

TSG-RAN Working Group1 meeting #7
30 August – 3 September 1999
Hanover, Germany

TSGR1#7(99)B49

Agenda Item: Ad Hoc 5
Source: NTT DoCoMo
Title: Text proposals for detailed channel coding
Document for: Desision

Introduction

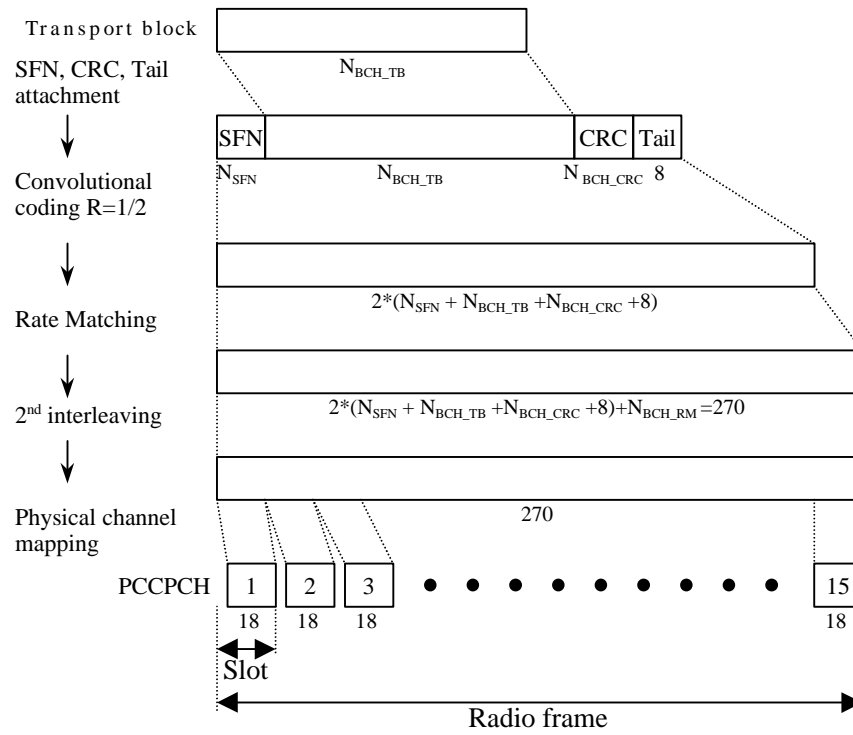
Inclusion of channel coding details as an informative annex was proposed in R1-99648. And, this proposal was endorsed in AH5 of WG1#6. This document shows text proposal for the detailed channel coding. The detailed channel coding consists of coding flow and tables. In order to describe flexibly, the size of each field is shown using variables. And exact bit size will be describes in the table.

Text proposal

25.212 Annex A

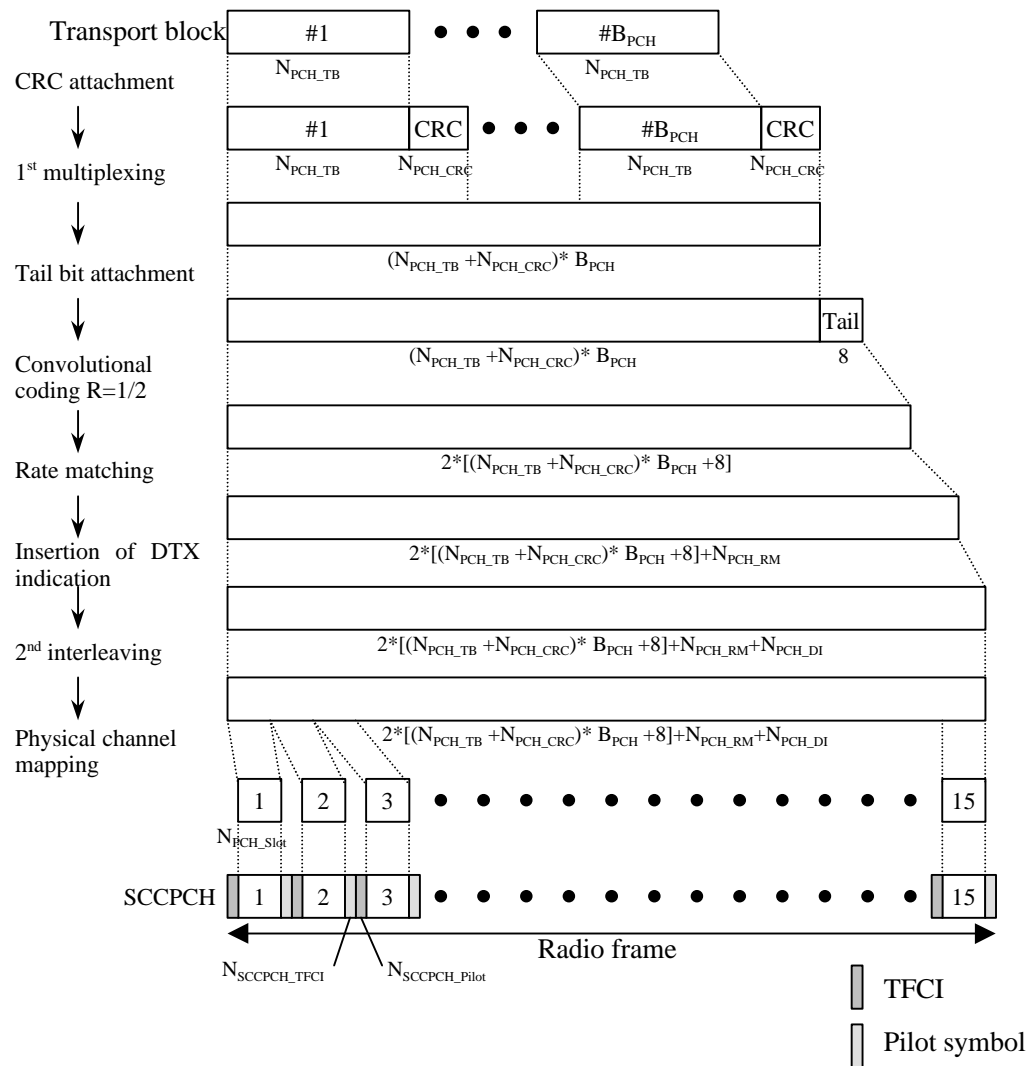
1. Downlink channel coding

1.1. BCH



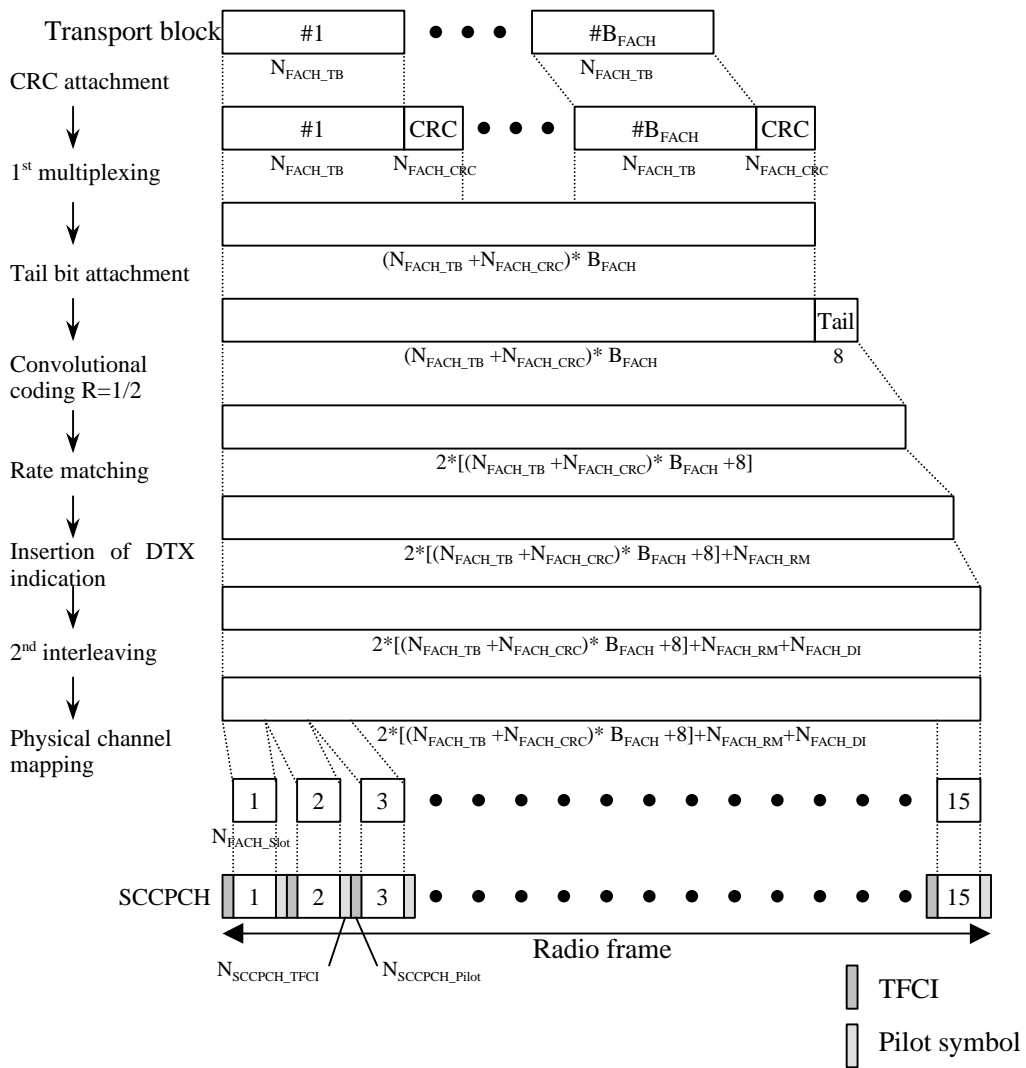
Symbol rate (ksp/s)	The number of bits			
	N_{BCH_TB}	N_{SFNBCH_TB}	N_{BCH_CRC}	N_{BCH_RM}
15	96	12	12	7

