3GPP TSG RAN Meeting #20 **RP-030271**
Hameenlinna, FINLAND, 3 - 6 June 2003

Title: **CRs (Rel-5) to TS 25.211**

Source: **TSG-RAN WG1**

Agenda item: **7.1.5**

1. ***TS 25.211*** **(RP-030271)**

RP Tdoc #	WG Toc#	Spec	CR	Rev	Subject	Phase	Cat	Curre	New	Workitem	Remarks
RP-030271	R1-030464	25.211	178	-	Alignment of the terminology, "subframe"	Rel-5	F	5.3.0	5.4.0	HSDPA-Phys	
RP-030271	R1-030465	25.211	179	-	Correction of AICH description	Rel-5	F	5.3.0	5.4.0	TEI-5	
RP-030271	R1-030486	25.211	180	-	Correction of description of TTX_diff	Rel-5	F	5.3.0	5.4.0	HSDPA-Phys	

3GPP TSG-RAN WG1 Meeting #32 ***R1-030464***
Paris, France, 19-23 May 2003

CR-Form-v7

CHANGE REQUEST

⌘	**25.211**	**CR**	**178**	⌘ **rev**	**-**	⌘	Current version:	**5.3.0**	⌘

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Proposed change affects:	UICC apps⌘		ME	X	Radio Access Network	X	Core Network

Title:	⌘	Alignment of the terminology, "subframe"		
Source:	⌘	TSG RAN WG1		
Work item code:	⌘	HSDPA-Phys	***Date:*** ⌘	15 April, 2003
Category:	⌘	**F**	***Release:*** ⌘	Rel-5
		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:	⌘	Previously a term,"HS-PDSCH subframe", was defined. So the figure 26A , which shows HS-SCCH strcture, is also defined as "HS-PDSCH subfame". Now in section 5 of TS25.211, "subframe" is defined. So to align the terminology, to modify the figure 26A is proposed. The figure 26B, which shows HS-PDSCH structure is also proposed to modify to "1 subframe:T_f=2ms".
Summary of change:	⌘	In figure 26A and 26B, "1 HS-PDSCH subframe: T_f=2ms" is modified to "1 subframe:T_f=2ms ".
Consequences if not approved:	⌘	Inconsistency of the terminology may brings the misunderstanding of the specification.

Clauses affected:	⌘	5.3.3.12, 5.3.3.13s				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
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.

5.3.3.12 Shared Control Channel (HS-SCCH)

The HS-SCCH is a fixed rate (60 kbps, SF=128) downlink physical channel used to carry downlink signalling related to HS-DSCH transmission. Figure 26A illustrates the sub-frame structure of the HS-SCCH.

