Clarification to 25.211 regarding usage of multi-code PDSCH

1.0 Proposed Changes

In this paper a clarification is provided to the 25.211 specification. The proposed clarification states that when multiple PDSCH codes are directed toward a single UE in FDD mode (ie. when using PDSCH multi-code) then the spreading factor of each code will be the same. This clarification provides consistency with the case for the downlink multi-code DPCH. In addition, by making this stipulation signalling becomes both simplified and practicable.

3GPP TSG-RAN Meeting #7	*Document*	**RP-0000?**
Madrid, Spain; 13-15 Mar 2000		*e.g. for 3GPP use the format TP-99xxx* *or for SMG, use the format P-99-xxx*

CHANGE REQUEST

Please see embedded help file at the bottom of this

	25.211	**036**	Current Version:	3.1.1
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ *CR number as allocated by MCC support team*		

For submission to: TSG-RAN#7   for approval   **X**   strategic   *(for SMG*
list expected approval meeting # here   for information   non-strategic   *use only)*
↑

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-Form-v2.doc

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

Source:	Motorola, Nokia	**Date:**	28 Feb 2000

Subject:	PDSCH multi-code transmission

Work item:	

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

Reason for change:	Clarification that where multi-code PDSCH transmission is used the spreading factor of each code will be the same.

Clauses affected:	5.3.3.5

Other specs affected:	Other 3G core specifications	**X**	→ List of CRs:	25.331, 25.433, 25.435
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
			→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	

help.doc

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

5.3.3.5   Physical Downlink Shared Channel (PDSCH)

The Physical Downlink Shared Channel (PDSCH), used to carry the Downlink Shared Channel (DSCH), is shared by users based on code multiplexing. As the DSCH is always associated with a DCH, the PDSCH is always associated with a downlink DPCH.

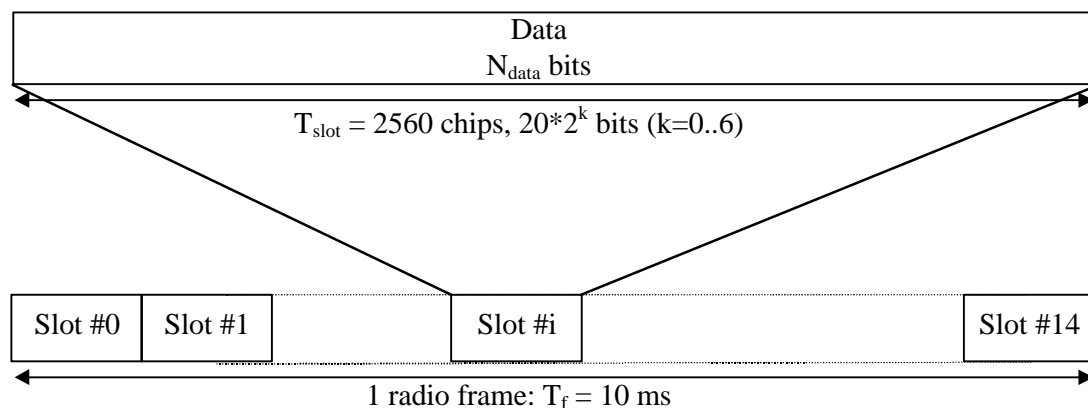The frame and slot structure of the PDSCH are shown on figure 18.

Figure 18: Frame structure for the PDSCH

To indicate for UE that there is data to decode on the DSCH, two signalling methods are possible, either using the TFCI field, or higher layer signalling.

The PDSCH transmission with associated DPCH is a special case of multicode transmission. The PDSCH and DPCH do not have necessary the same spreading factors and for PDSCH the spreading factor may vary from frame to frame. The relevant Layer 1 control information is transmitted on the DPCCH part of the associated DPCH, the PDSCH does not contain physical layer information. The channel bit and symbol rates for PDSCH are given in table 19.

For PDSCH the allowed spreading factors may vary from 256 to 4.

If the spreading factor and other physical layer parameters can vary on a frame-by-frame basis, the TFCI shall be used to inform the UE what are the instantaneous parameters of PDSCH including the channelisation code from the PDSCH OVSF code tree.

A DSCH may be mapped to multiple parallel PDSCHs as well, as negotiated at higher layer prior to starting data transmission. In such a case the parallel PDSCHs shall be operated with frame synchronization between each other and the spreading factor of all PDSCH codes will be the same.

Table 19: PDSCH fields

Slot format #i	Channel Bit Rate (kbps)	Channel Symbol Rate (ksps)	SF	Bits/ Frame	Bits/ Slot	N_{data}
0	30	15	256	300	20	20
1	60	30	128	600	40	40
2	120	60	64	1200	80	80
3	240	120	32	2400	160	160
4	480	240	16	4800	320	320
5	960	480	8	9600	640	640
6	1920	960	4	19200	1280	1280

When transmit diversity is employed for the PDSCH, STTD encoding is used on the data bits as described in section 5.3.1.1.1.