1.2. PCH



Symbol rate (ksps)	B_{PCH}	N_{SCCPCH_TFCI} (bits)	N_{SCCPCH_Pilot} (bits)	N_{PCH_Slot} (bits)	N_{PCH_TB} (bits)	N_{PCH_CRC} (bits)	N_{PCH_DI} (bits)

1.3. FACH

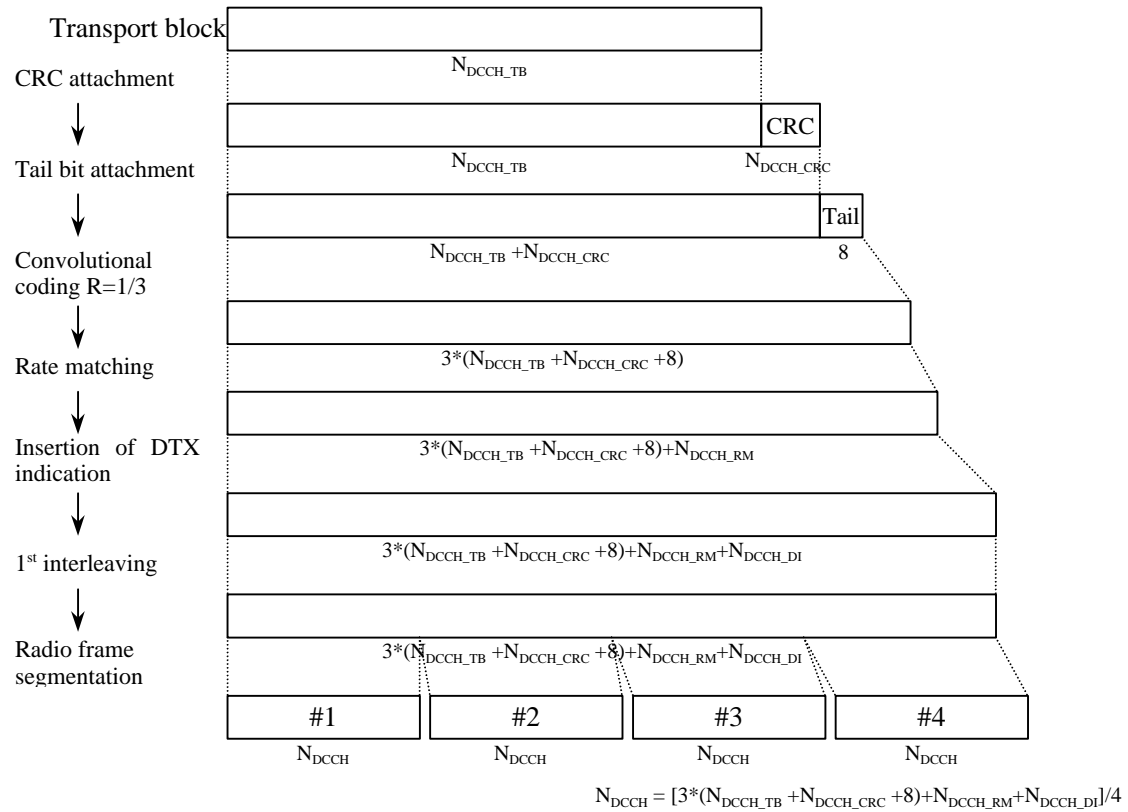


Symbol rate (ksps)	B_{FACH}	N_{SCCPCH_TFCI} (bits)	N_{SCCPCH_Pilot} (bits)	N_{FACH_Slot} (bits)	N_{FACH_TB} (bits)	N_{FACH_CRC} (bits)	N_{FACH_DI} (bits)

1.4. DCH

1.4.1. DCH -> Radio frame segmentation

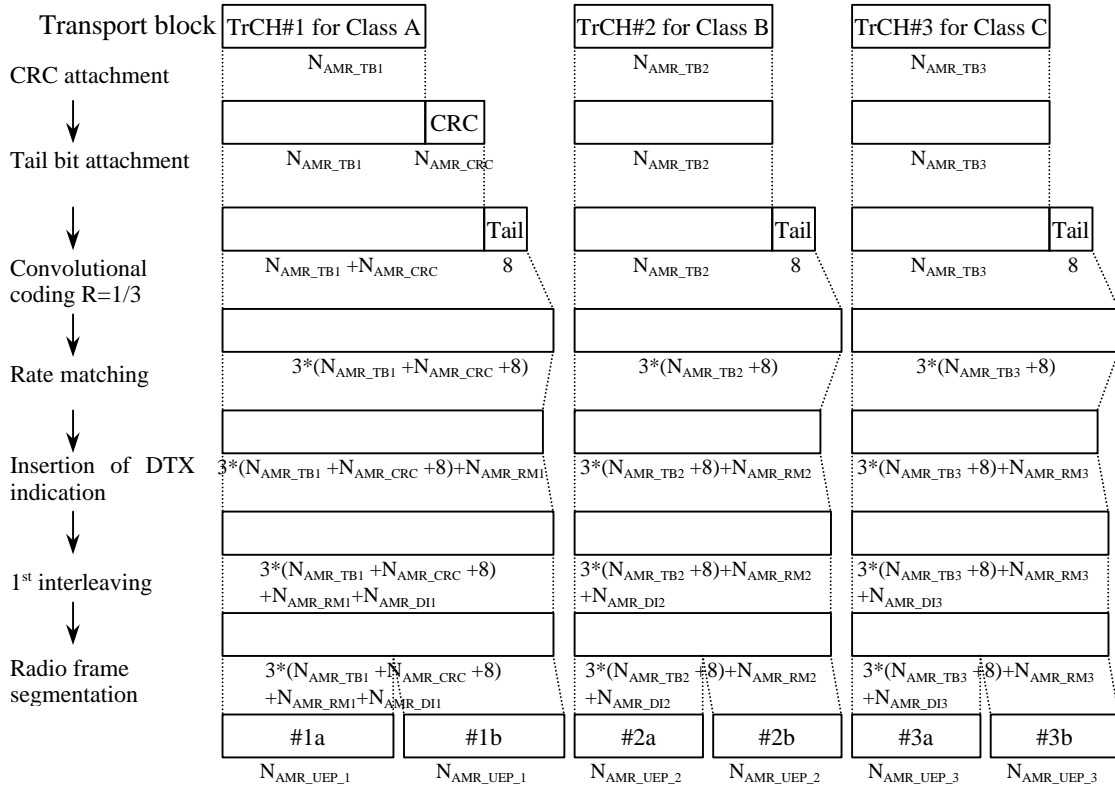
1.4.1.1. DCCH



To 2nd Multiplexing

Service	Symbol rate (ksps)	The number of bits		
		N_{DCCH_TB}	N_{DCCH_CRC}	N_{DCCH_DI}
AMR	30			