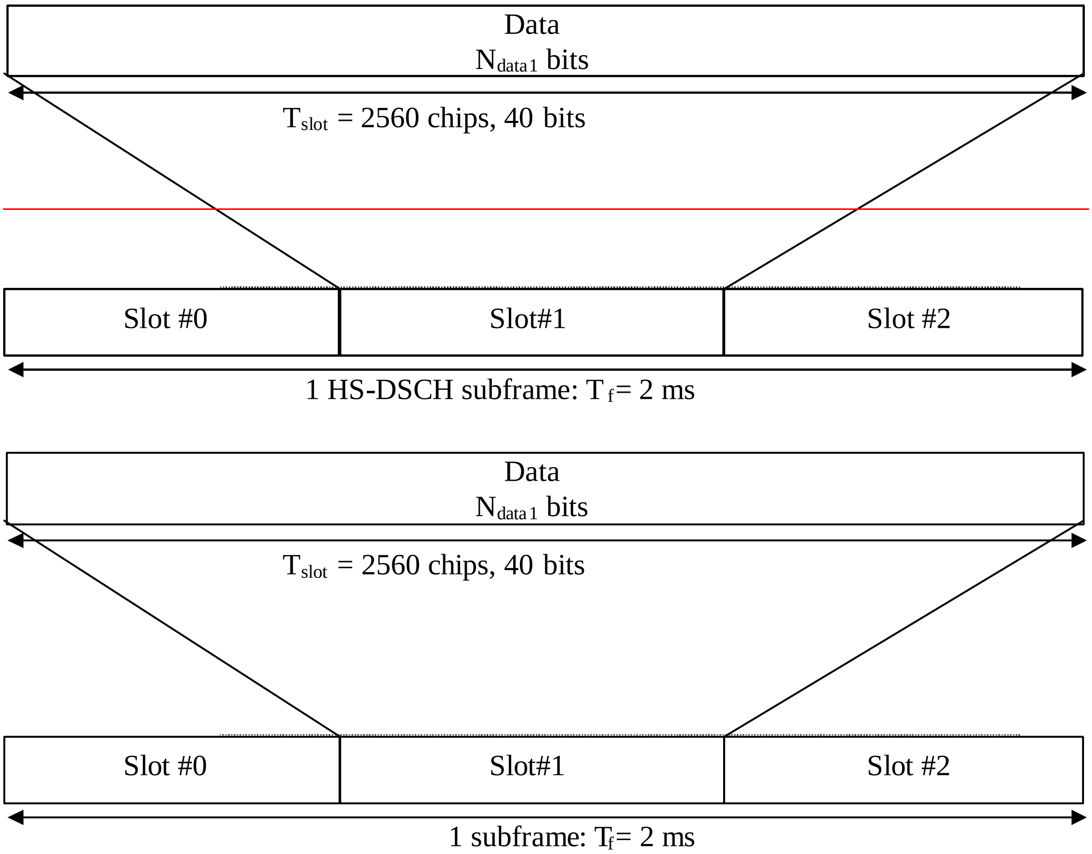

Figure 26A: Subframe structure for the HS-SCCH

5.3.3.13 High Speed Physical Downlink Shared Channel (HS-PDSCH)

The High Speed Physical Downlink Shared Channel (HS- PDSCH) is used to carry the High Speed Downlink Shared Channel (HS-DSCH).

A HS-PDSCH corresponds to one channelization code of fixed spreading factor SF=16 from the set of channelization codes reserved for HS-DSCH transmission. Multi-code transmission is allowed, which translates to UE being assigned multiple channelisation codes in the same HS-PDSCH subframe, depending on its UE capability.

The subframe and slot structure of HS-PDSCH are shown in figure 26B.

