TSG-RAN Meeting #10 *RP-000563*
Bangkok, Thailand, 6 - 8 December 2000

Title: **Agreed CRs to TS 25.302**

Source: **TSG-RAN WG2**

Agenda item: **5.2.3**

Doc-1st-	Status-	Spec	CR	Rev	Subject	Cat	Version	Versio
R2-001954	agreed	25.302	072		RACH model	F	3.6.0	3.7.0
R2-001974	agreed	25.302	073		Clarification of UTRAN SIR measurement	F	3.6.0	3.7.0
R2-001975	agreed	25.302	074		Removal of compressed mode measurement purpose "other"	F	3.6.0	3.7.0
R2-001976	agreed	25.302	075		Removal of compressed mode measurement purpose "GSM"	F	3.6.0	3.7.0
R2-002004	agreed	25.302	076		Removal of physical channel BER measurement for TDD	F	3.6.0	3.7.0
R2-002020	agreed	25.302	077		CPCH model correction	F	3.6.0	3.7.0
R2-002051	agreed	25.302	078	1	Removal of FAUSCH and ODMA	F	3.6.0	3.7.0
R2-002410	agreed	25.302	080	2	Correction to transport channel mapping	F	3.6.0	3.7.0
R2-002296	agreed	25.302	081		Alignment of measurement reference description	F	3.6.0	3.7.0
R2-002297	agreed	25.302	082		Changing the name of “RSSI“ to “Received total wide band power“	F	3.6.0	3.7.0

3GPP RAN WG2#16
Beijing, PR China, 9 – 13 October, 2000

Document R2-001954
e.g. for 3GPP use the format TP-99xxx
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25.302 CR 072 Current Version: 3.6.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSG-RAN #10 *list expected approval meeting # here ↑*

for approval [X]
for information [ ]

strategic [ ]
non-strategic [ ]
(for SMG 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: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 2000-10-06

Subject: RACH model

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[X]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		Release 96	[ ]
B	Addition of feature	[ ]		Release 97	[ ]
C	Functional modification of feature	[ ]		Release 98	[ ]
D	Editorial modification	[ ]		Release 99	[X]
				Release 00	[ ]

Reason for change: This CR proposes editorial modifications of the description of the current RACH/PRACH model.

Clauses affected: 6.1

Other specs affected:

Other 3G core specifications	[X]	→ List of CRs:	25.331 CR 551, 25.922 CR 008
Other GSM core specifications	[ ]	→ List of CRs:	
MS test specifications	[ ]	→ List of CRs:	
BSS test specifications	[ ]	→ List of CRs:	
O&M specifications	[ ]	→ List of CRs:	

Other comments:


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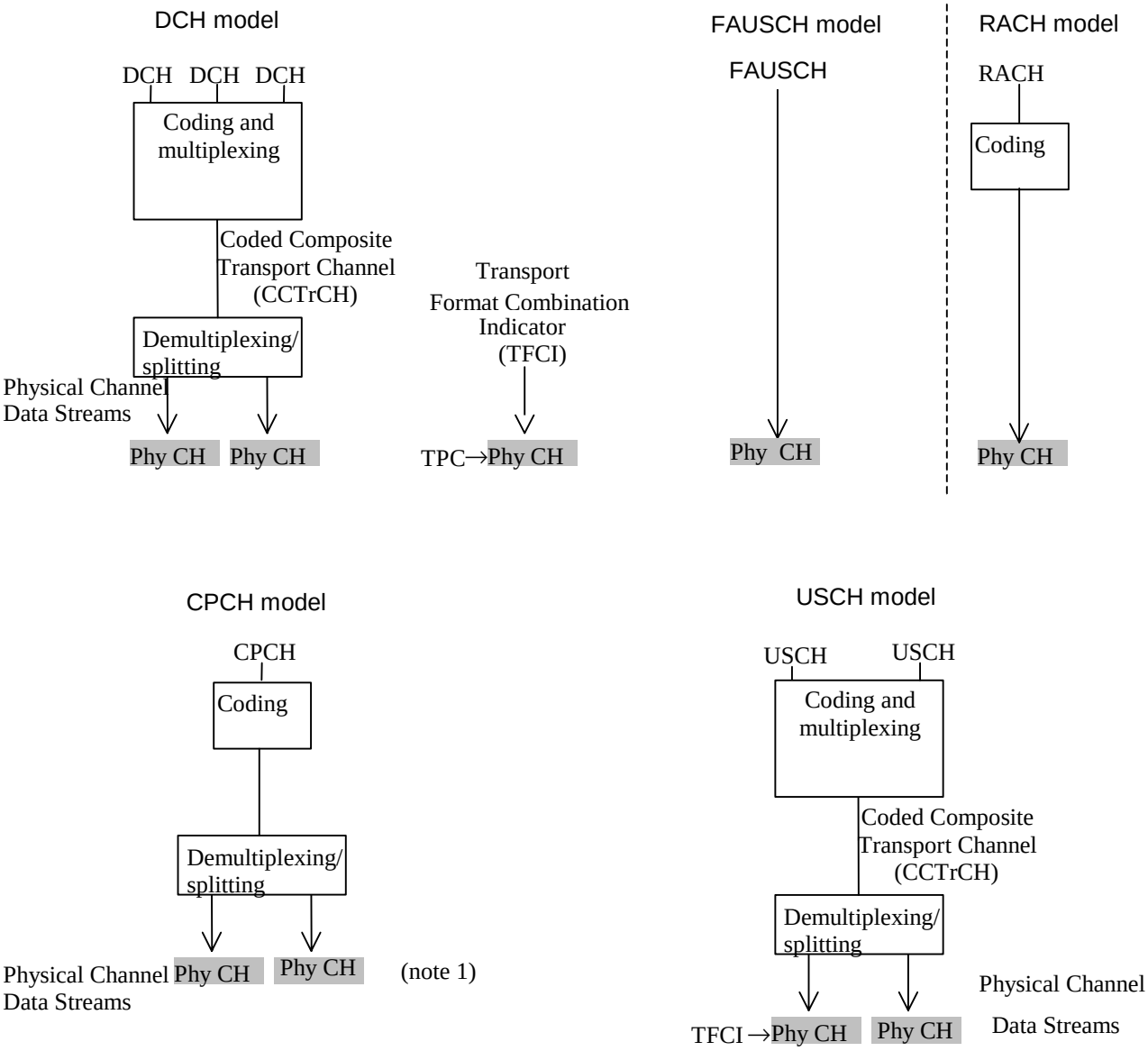
6 Model of physical layer of the UE