1.4.1.2. AMR voice data



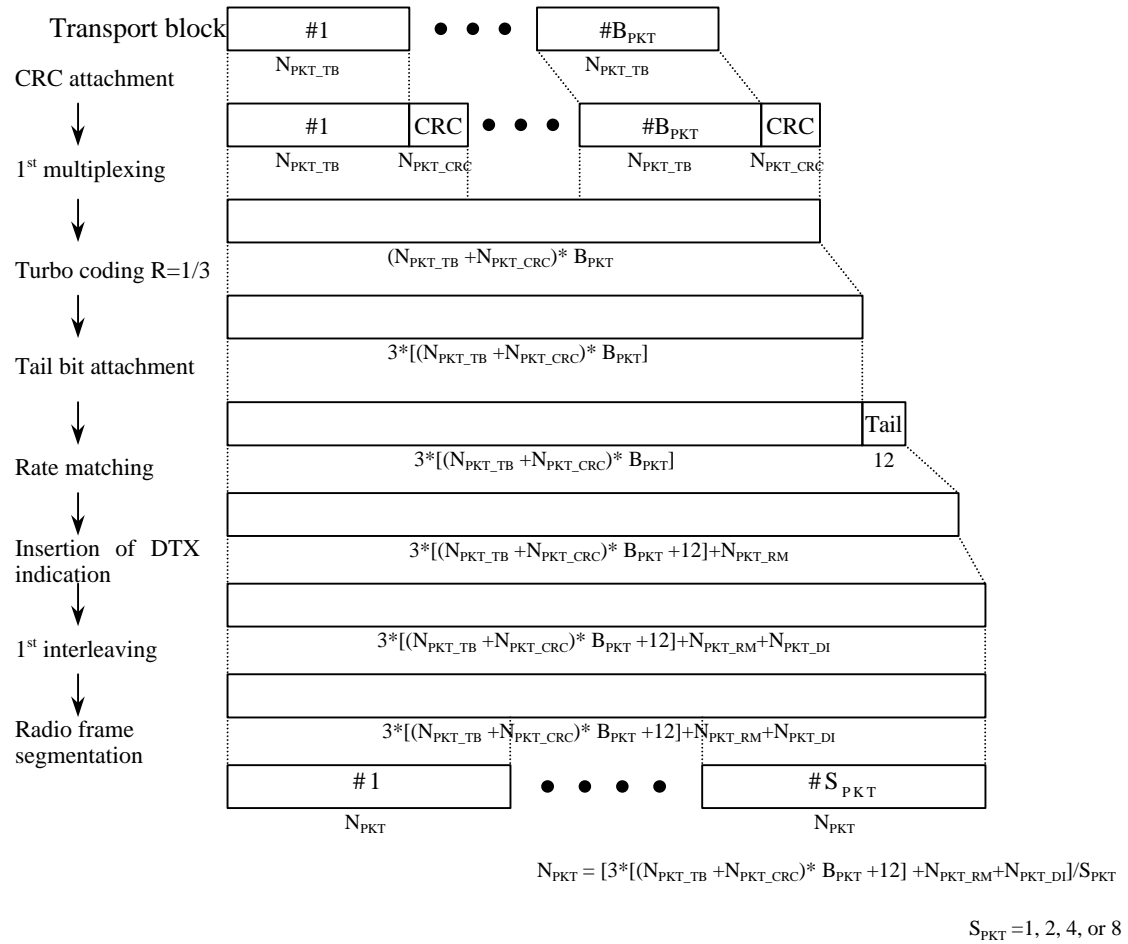
$$N_{AMR_UEP_1} = [3*(N_{AMR_TB1} + N_{AMR_CRC} + 8) + N_{AMR_RM1} + N_{AMR_DI1}] / 2$$