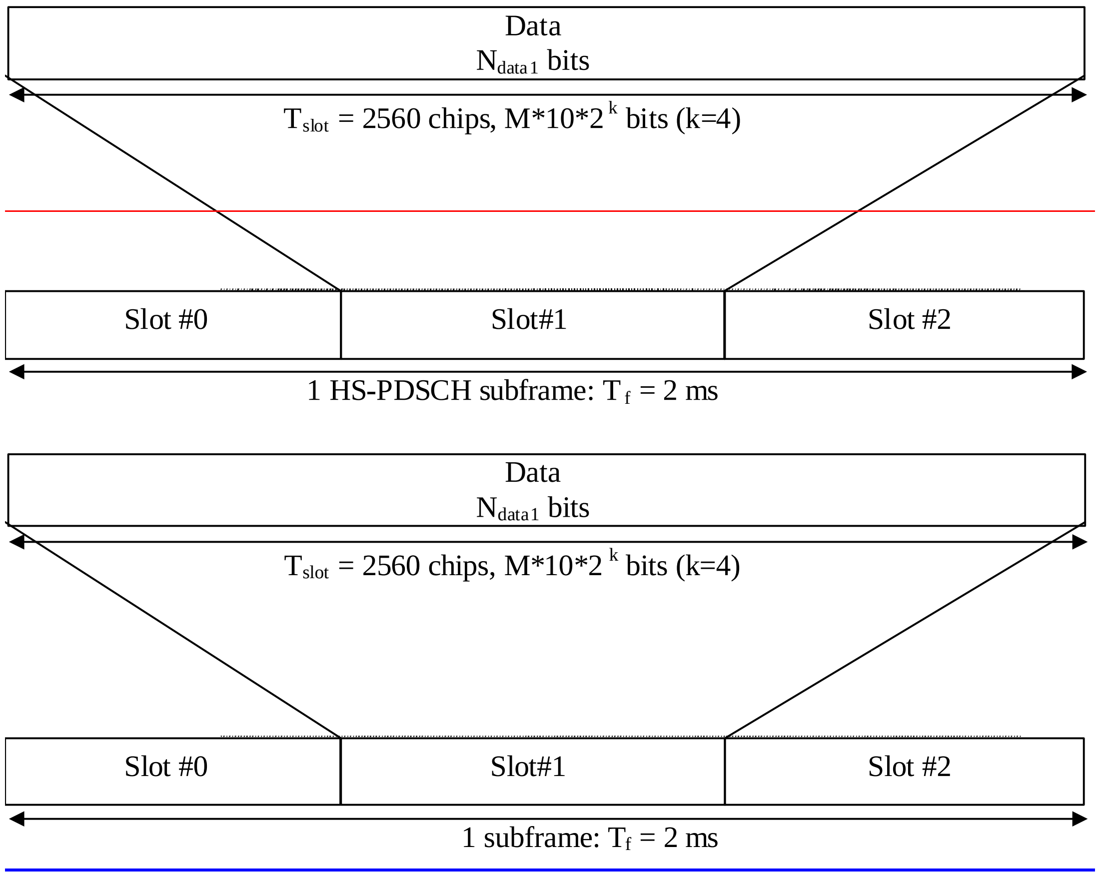

Figure 26B: Subframe structure for the HS-PDSCH

An HS-PDSCH may use QPSK or 16QAM modulation symbols. In figure 26B, M is the number of bits per modulation symbols i.e. M=2 for QPSK and M=4 for 16QAM. The slot formats are shown in table 26.

Table 26: HS-DSCH fields

Slot format #i	Channel Bit Rate (kbps)	Channel Symbol Rate (ksps)	SF	Bits/ HS-DSCH subframe	Bits/ Slot	Ndata
0(QPSK)	480	240	16	960	320	320
1(16QAM)	960	240	16	1920	640	640

All relevant Layer 1 information is transmitted in the associated HS-SCCH i.e. the HS-PDSCH does not carry any Layer 1 information.

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Paris, France, 19-23 May 2003

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CHANGE REQUEST

⌘	**25.211**	**CR 179**	⌘ **rev**	**-**	⌘ Current version:	**5.3.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [X] Core Network [ ]

Title: ⌘	Correction of AICH description		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI-5	***Date:*** ⌘	11 April, 2003
Category: ⌘	**F**	***Release:*** ⌘	Rel-5
	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: ⌘	Section 5.3.3.7 in TS25.211 says AICH has 32 real-valued "symbols" but this "32" is counted as I,Q separately. Normally in the other part of the spec, this is called as 16 symbols or 32 real-valued signals (See TS25.211 section 5.3.1.1.1).
Summary of change: ⌘	"Real-valued symbols" are modified to "real-valued signals". This correction is also required from R99 but we think this is rather clarification. To avoid CR for frozen release, we only propose this to Rel5.
Consequences if not approved: ⌘	Inconsistent description of the spec may brings the misunderstanding of the spec. Although we don't believe such understanding is happen, in worst case, one may think the chip rate for FDD is 7.68Mcps.

Clauses affected: ⌘	6A.1.1			
	Y	**N**		
Other specs affected: ⌘		X	Other core specifications ⌘	
		X	Test specifications	
		X	O&M Specifications	
Other comments: ⌘				

How to create CRs using this form:
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5.3.3.7 Acquisition Indicator Channel (AICH)

The Acquisition Indicator channel (AICH) is a fixed rate (SF=256) physical channel used to carry Acquisition Indicators (AI). Acquisition Indicator AI_s corresponds to signature s on the PRACH.

Figure 21 illustrates the structure of the AICH. The AICH consists of a repeated sequence of 15 consecutive *access slots* (AS), each of length 5120 chips. Each access slot consists of two parts, an *Acquisition-Indicator* (AI) part consisting of 32 real-valued ~~symbols~~signals $a_0, \ldots, a_{31}$ and a part of duration 1024 chips with no transmission that is not formally part of the AICH. The part of the slot with no transmission is reserved for possible use by CSICH or possible future use by other physical channels.

The spreading factor (SF) used for channelisation of the AICH is 256.

The phase reference for the AICH is the Primary CPICH.