6.1 Uplink models

Figure 2 shows models of the UE's physical layer in the uplink for both FDD and TDD mode. It shows the models for DCH, RACH, FAUSCH, CPCH (the latter two used in FDD mode only) and USCH (TDD only). Some restriction exist for the use of different types of transport channel at the same time, these restrictions are described in the chapter "UE Simultaneous Physical Channel combinations". More details can be found in [3] and [4].



NOTE 1: Only the data part of the CPCH can be mapped on multiple physical channels (in case of multi-code PCPCH).
NOTE 2: FAUSCH and CPCH are for FDD only.
NOTE 3: USCH is for TDD only.

Figure 2: Model of the UE's physical layer - uplink

The DCH model shows that one or several DCHs can be processed and multiplexed together by the same coding and multiplexing unit. The detailed functions of the coding and multiplexing unit are not defined in the present document but in [3] and [4]. The single output data stream from the coding and multiplexing unit is denoted *Coded Composite Transport Channel (CCTrCH).*

The bits on a CCTrCH Data Stream can be mapped on the same Physical Channel and should have the same C/I requirement.

On the downlink, multiple CCTrCH can be used simultaneously with one UE. In the case of FDD, only one fast power control loop is necessary for these different CCtrCH, but the different CCtrCH can have different C/I requirements to provide different QoS on the mapped Transport Channels. In the case of TDD, different power control loops can be applied for different CCTrCH. One physical channel can only have bits coming from the same CCTrCH.

On the uplink and in the case of FDD, only one CCTrCH can be used simultaneously. On the uplink and in the case of TDD, multiple CCTrCH can be used simultaneously.

When multiple CCTrCH are used by one UE, one or several TFCI can be used, but each CCTrCH has only zero or one corresponding TFCI. In the case of FDD, these different words are mapped on the same DPCCH. In the case of TDD, these different TFCI can be mapped on different DPCH.

The data stream of the CCTrCH is fed to a data demultiplexing/splitting unit that demultiplexes/splits the CCTrCH's data stream onto one or several *Physical Channel Data Streams*.

The current configuration of the coding and multiplexing unit is either signalled to, or optionally blindly detected by, the network for each 10 ms frame. If the configuration is signalled, it is represented by the *Transport Format Combination Indicator (TFCI)* bits. Note that the TFCI signalling only consists of pointing out the current transport format combination within the already configured transport format combination set. In the uplink there is only one TFCI representing the current transport formats on all DCHs of one CCTrCH simultaneously. In FDD mode, the physical channel data stream carrying the TFCI is mapped onto the physical channel carrying the power control bits and the pilot. In TDD mode the TFCI is time multiplexed onto the same physical channel(s) as the DCHs. The exact locations and coding of the TFCI are signalled by higher layers.

The DCH and USCH have the possibility to perform Timing Advance in TDD mode.

For the FAUSCH, there is no coding, since the FAUSCH is only used for the transmission of a reservation request by sending an up-link signalling code (USC) at the time-offset allocated for the specific UE during the 10 ms frame. Due to the fixed time-offset allotted to a specific UE, the FAUSCH is a dedicated control channel.

The model for the RACH case shows that RACH is a common type transport channel in the uplink. RACHs are always mapped one-to-one onto physical channels (PRACHs), i.e. there is no physical layer multiplexing of RACHs. Service multiplexing is handled by the MAC layer. In one cell several RACHs/PRACHs may be configured. If more than one PRACH is configured in a cell, the UE performs PRACH selection as specified in TS 25.331 [4]. The RACHs mapped to the PRACHs may all employ the same Transport Format and Transport Format Combination Sets, respectively. It is however also possible that individual RACH Transport Format Sets are applied on each available RACH/PRACH. The available pairs of RACH and PRACHs and their parameters are indicated in system information. In FDD mode, the various PRACHs are distinguished either by employing different preamble scrambling codes, or by using a common scrambling code but distinct (non-overlapping) partitions of available signatures and available subchannels. Examples of RACH/PRACH configurations are given in TR 25.922 [6].

The CPCH, which is another common type transport channel, has a physical layer model as shown in figure2. There is always a single CPCH transport channel mapped to a PCPCH physical channel which implies a one-to-one correspondence between a CPCH TFI and the TFCI conveyed on PCPCH. Demultiplexing/splitting applies to multicode PCPCH physical channels. A CPCH transport channel belongs to a CPCH set which is identified by the application of a common, CPCH set-specific scrambling code for access preamble and collision detection, and multiple PCPCH physical channels. Each PCPCH shall employ a subset of the Transport Format Combinations implied by the Transport Format Set of the CPCH set. A UE can request access to CPCH transport channels of a CPCH set, which is assigned when the service is configured for CPCH transmission.