$$N_{AMR_UEP_2} = [3*(N_{AMR_TB2} + 8) + N_{AMR_RM2} + N_{AMR_DI2}] / 2$$

$$N_{AMR_UEP_3} = [3*(N_{AMR_TB3} + 8) + N_{AMR_RM3} + N_{AMR_DI3}] / 2$$

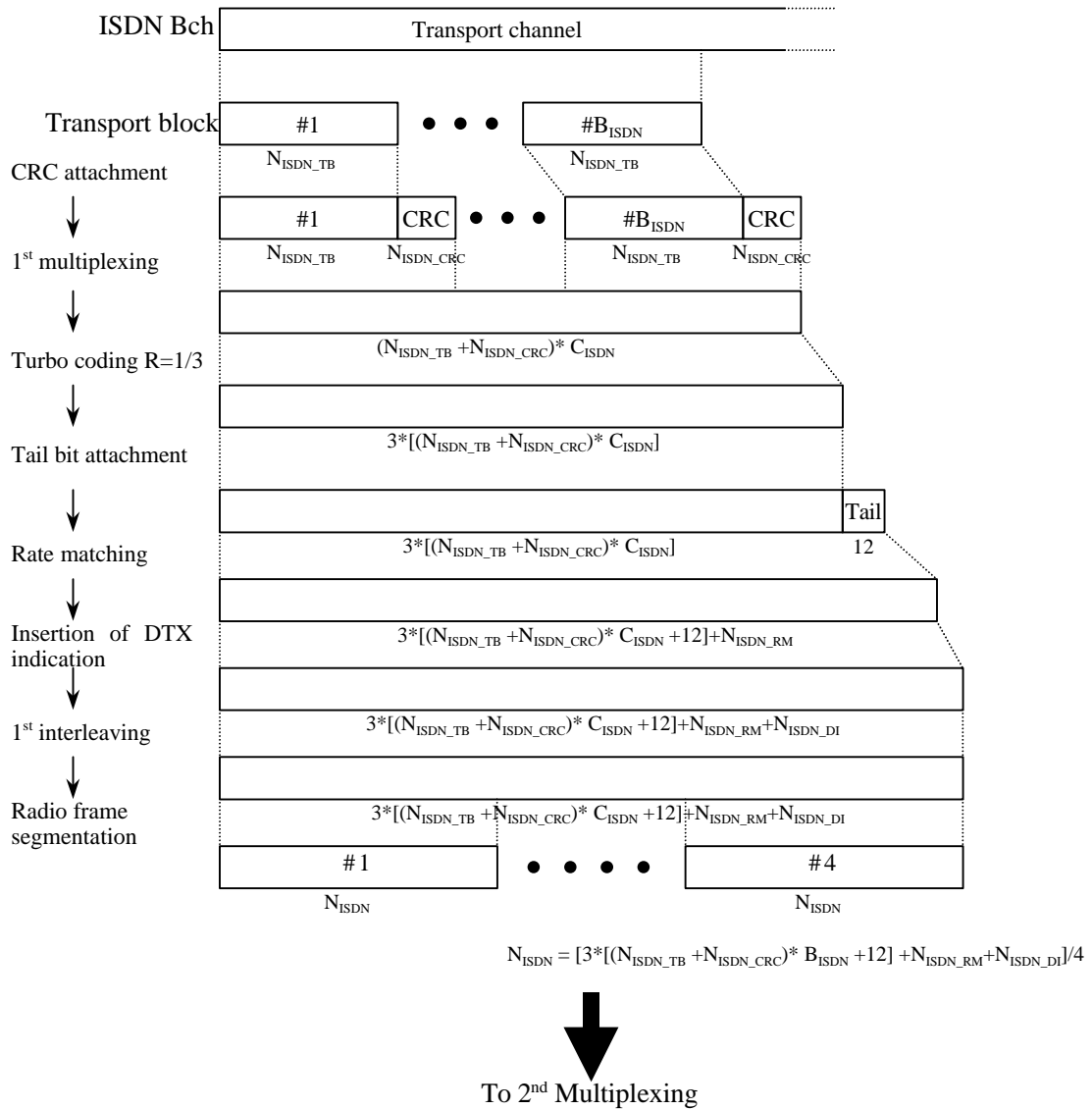
↓
To 2nd Multiplexing

1.4.1.3. Packet

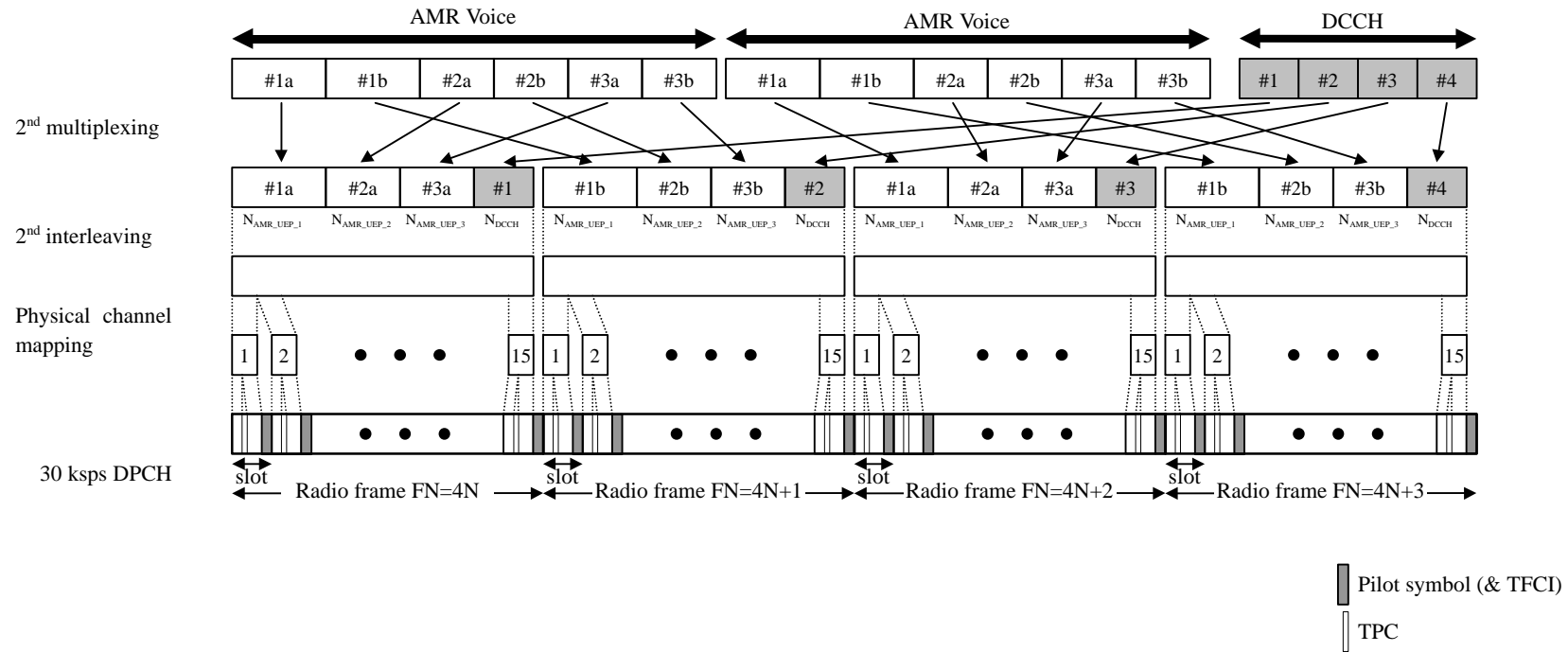



 To 2nd Multiplexing

1.4.1.4. ISDN

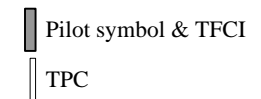
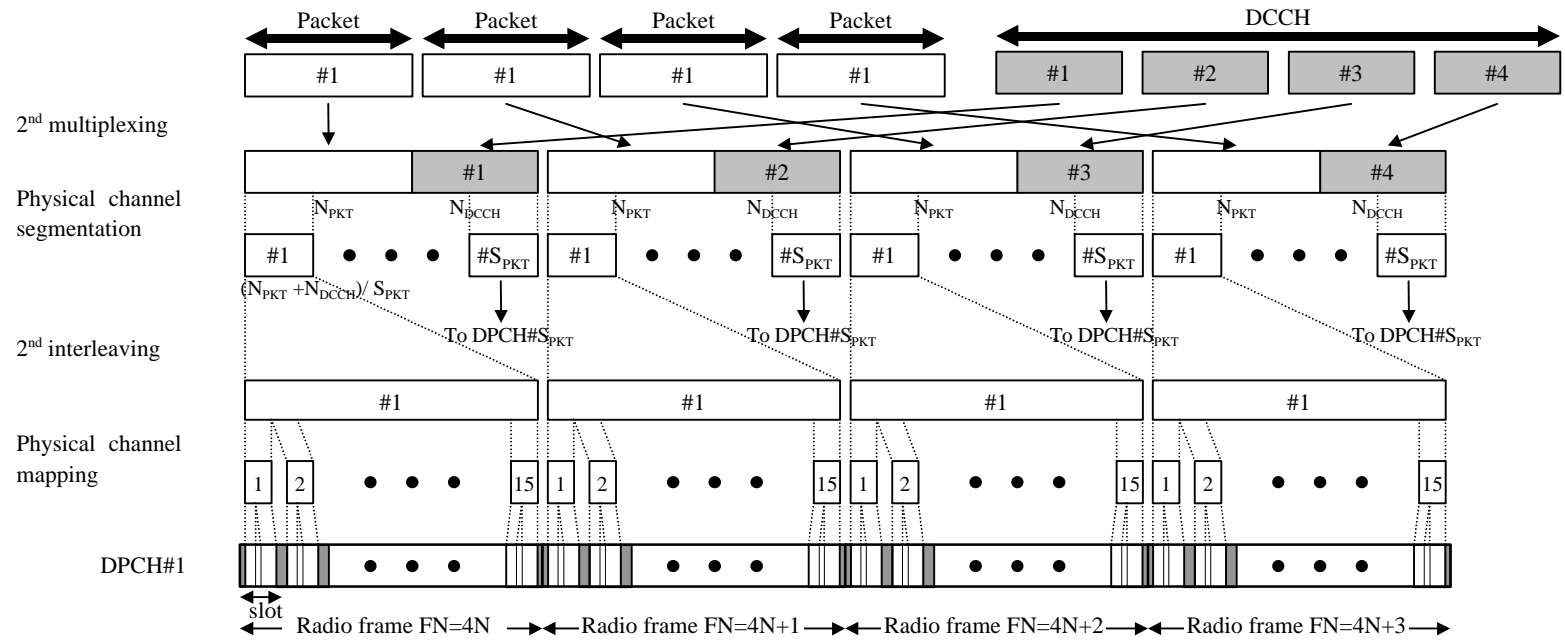


