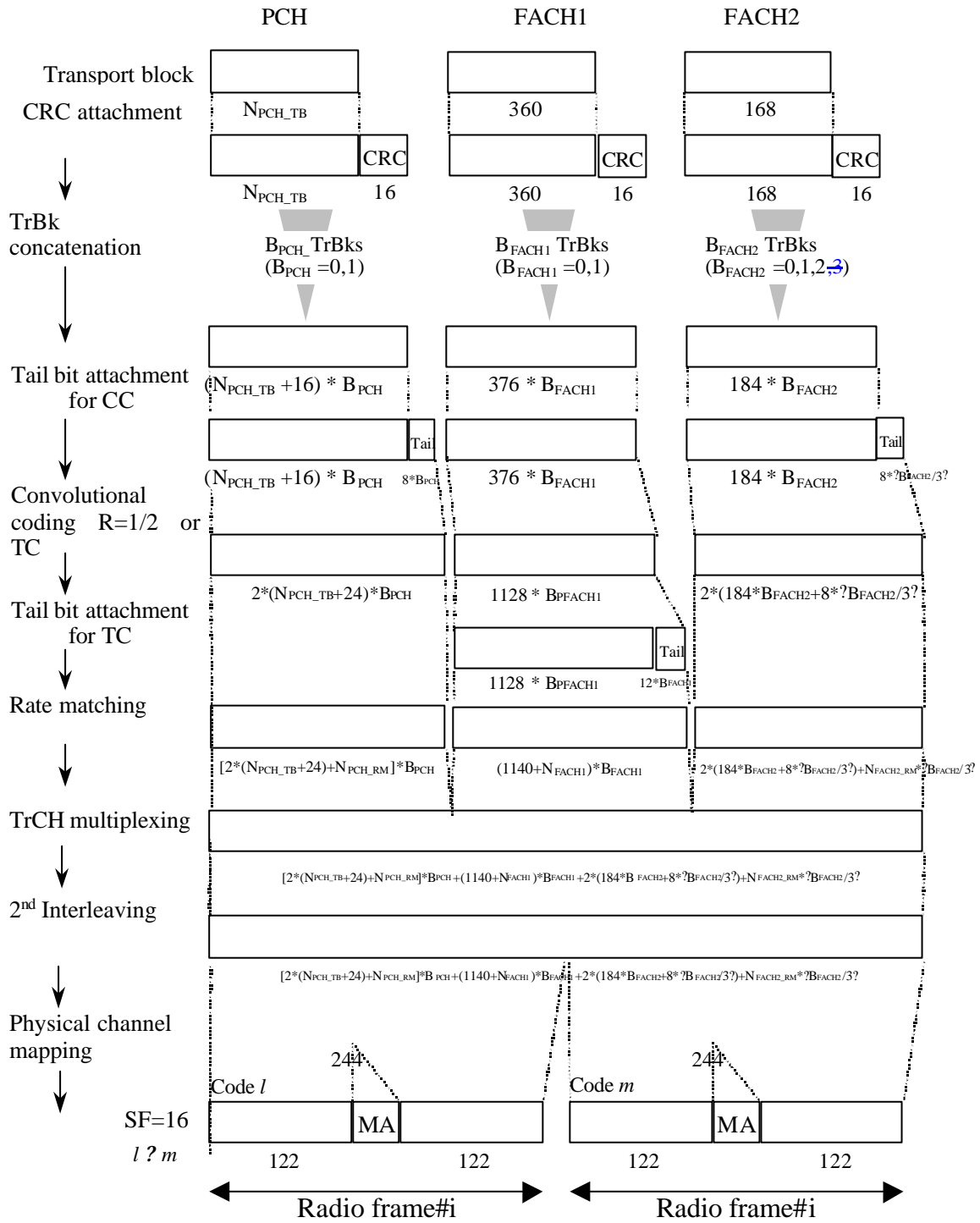


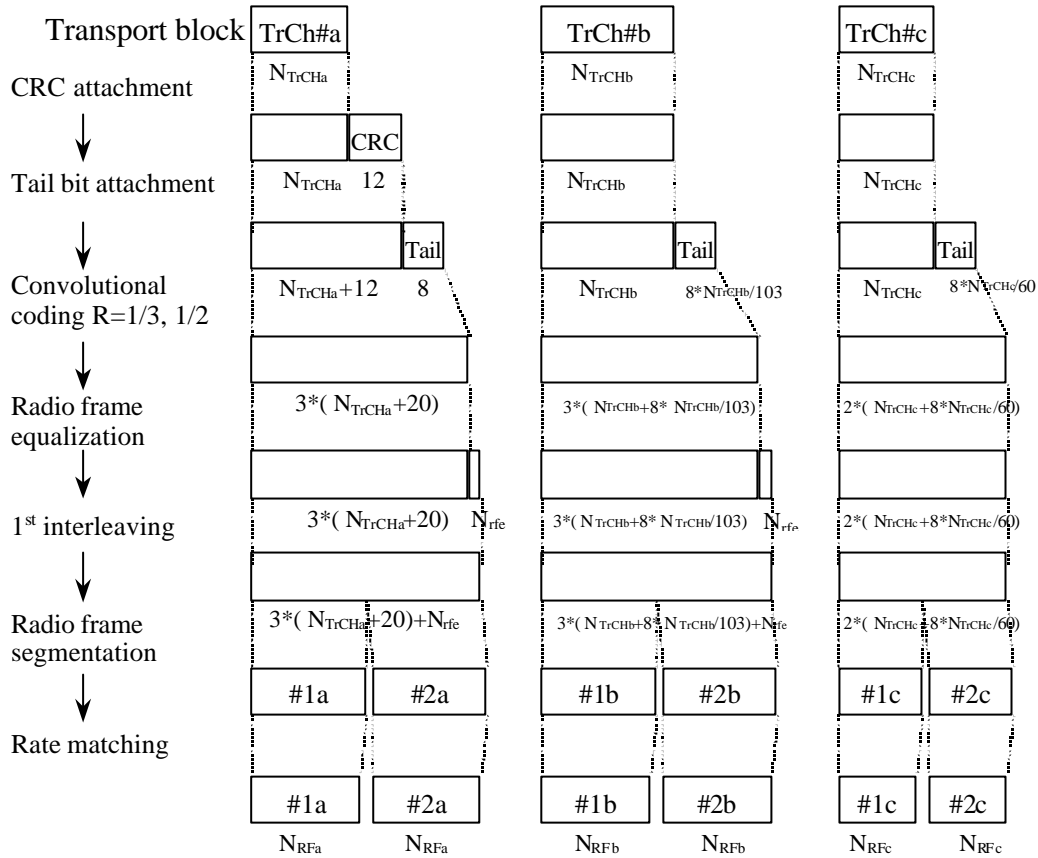
Figure 30: Channel coding and multiplexing example for PCH and FACH

4.2.1.3.1.2 Example for 12.2 kbps data

NOTE: This example can be applied to AMR speech.

Table 28: Parameter examples for 12.2 kbps data

The number of TrChs		3
Transport block size	TrCH#a	$N_{\text{TrCHa}}=0$, 39 or 81 bits
	TrCH#b	$N_{\text{TrCHb}}=0$ or 103 bits
	TrCH#c	$N_{\text{TrCHc}}=0$ or 60 bits
Transport block set size	#1	$N_{\text{TrCHa}}=1*81$, $N_{\text{TrCHb}}=1*103$, $N_{\text{TrCHc}}=1*60$ bits
	#2	$N_{\text{TrCHa}}=1*39$, $N_{\text{TrCHb}}=0*103$, $N_{\text{TrCHc}}=0*60$ bits
	#3	$N_{\text{TrCHa}}=0*81$, $N_{\text{TrCHb}}=0*103$, $N_{\text{TrCHc}}=0*60$ bits
CRC		12 bits (attached only to TrCh#a)
CRC parity bit attachment for 0 bit transport block		Applied only to TrCH#a
Coding		CC,
TTI		coding rate = 1/3 for TrCh#a, b coding rate = 1/2 for TrCh#c
		20 ms



$$\begin{aligned}
 N_{RFa} &= [3*(N_{TrCHa}+20)+N_{RMa}+N_{rfe}]/2 \\
 N_{RFb} &= [3*(N_{TrCHb}+8*N_{TrCHb}/103)+N_{RMB}+N_{rfe}]/2 \\
 N_{RFc} &= [2*(N_{TrCHc}+8*N_{TrCHc}/60)+N_{RMc}]/2
 \end{aligned}$$

To TrCh Multiplexing

~~* CRC and tail bits for TrCH#a is attached even if $N_{TrCHa}=0$ bits since CRC parity bit attachment for 0 bit transport block is applied.~~

Figure 32: Channel coding and multiplexing example for 12.2 kbps data

4.2.1.3.1.4 Example of 64/128/144 kbps packet data

NOTE: In this example it is assumed, that maximum data rate of RLC payload is 64/128/144 kbps, and MAC and RLC overhead in a transport block is 16 bits.