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Document R2-001974
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25.302 CR 073 Current Version: 3.6.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSG-RAN #10 *list expected approval meeting # here ↑*

For approval [X] for information [ ]

strategic [ ] non-strategic [ ] *(for SMG 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: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 20.9.2000

Subject: Clarification of UTRAN SIR measurement

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[X]
A	Corresponds to a correction in an earlier release	[ ]
B	Addition of feature	[ ]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Release:

Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change: It has been clarified in RAN WG1 that UTRAN SIR measurement is unbiased (for further details see Tdoc R2-001900).

Clauses affected: 9.3.15

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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

9.3 UTRAN Measurements

9.3.1 RSSI

Measurement	RSSI
Source	L1 (Node B)
Destination	RRC(RNC)
Reporting Trigger	On-demand, Event-triggered, Periodic
Definition	Received Signal Strength Indicator, the wide-band received power within the UTRAN UL channel bandwidth at a UTRAN access point. For TDD this is measured in specified timeslots.

9.3.2 Transmitted carrier power

Measurement	Transmitted carrier power
Source	L1(Node-B)
Destination	RRC (RNC)
Reporting Trigger	On-demand, periodic, Event-triggered
Definition	Transmitted carrier power is the ratio between the total transmitted power on one DL carrier from one UTRAN access point, compared to the maximum power possible to use on that DL carrier at this moment of time. For TDD this is measured in specified timeslots.

9.3.3 Transmitted code power

Measurement	Transmitted code power
Source	L1(Node-B)
Destination	RRC (RNC)
Reporting Trigger	On-demand, periodic, Event-triggered
Definition	Transmitted Code Power is the transmitted power on one carrier, one scrambling and one channelisation code. For TDD this is measured in specified timeslots.

9.3.4 Transport channel BLER

This measurement is not included in release 99.

Measurement	Transport channel BLER (BLock Error Rate)
Source	L1(Node-B)
Destination	RRC (RNC)
Reporting Trigger	periodic, event triggered, on demand
Definition	Estimation of the transport channel block error rate (BLER).

9.3.5 Physical channel BER

Measurement	Physical channel BER
Source	L1(Node-B)
Destination	RRC (RNC)
Reporting Trigger	On-demand, Event-triggered, periodic
Definition	The physical channel BER is measured on the control part after RL combining.

9.3.6 Transport channel BER

Measurement	Transport channel BER
Source	L1(Node-B)
Destination	RRC (RNC)
Reporting Trigger	On-demand, Event-triggered, periodic
Definition	The transport channel BER is measured on the data part after RL combining.

9.3.7 RX timing deviation

Measurement	RX timing deviation
Source	L1 (Node B)
Destination	RRC (RNC)
Reporting Trigger	Periodic, event triggered
Definition	The difference of the time of arrival of the UL transmissions in relation to the arrival time of a signal with zero propagation delay. This measurement is applicable for TDD cells only.

9.3.8 Timeslot ISCP

Measurement	Timeslot ISCP
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	periodic or event triggered
Definition	Interference on Signal Code Power, is the interference on the received signal in a specified timeslot measured on the midamble. This measurement is applicable for TDD cells only.

9.3.9 RSCP

Measurement	RSCP
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	periodic or event triggered
Definition	Received Signal Code Power is the received power on DPCH or PRACH or PUSCH after despreading. This measurement is applicable for TDD cells only.

9.3.10 Round Trip Time

The Round Trip Time (RTT) measurement at a single Node-B may provide an estimate of the round trip time of signals between the Node-B and the UE and this may be used to calculate a radial distance to the UE within the sector. A group of simultaneous RTT measurements made from a number of Node-B or LMU may be used to estimate the location of the UE. The support for this measurement is LCS positioning method dependent.

Measurement	Round Trip Time
Source	L1(Node-B or LMU)
Destination	RRC (RNC-LCS)
Reporting Trigger	on demand, event triggered
Definition	The round trip time is measured from the time of transmission of the beginning of a downlink frame to a UE to the time of reception of the beginning of the corresponding uplink frame from the UE.

9.3.11 Frequency Offset

The Frequency Offset measures the rate of change (drift) of the Relative Time Difference and may be used to estimate the RTD at the time the UE location measurements are made. The support for this measurement is LCS positioning method dependent.

Measurement	Frequency Offset
Source	L1(LMU)
Destination	RRC (RNC-LCS)
Reporting Trigger	On demand, event triggered, periodic
Definition	The Frequency Offset (FO) measures the rate of change (drift) of the Relative Time Difference of the transmissions of two Node-Bs.

9.3.12 Acknowledged PRACH preambles

Measurement	Acknowledged PRACH preambles
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	Periodic, event triggered, On demand
Definition	The acknowledged PRACH preambles measurement is defined as the total number of acknowledged PRACH preambles per access frame for each PRACH, where an access frame consists of fifteen access slots from access slot #0 to access slot #14. This is equivalent to the number of positive acquisition indicators transmitted per access frame on each AICH.

9.3.13 Detected PCPCH access preambles

Measurement	Detected PCPCH Access preambles
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	Periodic, event triggered, On demand
Definition	The detected PCPCH access preambles measurement is defined as the total number of detected access preambles per access frame on the PCPCHs belonging to a CPCH set, where an access frame consists of fifteen access slots from access slot #0 to access slot #14.

9.3.14 Acknowledged PCPCH access preambles

Measurement	Acknowledged PCPCH access preambles
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	Periodic, event triggered, On demand
Definition	The acknowledged PCPCH access preambles measurement is defined as the total number of acknowledged PCPCH access preambles per access frame on the PCPCHs , where an access frame consists of fifteen access slots from access slot #0 to access slot #14. This is equivalent to the number of positive acquisition indicators transmitted on the AP-AICH per access frame.