1.4.2. 2nd multiplexing -> Physical channel mapping
 1.4.2.1. AMR +DCCH

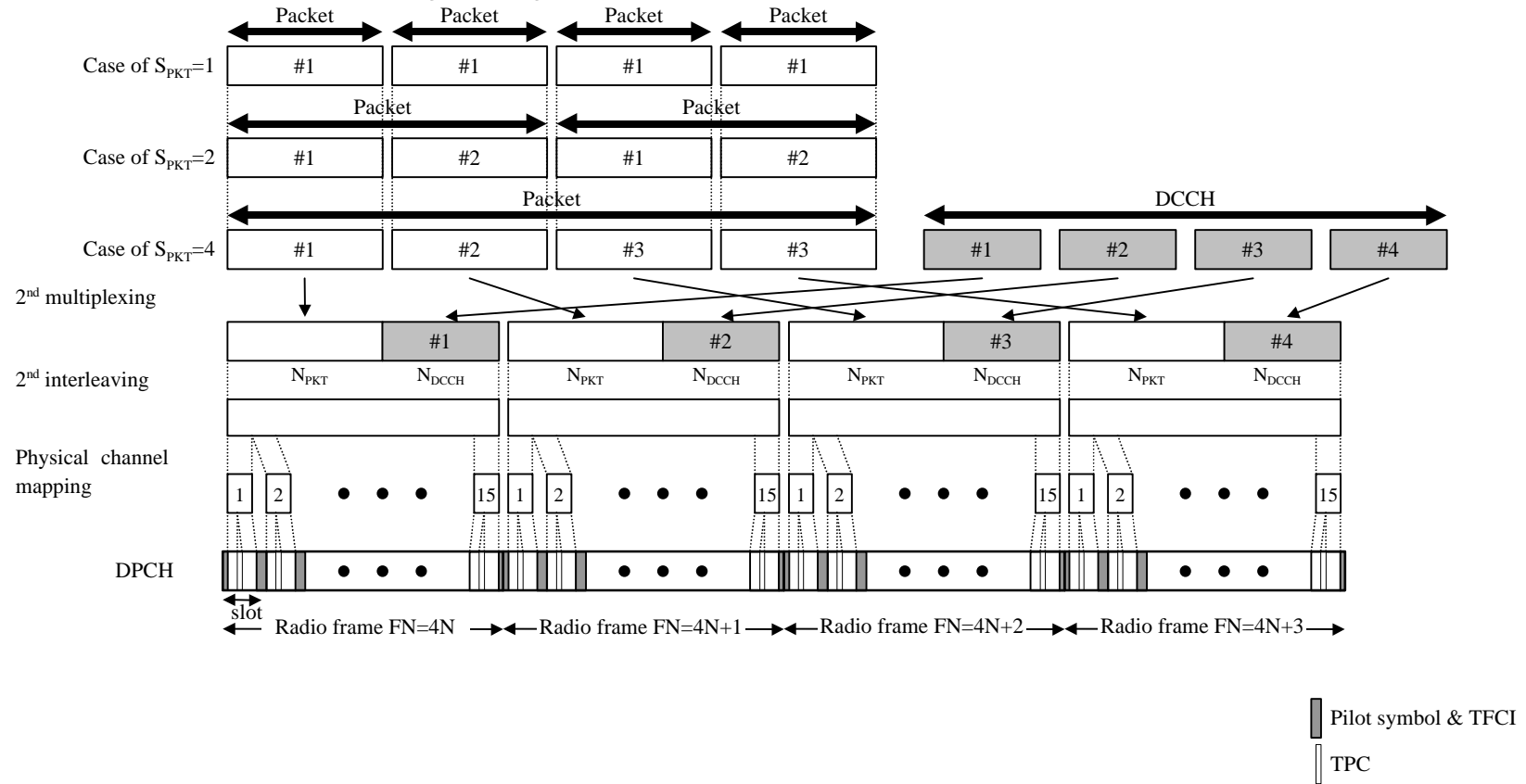


1.4.2.2. Packet + DCCH

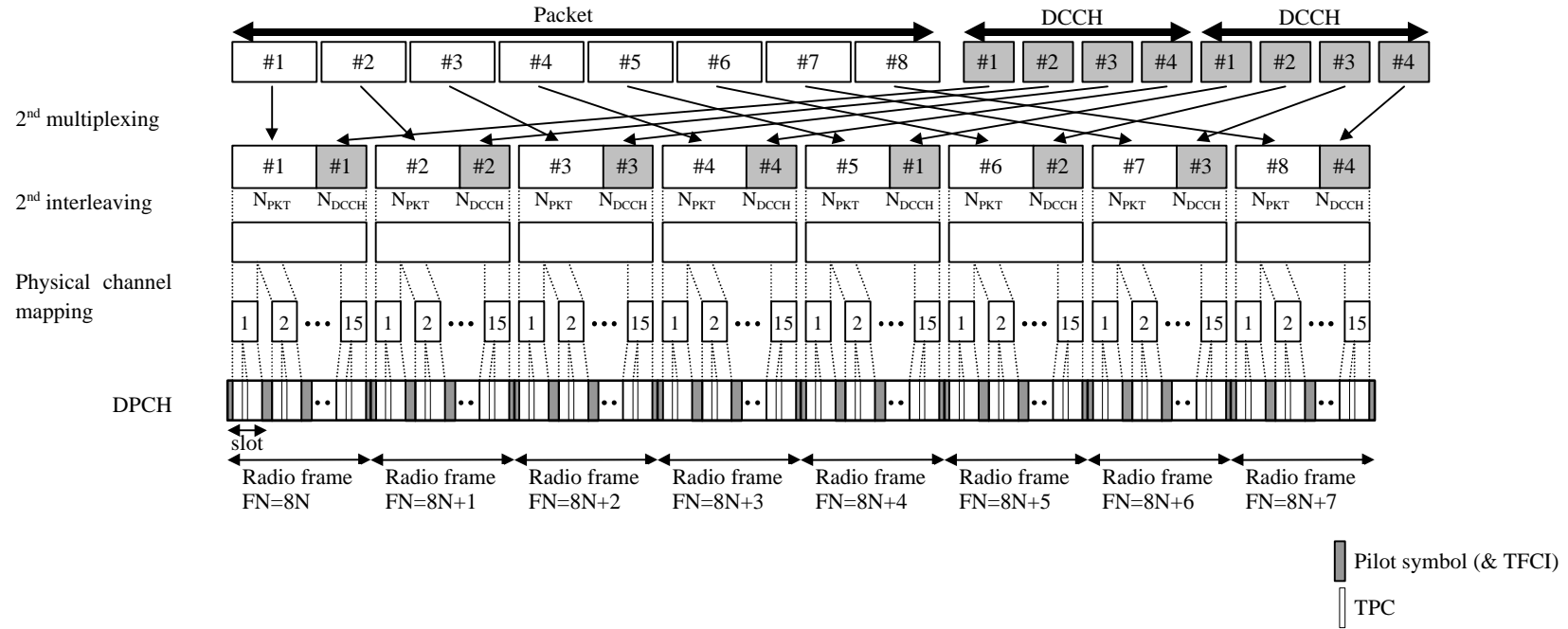
1.4.2.2.1. $S_{PKT}=1$ and mapping to multi-physical channels



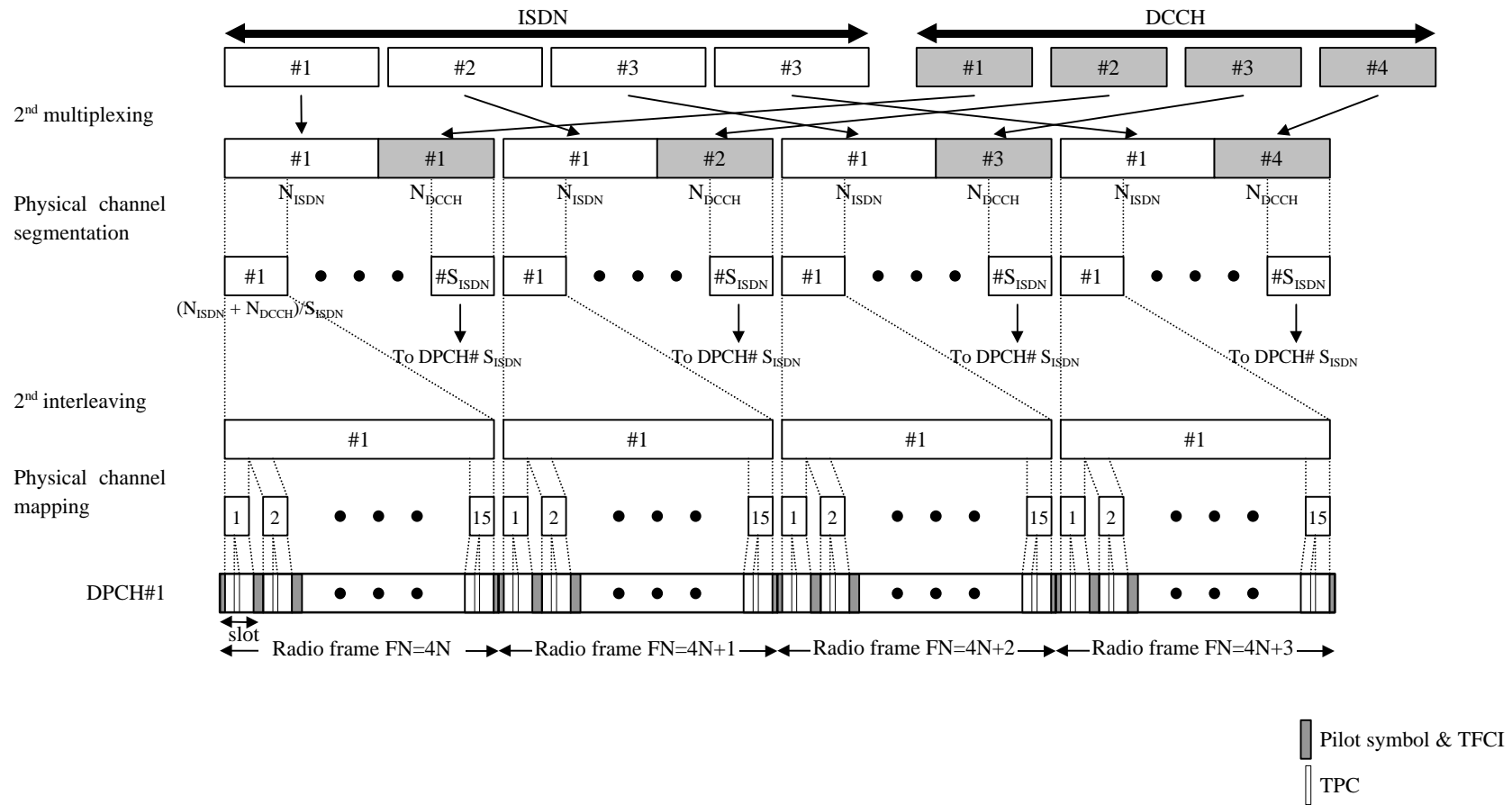
1.4.2.2.2. $S_{PKT}=1, 2, \text{ or } 4$ and mapping to a single physical channel