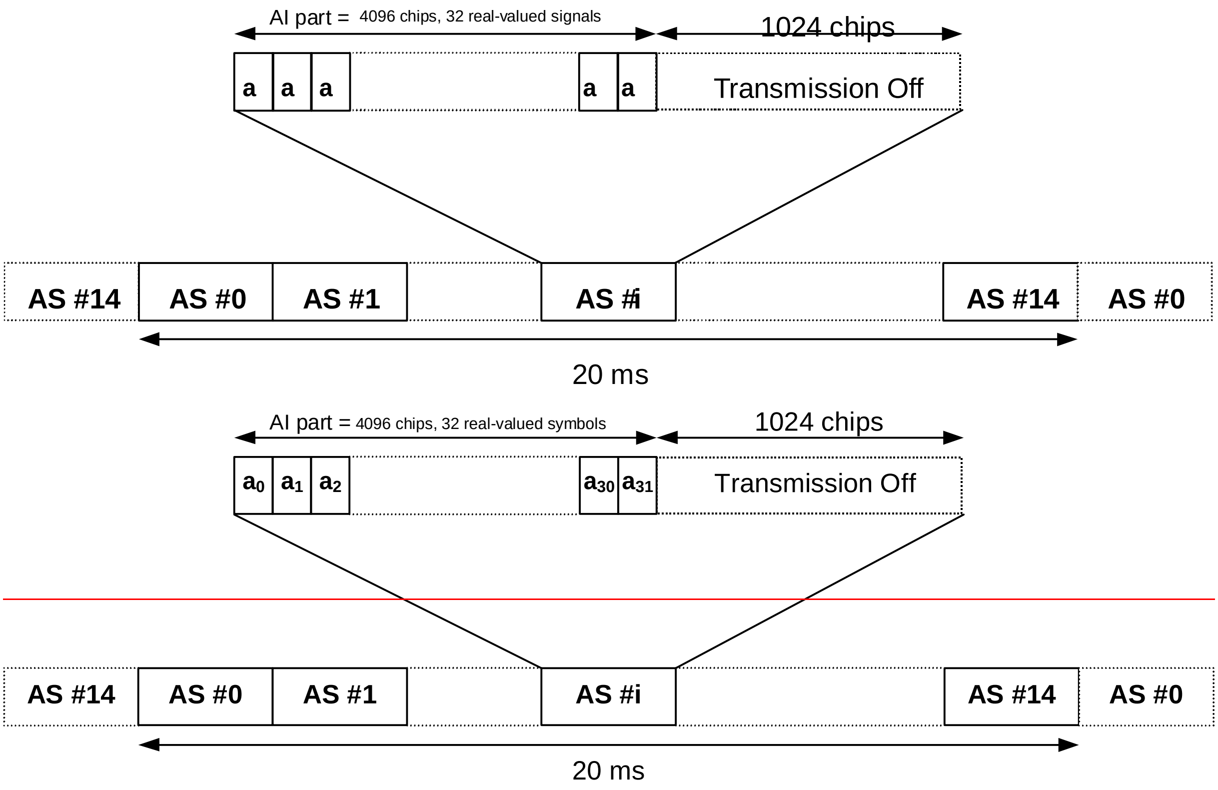

Figure 21: Structure of Acquisition Indicator Channel (AICH)

The real-valued ~~symbols~~ signals $a_0, a_1, \ldots, a_{31}$ in figure 21 are given by

$$a_j = \sum_{s=0}^{15} AI_s b_{s,j}$$

where AI_s, taking the values +1, -1, and 0, is the acquisition indicator corresponding to signature s and the sequence $b_{s,0}, \ldots, b_{s,31}$ is given by Table 22. If the signature s is not a member of the set of available signatures for all the Access Service Class (ASC) for the corresponding PRACH (cf [5]), then AI_s shall be set to 0.

The use of acquisition indicators is described in [5]. If an Acquisition Indicator is set to +1, it represents a positive acknowledgement. If an Acquisition Indicator is set to -1, it represents a negative acknowledgement.

The real-valued ~~symbols~~signals, a_j, are spread and modulated in the same fashion as bits when represented in { +1, -1 } form.

In case STTD-based open-loop transmit diversity is applied to AICH, STTD encoding according to subclause 5.3.1.1.1 is applied to each sequence $b_{s,0}, b_{s,1}, \ldots, b_{s,31}$ separately before the sequences are combined into AICH ~~symbols~~ signals $a_0, \ldots, a_{31}$.