9.3.15 SIR

Measurement	SIR
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	Periodic, event triggered
Definition	Signal to Interference Ratio is defined as (RSCP/ISCP) xSF where: RSCP = Received Signal Code Power, unbiased measurement of the received power on one code. ISCP = Interference Signal Code Power, the interference on the received signal. SF=The used spreading factor. For FDD this is measured on the DPCCH. For TDD this is measured on the DPCH, PRACH or PUSCH.

9.3.16 Propagation Delay

The Propagation delay measures the one-way propagation delay as measured during either PRACH or PCPCH access. The propagation delay measurement can be used for DPCH setup, as it allows to minimise the search window, when setting up the uplink DPCH.

Measurement	Propagation delay
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	Event triggered, periodic
Definition	The Propagation delay measures the one-way propagation delay as measured during either PRACH or PCPCH access.

9.3.17 UTRAN GPS Timing of Cell Frames for LCS

The UTRAN GPS Timing of Cell Frames for LCS is an absolute reference time measurement for the arrival of a specific frame for an identified cell within the active set. This measure is applicable for LMUs which support reception of GPS signals for LCS.

Measurement	UTRAN GPS Timing of Cell Frames for LCS
Source	L1 (LMU)
Destination	RRC (RNC-LCS)
Reporting Trigger	On-demand, Event-triggered, Periodic
Definition	Time of arrival for the beginning of a frame, (identified by its SFN), measured when the first significant multipath of the cell CPICH reaches the LMU. This is the absolute time reference measurement in respect to GPS Time Of Week for the arrival of this frame.

9.3.18 SIR ERROR

Measurement	SIR ERROR
Source	L1(Node B)
Destination	RRC (RNC)
Reporting Trigger	Periodic, event triggered
Definition	Signal to Interference Ratio Error is defined as SIR – SIR_{target_ave}, where: SIR = the SIR measured by UTRAN. SIR_{target_ave} = the SIR_{target} averaged over the same time period as the SIR used in the SIR ERROR calculation.

3GPP TSG RAN WG2 meeting #16
Beijing, China, 9th to 13th October 2000

Document* *R2-001975

CHANGE REQUEST

25.302	CR	074	Current Version:	3.6.0

For submission to:	TSG-RAN #10	for approval	X	strategic	
		for information		non-strategic	

Proposed change affects:	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source:	TSG-RAN WG2	**Date:**	7.10.2000

Subject:	Removal of compressed mode measurement purpose "other"

Work item:	

Category:			**Release:**	
F	Correction	X	Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature		Release 98	
D	Editorial modification		Release 99	X
			Release 00	

Reason for change:	The usage of the compressed mode measurement purpose "other" for GPS was rejected in RAN plenary #9. No other proposals to use this measurement purpose have so far been presented and since the usage of this measurement purpose is currently not specified clearly, it is proposed to remove it from 25.302 (and 25.331). A similar update has already earlier been proposed in RAN WG1. Additional purposes in later releases can be handled with extensions.

Clauses affected:	7.3

Other specs affected:				
	Other 3G core specifications	X	→ List of CRs:	CR 560 to 25.331
	Other GSM core specifications		→ List of CRs:	
	MS test specifications		→ List of CRs:	
	BSS test specifications		→ List of CRs:	
	O&M specifications		→ List of CRs:	

Other comments:	

7.3 Compressed Mode

Compressed Mode is defined as the mechanism whereby certain idle periods are created in radio frames so that the UE can perform measurements during these periods (more details can be found in [3]).

Compressed Mode is obtained by layer 2 using transport channels provided by the layer 1 as follows:

- compressed mode is controlled by the RRC layer, which configures the layer 2 and the physical layer;
- the number of occurrences of compressed frames is controlled by RRC, and can be modified by RRC signalling;
- it is under the responsibility of the layer 2 if necessary and if possible to either buffer some layer 2 PDUs (typically at the RLC layer for NRT services) or to rate adapt the data flow (similarly to GSM) so that there is no loss of data because of compressed mode. This will be service dependent and controlled by the RRC layer.

For measurements in compressed mode, a transmission gap pattern sequence is defined. A transmission gap pattern sequence consists of alternating transmission gap patterns 1 and 2, and each of these patterns in turn consists of one or two transmission gaps. The transmission gap pattern structure, position and repetition are defined with physical channel parameters described in [3]. In addition, the UTRAN configures compressed mode pattern sequences with the the following parameters:

- **TGMP:** Transmission Gap pattern sequence Measurement Purpose: This parameter defines the purpose this transmission gap pattern sequence is intended for. The following values are used:
  - 'TDD measurement', for which one compressed mode pattern sequence can be configured,
  - 'FDD measurement', for which one compressed mode pattern sequence can be configured,
  - 'GSM measurement', for which three simultaneous compressed mode pattern sequences can be configured,
  - ~~'Other', for which one compressed mode pattern sequence can be configured;~~
- **TGPSI:** Transmission Gap Pattern Sequence Identifier selects the compressed mode pattern sequence for which the parameters are to be set. The range of TGPSI is [1 to <MaxTGPS>].

The UE shall support a total number of simultaneous compressed mode pattern sequences, which is determined by the UE's capability to support each of the measurement types categorised by the TGMP. For example, a UE supporting FDD and GSM shall support four simultaneous compressed mode pattern sequences and a UE supporting FDD and TDD shall support two simultaneous compressed mode pattern sequences.

When using simultaneous pattern sequences, it is the responsibility of the NW to ensure that the compressed mode gaps do not overlap and are not scheduled to overlap the same frame. Gaps exceeding the maximum gap length shall not be processed by the UE and shall interpreted as a faulty message. If the UE detects overlapping gaps, it shall process the gap from the pattern sequence having the lowest TGPSI.