1.4.2.2.3. $S_{PKT}=8$ and mapping to a single physical channel

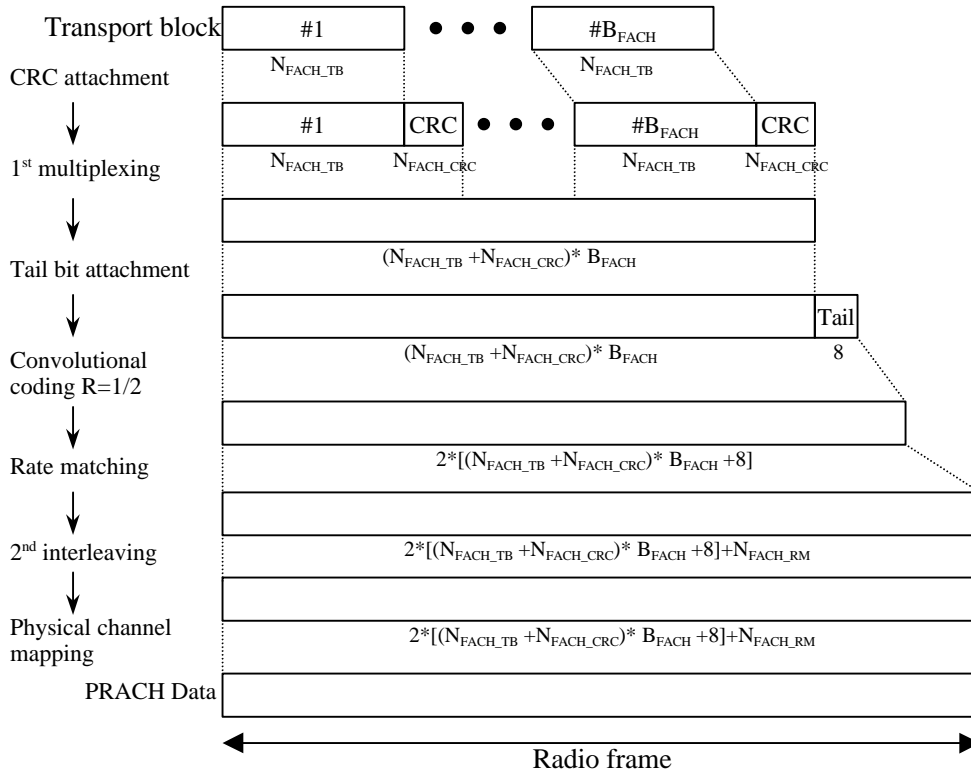


1.4.2.3. ISDN



2. Uplink channel coding

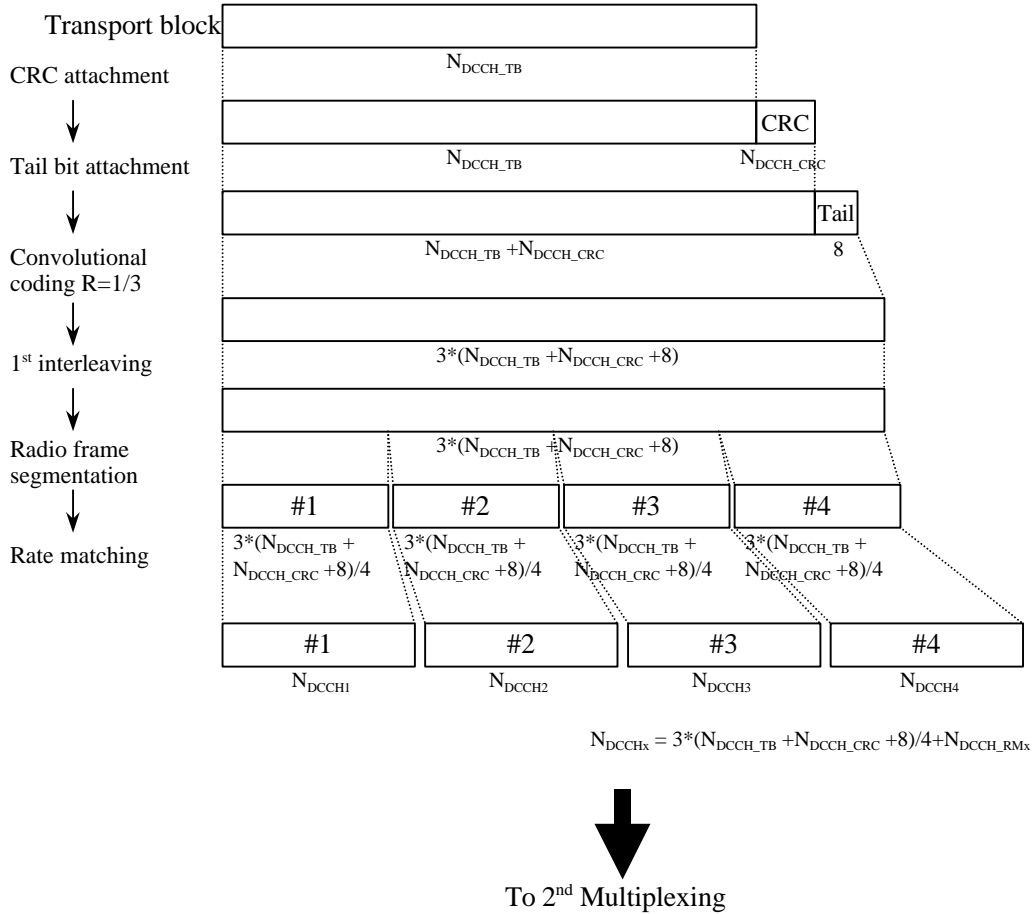
2.1. RACH



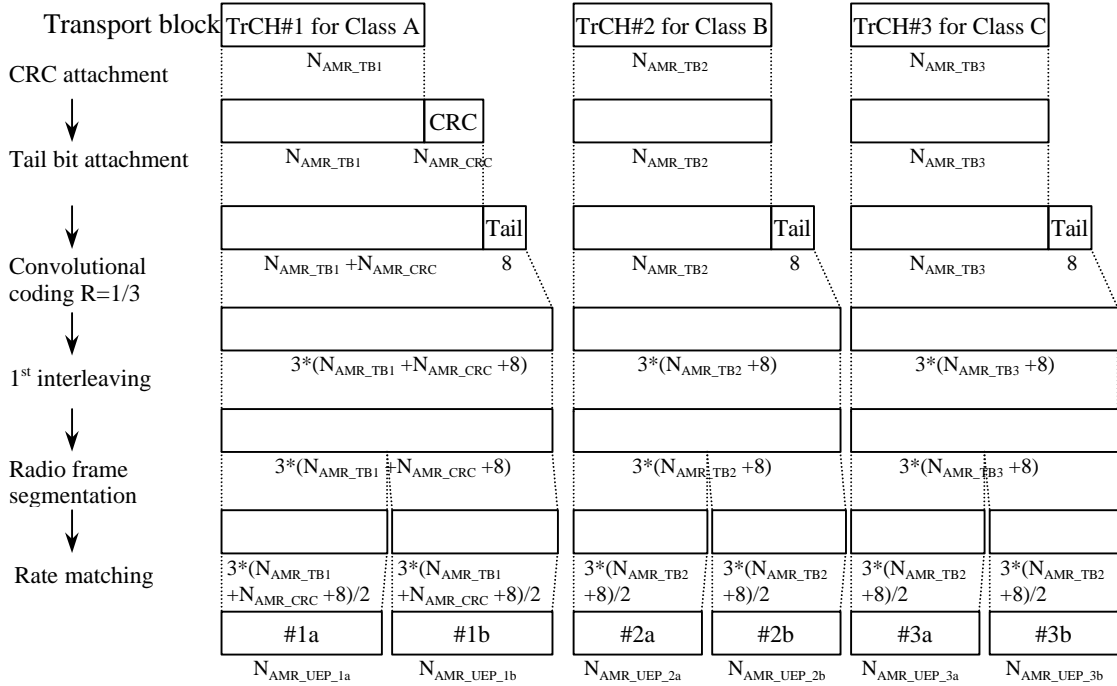
2.2. DCH

2.2.1. DCH ->Radio frame segmentation

2.2.1.1. DCCH