Table 30: Parameters for 64/128/144 kbps packet data

The number of TrChs	1	
Transport block size	336 bits	
Transport block set size	64 kbps	336*B bits (B = 0, 1, 2, <u>3</u> , 4)
	128 kbps	336*B bits (B = 0, 1, 2, 4, 8)
	144 kbps	336*B bits (B = 0, 1, 2, 4, 8, 9)
CRC	16 bits	
Coding	Turbo coding, coding rate = 1/3	
TTI	20 ms	

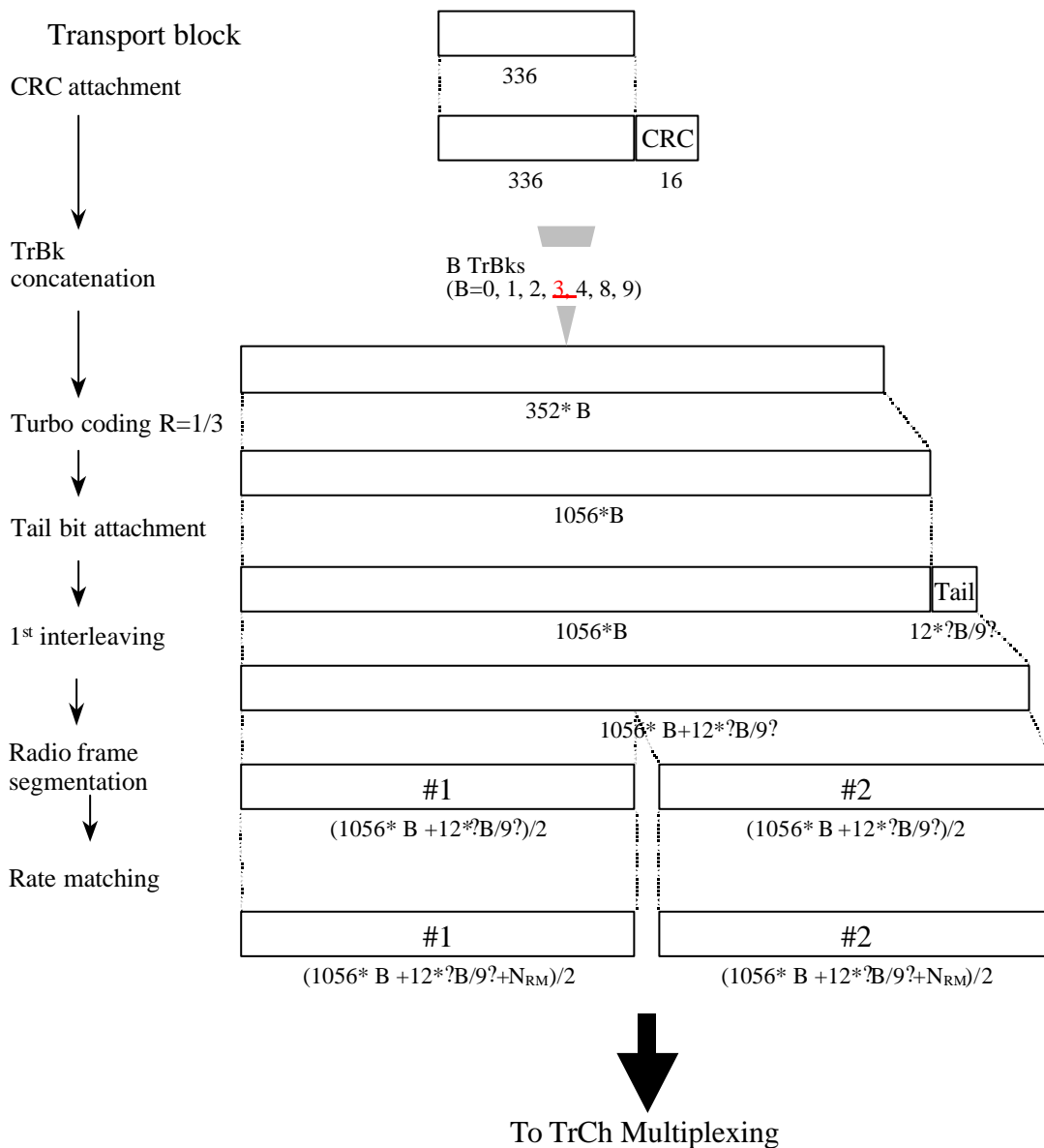


Figure 34: Channel coding and multiplexing example for 64/128/144 kbps packet data