3GPP TSG RAN WG2 meeting #16
Beijing, China, 9th to 13th October 2000

Document* *R2-001976

CHANGE REQUEST

25.302 CR 075 Current Version: 3.6.0

For submission to: TSG-RAN #10 for approval [X] strategic [ ]
for information [ ] non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 7.10.2000

Subject: Removal of compressed mode measurement purpose "GSM"

Work item:

Category:

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The measurement purpose 'GSM measurement' for which three simultaneous compressed mode configurations can be configured is too ambiguous and imprecise for measurement control tasks in the UE. According to the suggestion received from R4 in R2-001918, it is here proposed to introduce explicit GSM measurement purposes for the three different GSM related compressed mode transmission gap pattern sequences: 1)GSM carrier RSSI measurement, 2) Initial BSIC identification and 3) BSIC re-confirmation

Clauses affected: 7.3

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	CR 561 to 25.331
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

7.3 Compressed Mode

Compressed Mode is defined as the mechanism whereby certain idle periods are created in radio frames so that the UE can perform measurements during these periods (more details can be found in [3]).

Compressed Mode is obtained by layer 2 using transport channels provided by the layer 1 as follows:

- compressed mode is controlled by the RRC layer, which configures the layer 2 and the physical layer;
- the number of occurrences of compressed frames is controlled by RRC, and can be modified by RRC signalling;
- it is under the responsibility of the layer 2 if necessary and if possible to either buffer some layer 2 PDUs (typically at the RLC layer for NRT services) or to rate adapt the data flow (similarly to GSM) so that there is no loss of data because of compressed mode. This will be service dependent and controlled by the RRC layer.

For measurements in compressed mode, a transmission gap pattern sequence is defined. A transmission gap pattern sequence consists of alternating transmission gap patterns 1 and 2, and each of these patterns in turn consists of one or two transmission gaps. The transmission gap pattern structure, position and repetition are defined with physical channel parameters described in [3]. In addition, the UTRAN configures compressed mode pattern sequences with the the following parameters:

- **TGMP:** Transmission Gap pattern sequence Measurement Purpose: This parameter defines the purpose this transmission gap pattern sequence is intended for. The following values are used:
  - for 'TDD measurements', ~~for which~~ one compressed mode pattern sequence can be configured with purpose 'TDD measurement',
  - for 'FDD measurements', ~~for which~~ one compressed mode pattern sequence can be configured with purpose 'FDD measurement',
  - ~~'~~for GSM measurements', ~~for which~~ three simultaneous compressed mode pattern sequences can be configured with purposes 'GSM carrier RSSI measurement', 'Initial BSIC identification' and 'BSIC re-confirmation',
  - 'Other', for which one compressed mode pattern sequence can be configured;
- **TGPSI:** Transmission Gap Pattern Sequence Identifier selects the compressed mode pattern sequence for which the parameters are to be set. The range of TGPSI is [1 to <MaxTGPS>].

The UE shall support a total number of simultaneous compressed mode pattern sequences, which is determined by the UE's capability to support each of the measurement types categorised by the TGMP. For example, a UE supporting FDD and GSM shall support four simultaneous compressed mode pattern sequences and a UE supporting FDD and TDD shall support two simultaneous compressed mode pattern sequences.

When using simultaneous pattern sequences, it is the responsibility of the NW to ensure that the compressed mode gaps do not overlap and are not scheduled to overlap the same frame. Gaps exceeding the maximum gap length shall not be processed by the UE and shall interpreted as a faulty message. If the UE detects overlapping gaps, it shall process the gap from the pattern sequence having the lowest TGPSI.

3GPP TSG-RAN WG2 #16 ***Document*** R2-002004

Beijing, China,

3G CHANGE REQUEST

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25.302 CR 076 Current Version: 3.6.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN #10 for approval [X] for information [ ] *(only one box should be marked with an X)*

list TSG meeting no. here ↑

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: USIM [ ] ME [X] UTRAN [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG2 **Date:** 14/10/2000

Subject: Removal of physical channel BER measurement for TDD

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[X]	
A	Corresponds to a correction in a 2G specification	[ ]	
B	Addition of feature	[ ]	
C	Functional modification of feature	[ ]	R'99 X
D	Editorial modification	[ ]	

Reason for change:

For FDD the Physical channel BER is an estimation of the average bit error rate (BER) on the DPCCH after RL combination in Node B. This functionality does not exist for TDD.
Therefore Physical channel BER is marked as FDD only.

Clauses affected: 9.3.5

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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9.3.5 Physical channel BER

Measurement	Physical channel BER
Source	L1(Node-B)
Destination	RRC (RNC)
Reporting Trigger	On-demand, Event-triggered, periodic
Definition	The physical channel BER is measured on the control part after RL combining. Physical channel BER applies to FDD only.

3GPP RAN WG2 Meeting #16
Beijing, 9st – 13th October 2000

Document R2-002020
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.302 CR 077 Current Version: 3.6.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSG-RAN #10 *list expected approval meeting # here ↑*

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strategic [ ] non-strategic [ ] *(for SMG 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: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 9/10/2000

Subject: CPCH model correction

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[X]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		Release 96	[ ]
B	Addition of feature	[ ]		Release 97	[ ]
C	Functional modification of feature	[ ]		Release 98	[ ]
D	Editorial modification	[ ]		Release 99	[X]
				Release 00	[ ]

Reason for change:
- Multi-code channel is not allowed for CPCH. Thus, one CPCH channel can not be mapped into muti-physical channels, i.e. PCPCH channels.