2.2.1.2. AMR voice data (UEP)



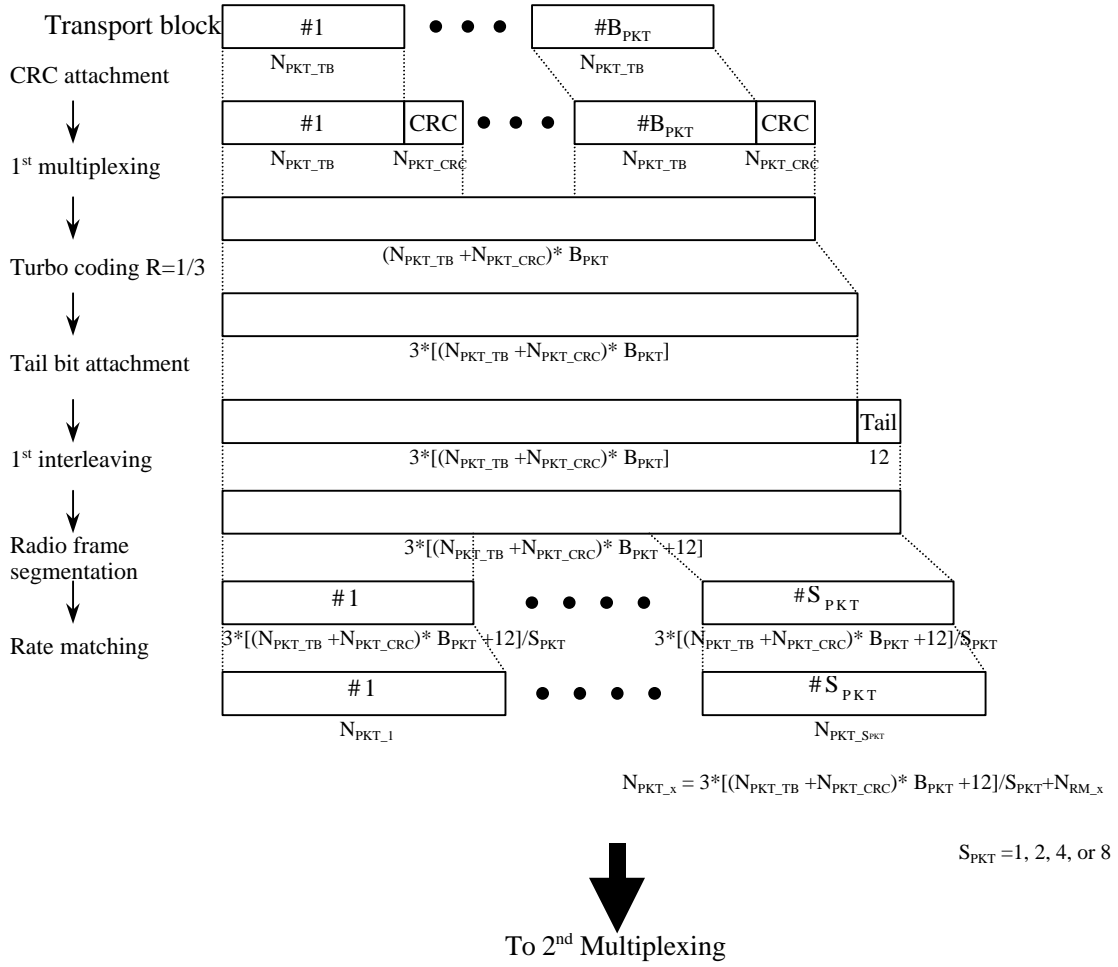
$$N_{AMR_UEP_1x} = 3*(N_{AMR_TB1} + N_{AMR_CRC} + 8)/2 + N_{AMR_RM1x}$$

$$N_{AMR_UEP_2x} = 3*(N_{AMR_TB2} + 8)/2 + N_{AMR_RM2x}$$

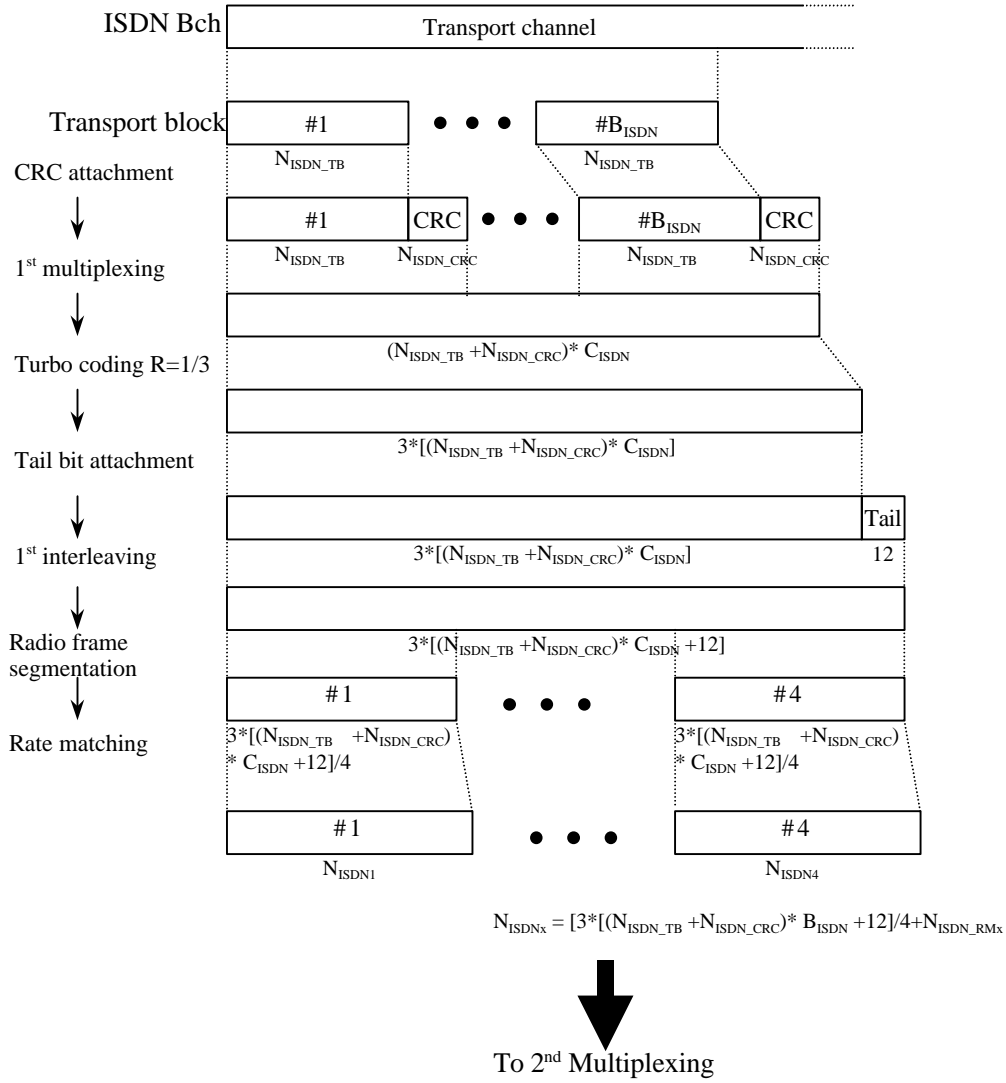
$$N_{AMR_UEP_3x} = 3*(N_{AMR_TB3} + 8)/2 + N_{AMR_RM3x}$$