4.2.1.3.1.5 Example of 384 kbps packet data

NOTE: In this example it is assumed, that the maximum data rate of RLC payload is 384 kbps, and MAC and RLC overhead in a transport block is 16 bits.

Table 31: Parameters for 384 kbps packet data

The number of TrChs	1
Transport block size	336 bits
Transport block set size	336*B bits (B = 0, 1, 2, 4, 8, 12 for TTI=10ms, B=0,1,2,4,8,12, <u>16, 20, 24</u> for TTI=20ms)
CRC	16 bits
Coding	Turbo coding, coding rate = 1/3
TTI	10 or 20 ms

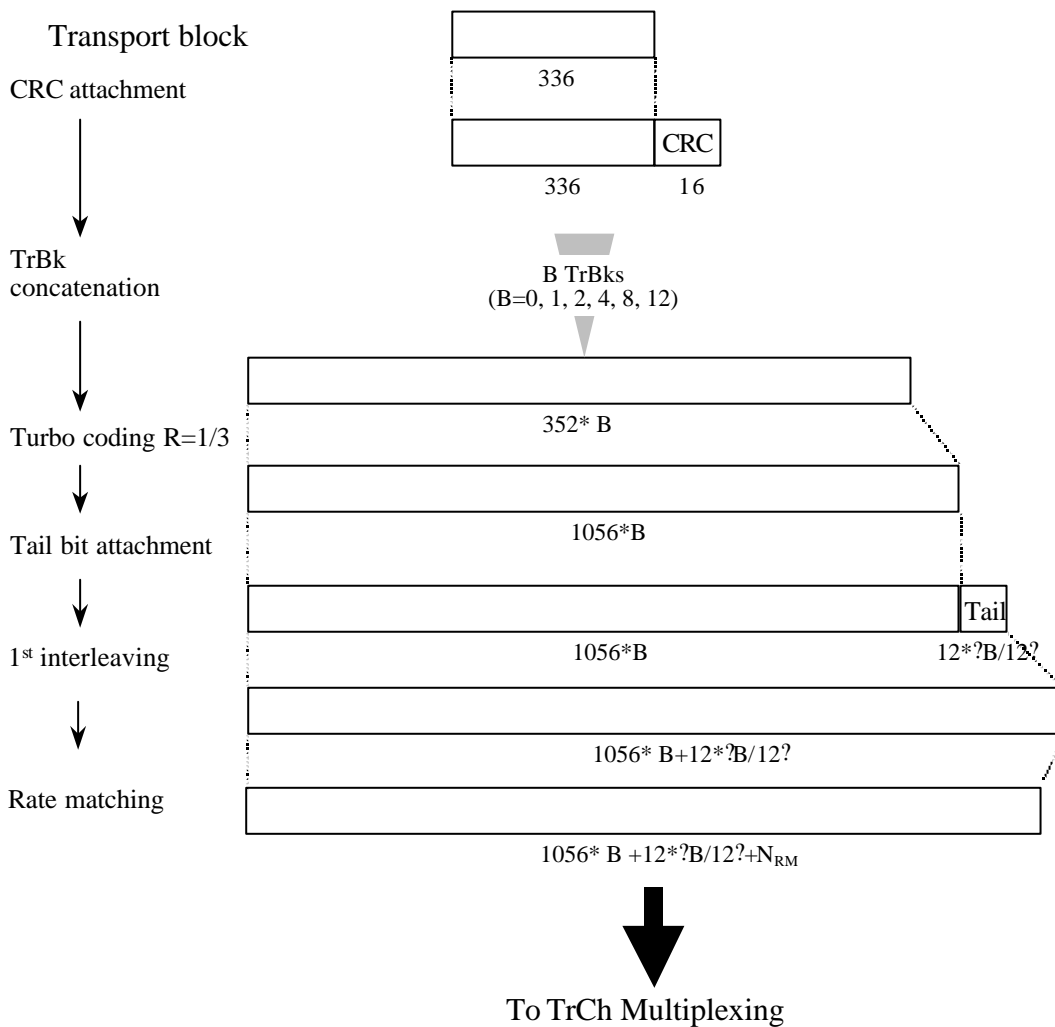


Figure 35: Channel coding and multiplexing example for 384 kbps packet data in case of TTI=10ms