Clauses affected: 6.1

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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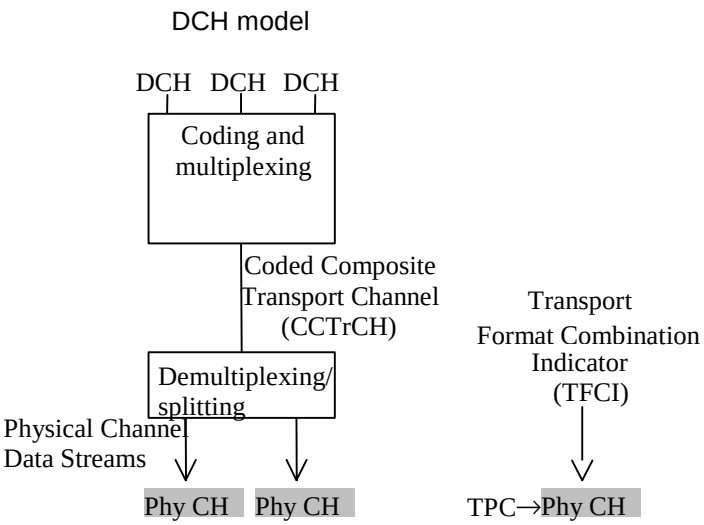
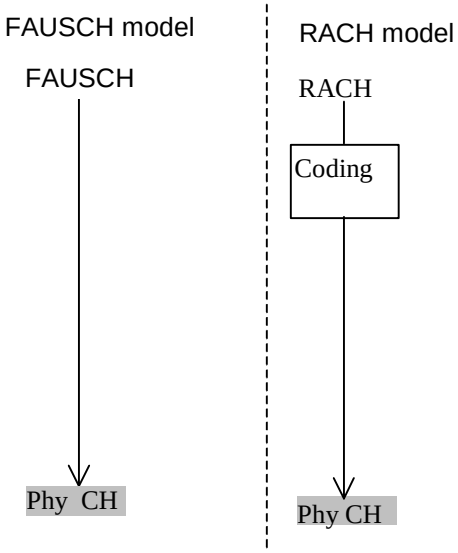
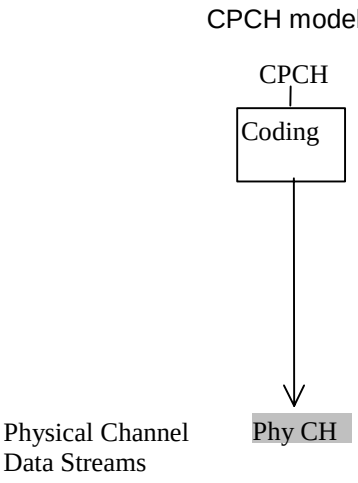
6 Model of physical layer of the UE