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To 2nd Multiplexing

2.2.1.3. Packet

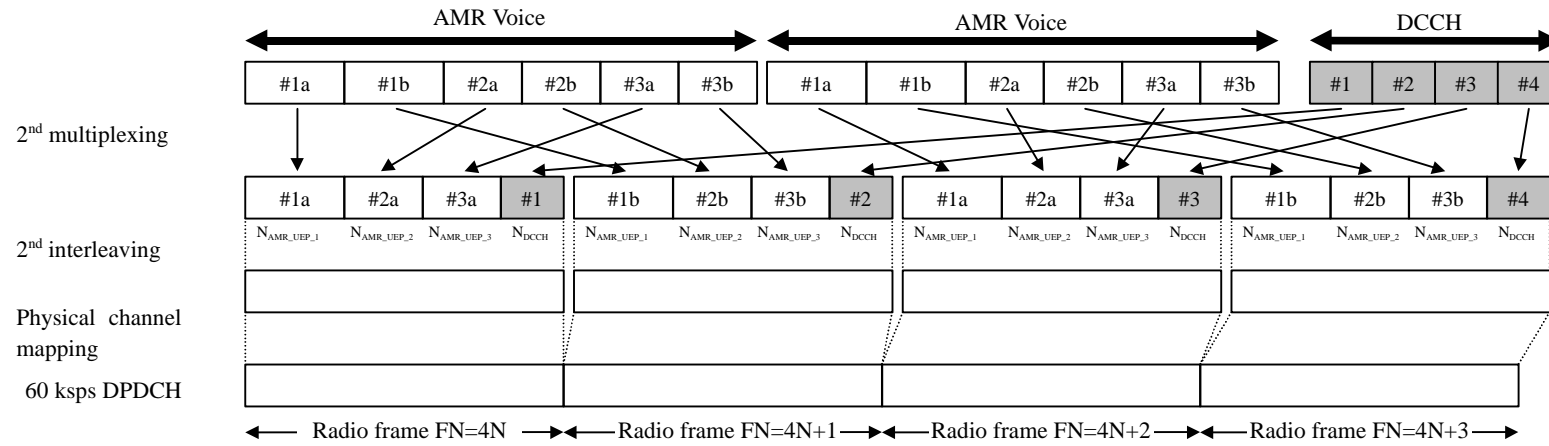


2.2.1.4. ISDN



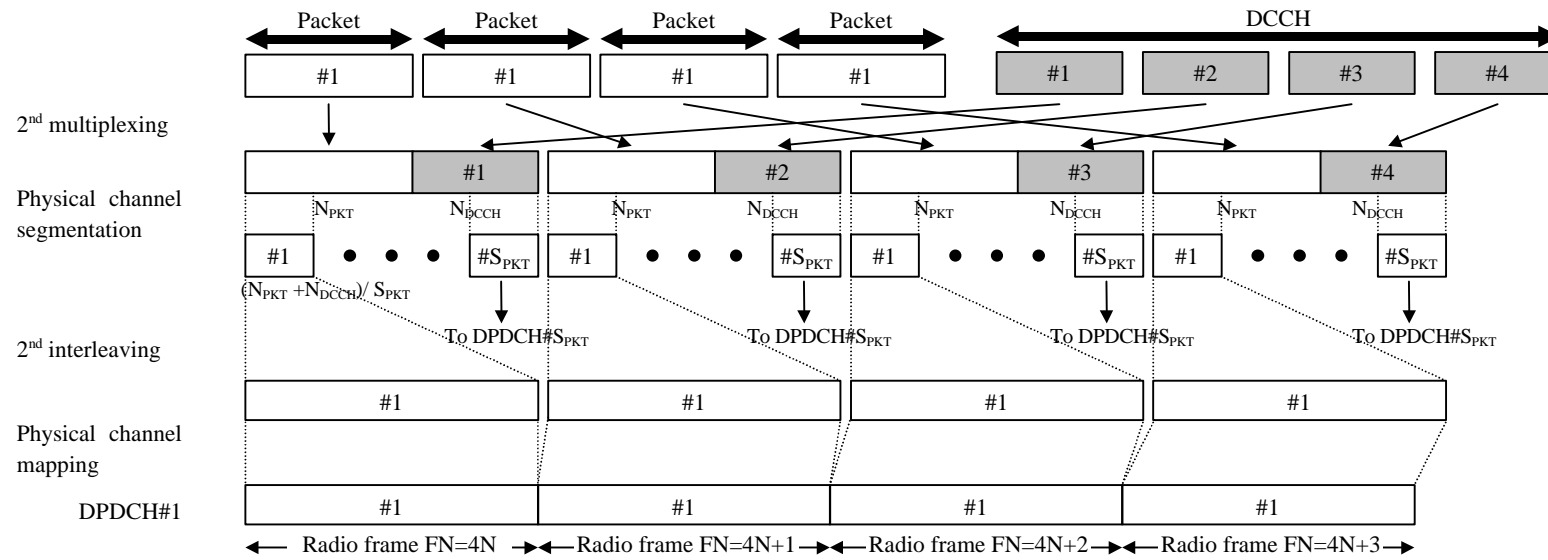
2.2.2. 2nd multiplexing -> Physical channel mapping

2.2.2.1. AMR+DCCH

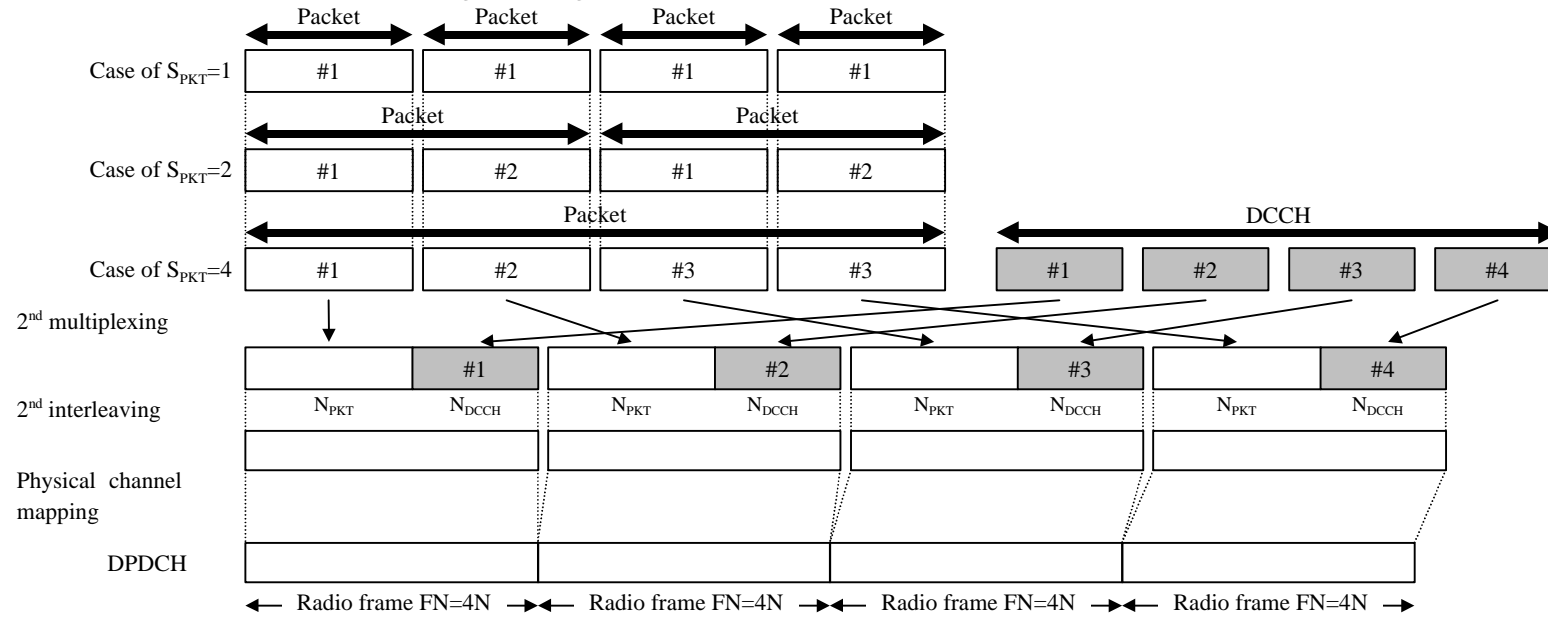


2.2.2.2. Packet + DCCH

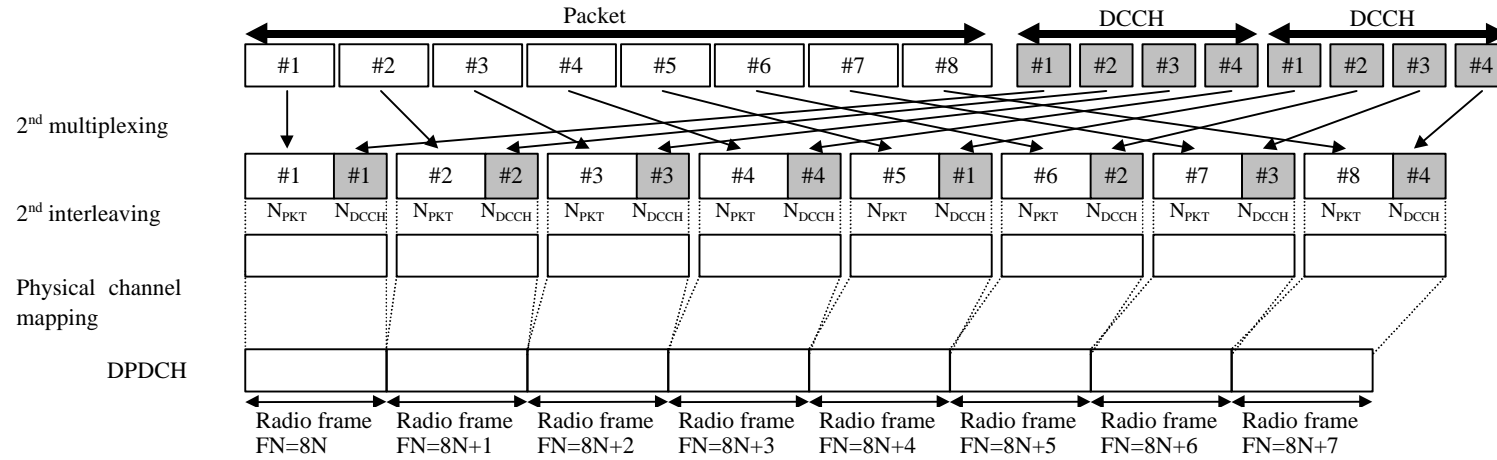
2.2.2.2.1. $S_{PKT}=1$ and mapping to multi- physical channels



2.2.2.2.2. $S_{PKT}=1, 2, \text{ or } 4$ and mapping to a single physical channel



2.2.2.2.3. $S_{P_{KT}}=8$ and mapping to a single physical channel



2.2.2.3. ISDN