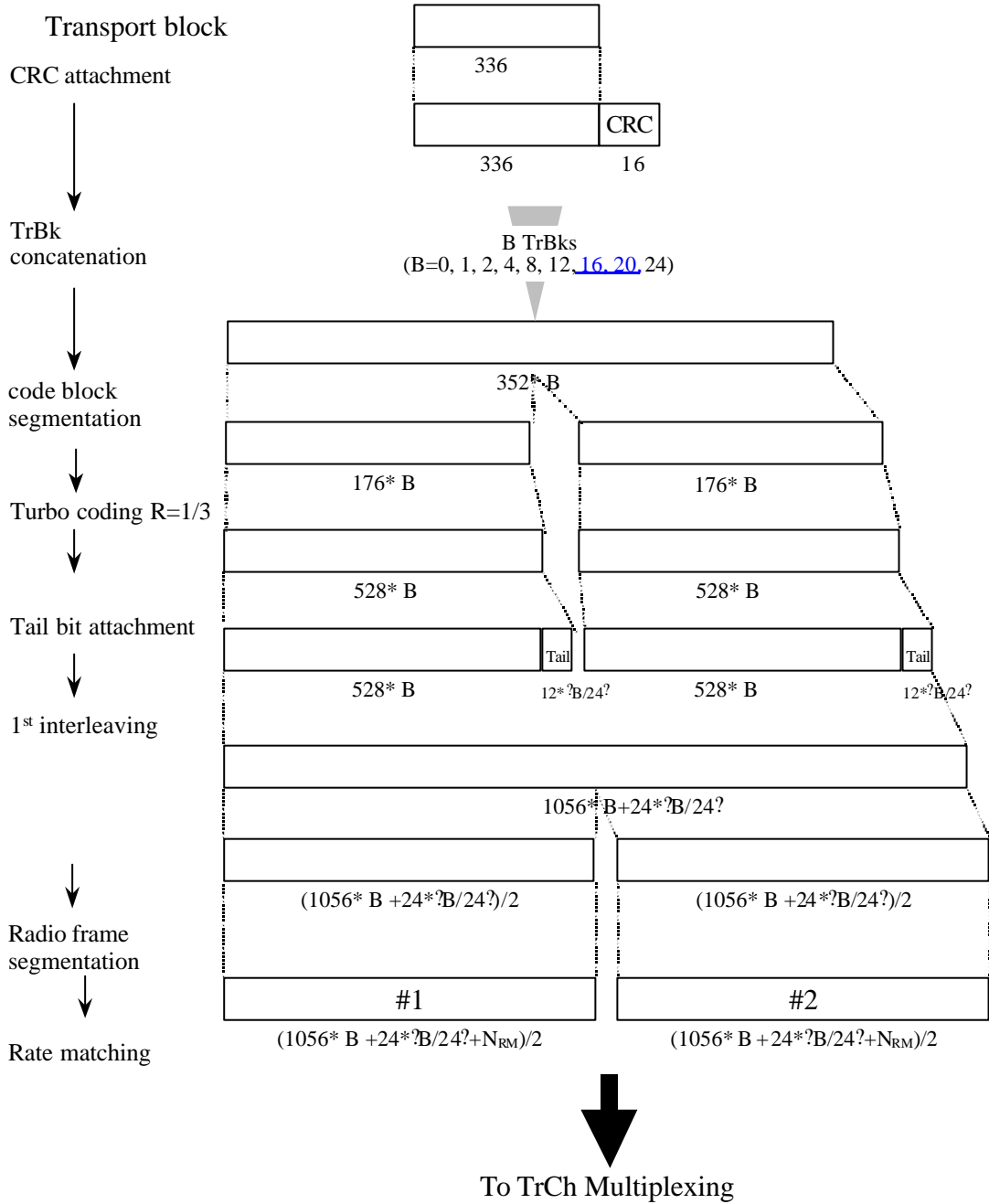


Figure 36: Channel coding and multiplexing example for 384 kbps packet data in case of TTI=20ms