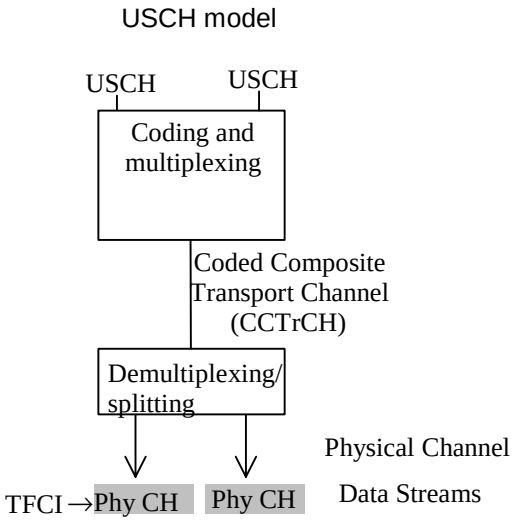
6.1 Uplink models

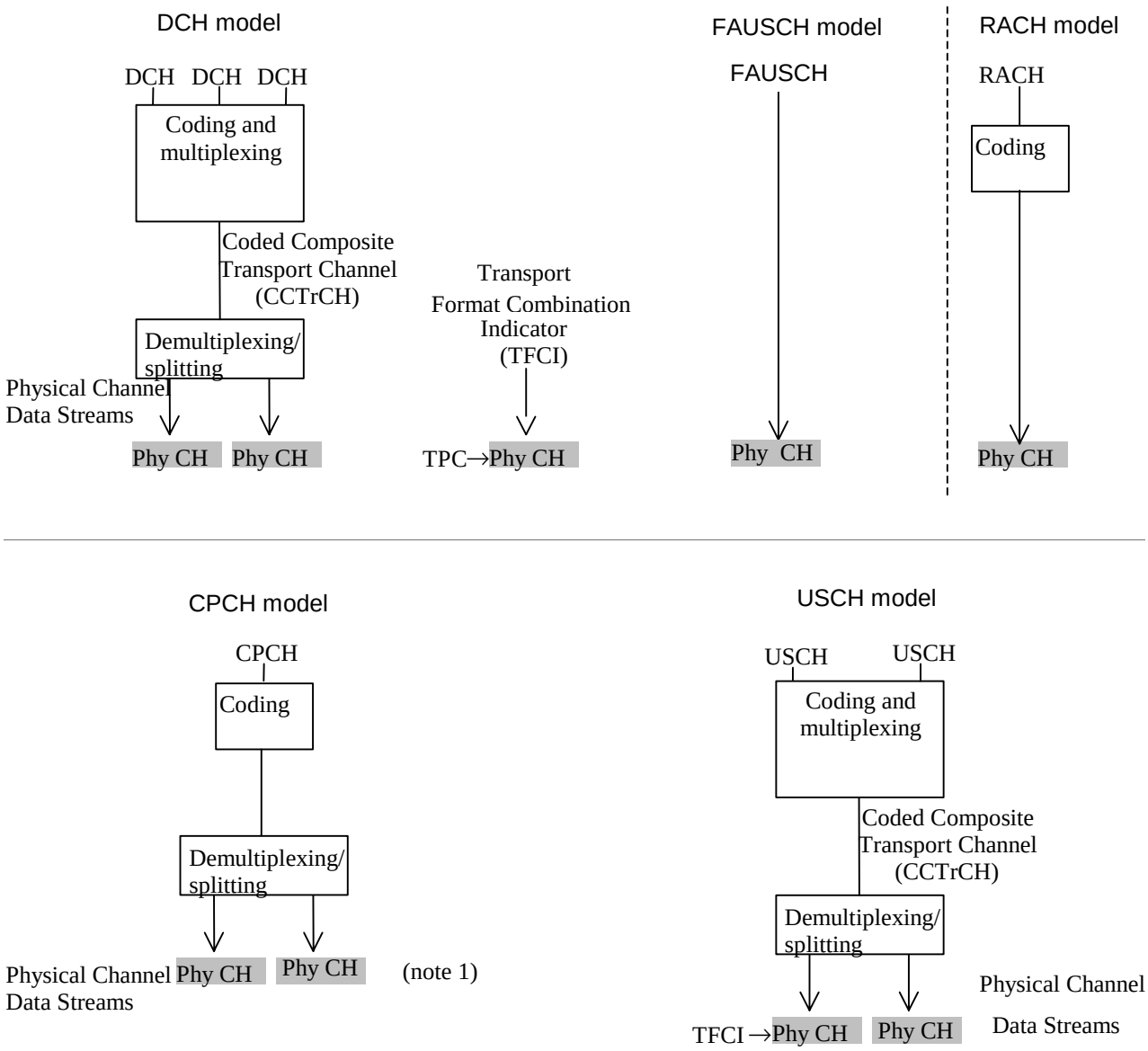
Figure 2 shows models of the UE's physical layer in the uplink for both FDD and TDD mode. It shows the models for DCH, RACH, FAUSCH, CPCH (the latter two used in FDD mode only) and USCH (TDD only). Some restriction exist for the use of different types of transport channel at the same time, these restrictions are described in the chapter "UE Simultaneous Physical Channel combinations". More details can be found in [3] and [4].


DCH model
DCH DCH DCH
Coding and multiplexing
Coded Composite Transport Channel (CCTrCH)
Demultiplexing/ splitting
Physical Channel Data Streams
Phy CH
Phy CH
Transport Format Combination Indicator (TFCI)
TPC→Phy CH


FAUSCH model
FAUSCH
Phy CH
RACH model
RACH
Coding
Phy CH


CPCH model
CPCH
Coding
Physical Channel Data Streams
Phy CH


USCH model
USCH USCH
Coding and multiplexing
Coded Composite Transport Channel (CCTrCH)
Demultiplexing/ splitting
TFCI →Phy CH
Phy CH
Physical Channel Data Streams



~~NOTE 1: Only the data part of the CPCH can be mapped on multiple physical channels (in case of multi-code PCPCH).~~

NOTE ~~2~~1: FAUSCH and CPCH are for FDD only.

NOTE ~~3~~2: USCH is for TDD only.

Figure 2: Model of the UE's physical layer - uplink

The DCH model shows that one or several DCHs can be processed and multiplexed together by the same coding and multiplexing unit. The detailed functions of the coding and multiplexing unit are not defined in the present document but in [3] and [4]. The single output data stream from the coding and multiplexing unit is denoted *Coded Composite Transport Channel (CCTrCH).*

The bits on a CCTrCH Data Stream can be mapped on the same Physical Channel and should have the same C/I requirement.

On the downlink, multiple CCTrCH can be used simultaneously with one UE. In the case of FDD, only one fast power control loop is necessary for these different CCtrCH, but the different CCtrCH can have different C/I requirements to provide different QoS on the mapped Transport Channels. In the case of TDD, different power control loops can be applied for different CCTrCH. One physical channel can only have bits coming from the same CCTrCH.

On the uplink and in the case of FDD, only one CCTrCH can be used simultaneously. On the uplink and in the case of TDD, multiple CCTrCH can be used simultaneously.

When multiple CCTrCH are used by one UE, one or several TFCI can be used, but each CCTrCH has only zero or one corresponding TFCI. In the case of FDD, these different words are mapped on the same DPCCH. In the case of TDD, these different TFCI can be mapped on different DPCH.

The data stream of the CCTrCH is fed to a data demultiplexing/splitting unit that demultiplexes/splits the CCTrCH's data stream onto one or several *Physical Channel Data Streams*.

The current configuration of the coding and multiplexing unit is either signalled to, or optionally blindly detected by, the network for each 10 ms frame. If the configuration is signalled, it is represented by the *Transport Format Combination Indicator (TFCI)* bits. Note that the TFCI signalling only consists of pointing out the current transport format combination within the already configured transport format combination set. In the uplink there is only one TFCI representing the current transport formats on all DCHs of one CCTrCH simultaneously. In FDD mode, the physical channel data stream carrying the TFCI is mapped onto the physical channel carrying the power control bits and the pilot. In TDD mode the TFCI is time multiplexed onto the same physical channel(s) as the DCHs. The exact locations and coding of the TFCI are signalled by higher layers.

The DCH and USCH have the possibility to perform Timing Advance in TDD mode.

For the FAUSCH, there is no coding, since the FAUSCH is only used for the transmission of a reservation request by sending an up-link signalling code (USC) at the time-offset allocated for the specific UE during the 10 ms frame. Due to the fixed time-offset allotted to a specific UE, the FAUSCH is a dedicated control channel.