Table 22: AICH signature patterns

s	$b_{s,0}$, $b_{s,1}$…, $b_{s,31}$																														
0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1
2	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1
3	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1
4	1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1
5	1	1	-1	-1	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1	1	1	-1	-1	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1
6	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	1	1
7	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1	1	1	-1	-1	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1	1	1	-1	-1
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
9	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1
10	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1
11	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1
12	1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	1	1	1	1	1	1
13	1	1	-1	-1	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	1	1	-1	-1	1	1	-1	-1
14	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1	1	1	1	1	-1	-1	-1	-1
15	1	1	-1	-1	-1	-1	1	1	-1	-1	1	1	1	1	-1	-1	-1	-1	1	1	1	1	-1	-1	1	1	-1	-1	-1	-1	1	1

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Disneyland, Marne la Vallée, France, 19-23 May 2003

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CHANGE REQUEST

⌘	**25.211**	**CR**	**180**	⌘ **rev**	**-**	⌘	Current version:	**5.3.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Correction of description of T_{TX_diff}
Source:	⌘	TSG RAN WG1
Work item code:	⌘	HSDPA-Phys — ***Date:*** ⌘ 07/04/2003
Category:	⌘	**F** — ***Release:*** ⌘ Rel-5

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: ⌘

- In current specification, range of $T_{TX\ diff}$ is not clearly shown, which may cause confusion about the possible range.
- In the second bullet point of TS 25.211 section 7.7, it is not so clear whether "which is informed by higher layers" modifies "the start of the downlink DPCH frame".
- There are ambiguities in regard to choice of received path in describing $T_{TX\ diff}$ in terms of receive timings of the related HS-PDSCH subframe and downlink DPCH frame.
- It is contradictory to mention about signalling of receive timings, since receive timing can only be known from measurements at the receiver, not from higher layer signalling.

Summary of change: ⌘

- Possible values of $T_{TX\ diff}$ are explicitly indicated by having statement "$T_{TX\ diff}$ =0, 256, ..., 38144".
- T_{TX_diff} is described in terms of transmit timings.

Consequences if not approved: ⌘ Ambiguous description of $T_{TX\ diff}$ calculation may prevent compatible operation between Node B and UE.

Clauses affected: ⌘ 7.7

Other specs affected: ⌘

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

Other comments: ⌘

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7.7 Uplink DPCCH/HS-DPCCH/HS-PDSCH timing at the UE

Figure 34 shows the timing offset between the uplink DPCH, the HS-PDSCH and the HS-DPCCH at the UE. An HS-DPCCH sub-frame starts $m \times 256$ chips after the start of an uplink DPCH frame that corresponds to the DL DPCH frame from the HS-DSCH serving cell containing the beginning of the related HS-PDSCH subframe with *m* calculated as

$m = (T_{TX\_diff} /256) + 101$

where T_{TX_diff} is the difference in chips (T_{TX_diff} =0, 256, ..., 38144), between

- the ~~receive~~ transmit timing ~~at the UE~~ of the start of the related HS-PDSCH subframe (see sub-clauses 7.8 and 7.1)

and

- the ~~receive~~ transmit timing ~~at the UE~~ of the start of the downlink DPCH frame from the HS-DSCH serving cell that contains the beginning of the HS-PDSCH subframe ~~which is informed by higher layers~~ (see sub-clause 7.1).

At any one time, *m* therefore takes one of a set of five possible values according to the transmission timing of HS-DSCH sub-frame timings relative to the DPCH frame boundary. The UE and Node B shall only update the set of values of *m* in connection to UTRAN reconfiguration of downlink timing.

More information about uplink timing adjustments can be found in [5].

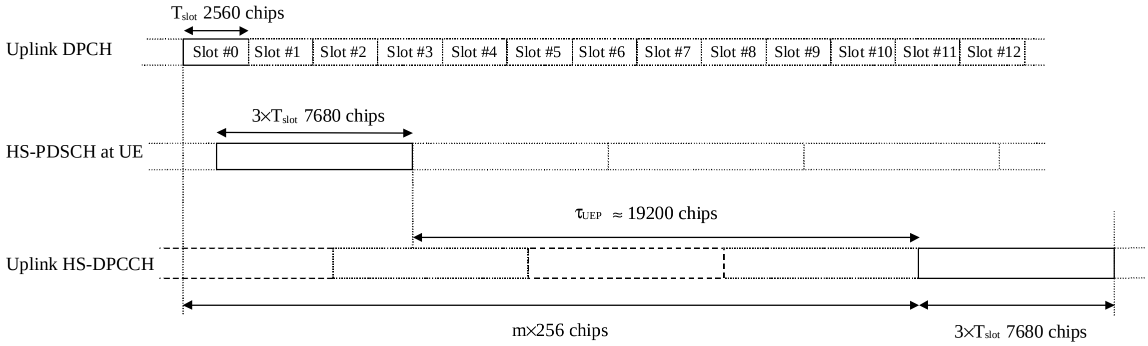

Figure 34: Timing structure at the UE for HS-DPCCH control signalling