The model for the RACH case shows that RACH is a common type transport channel in the uplink. RACHs are always mapped one-to-one onto physical channels, i.e. there is no physical layer multiplexing of RACH. Service multiplexing is handled by the MAC layer.

The CPCH, which is another common type transport channel, has a physical layer model as shown in figure2. There is always a single CPCH transport channel mapped to a PCPCH physical channel which implies a one-to-one correspondence between a CPCH TFI and the TFCI conveyed on PCPCH. ~~Demultiplexing/splitting applies to multicode PCPCH physical channels.~~ A CPCH transport channel belongs to a CPCH set which is identified by the application of a common, CPCH set-specific scrambling code for access preamble and collision detection, and multiple PCPCH physical channels. Each PCPCH shall employ a subset of the Transport Format Combinations implied by the Transport Format Set of the CPCH set. A UE can request access to CPCH transport channels of a CPCH set, which is assigned when the service is configured for CPCH transmission.

3GPP RAN WG2 Meeting #16
Beijing, 9st – 13th October 2000

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25.302 CR 078r1 Current Version: 3.6.0

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for approval [X]
for information [ ]

strategic [ ]
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(for SMG 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: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 9/10/2000

Subject: Removal of FAUSCH and ODMA

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	[X]
A	Corresponds to a correction in an earlier release	[ ]
B	Addition of feature	[ ]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Release:

Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change:
- FAUSCH and ODMA don't belong to Release 1999. So, for the consistency with other specification, the contents related FAUSCH and ODMA moved from the TS 25.302.
- The wrong primitive name, CPHY-Modify-Req is corrected to CPHY-RL-Modify-Req.

Clauses affected: 1, 3.2, 6.1, 6.3, 7.2, 8.1, 10.2.2.9, 10.3.5.5,

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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3GPP TS 25.302 V3.6.0 (2000-09)

Technical Specification

3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Services provided by the Physical Layer (Release 1999)

Keywords

Digital cellular telecommunications system,
Universal Mobile Telecommunication System
(UMTS), UTRA, IMT-2000

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Contents

Foreword

This Technical Specification (TS) has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document is a technical specification of the services provided by the physical layer of UTRA to upper layers.

~~The following items are considered for releases beyond Release 99:~~

- ~~Fast Uplink Signalling Channel (FAUSCH);~~
- ~~Opportunity Driven Multiple Access (ODMA).~~

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] 3G TS 23.110: "UMTS Access Stratum; Services and Functions".

[2] 3G TS 25.301: "Radio Interface Protocol Architecture".

[3] 3G TS 25.212: "Multiplexing and channel coding (FDD)".

[4] 3G TS 25.222: "Multiplexing and channel coding (TDD)".

[5] 3G TS 25.224: "Physical Layer Procedures (TDD)".

[6] 3G TS 25.215: "Physical Layer – Measurements (FDD)".

[7] 3G TS 25.213: "Spreading and modulation (FDD)".

[8] 3G TS 25.214: "Physical layer procedures (FDD)".

[9] 3G TS 25.123: "Requirements for Support of Radio Resource Management (TDD)".

[10] 3G TS 25.133: "Requirements for Support of Radio Resource Management (FDD)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in [3] apply.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ARQ	Automatic Repeat Request
BCCH	Broadcast Control Channel
BCH	Broadcast Channel
C-	Control-

CC	Call Control
CCC	CPCH Control Command
CCCH	Common Control Channel
CCH	Control Channel
CCTrCH	Coded Composite Transport Channel
CN	Core Network
CRC	Cyclic Redundancy Check
DC	Dedicated Control (SAP)
DCA	Dynamic Channel Allocation
DCCH	Dedicated Control Channel
DCH	Dedicated Channel
DL	Downlink
DRNC	Drift Radio Network Controller
DSCH	Downlink Shared Channel
DTCH	Dedicated Traffic Channel
FACH	Forward Link Access Channel
FAUSCH	Fast Uplink Signaling Channel
FCS	Fame Check Sequence
FDD	Frequency Division Duplex
GC	General Control (SAP)
HO	Handover
ITU	International Telecommunication Union
kbps	kilo-bits per second
L1	Layer 1 (physical layer)
L2	Layer 2 (data link layer)
L3	Layer 3 (network layer)
LAC	Link Access Control
LAI	Location Area Identity
MAC	Medium Access Control
MM	Mobility Management
Nt	Notification (SAP)
~~OCCCH~~	~~ODMA Common Control Channel~~
~~ODCCH~~	~~ODMA Dedicated Control Channel~~
~~ODCH~~	~~ODMA Dedicated Channel~~
~~ODMA~~	~~Opportunity Driven Multiple Access~~
~~ODTCH~~	~~ODMA Dedicated Traffic Channel~~
~~ORACH~~	~~ODMA Random Access Channel~~
PCCH	Paging Control Channel
PCH	Paging Channel
PDU	Protocol Data Unit
PHY	Physical layer
PhyCH	Physical Channels
RACH	Random Access Channel
RLC	Radio Link Control
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNTI	Radio Network Temporary Identity
RRC	Radio Resource Control
SAP	Service Access Point
SDU	Service Data Unit
SRNC	Serving Radio Network Controller
SRNS	Serving Radio Network Subsystem
TCH	Traffic Channel
TDD	Time Division Duplex
TFCI	Transport Format Combination Indicator
TFI	Transport Format Indicator
TMSI	Temporary Mobile Subscriber Identity
TPC	Transmit Power Control
U-	User-
UE	User Equipment
~~UE_R~~	~~User Equipment with ODMA relay operation enabled~~
UL	Uplink

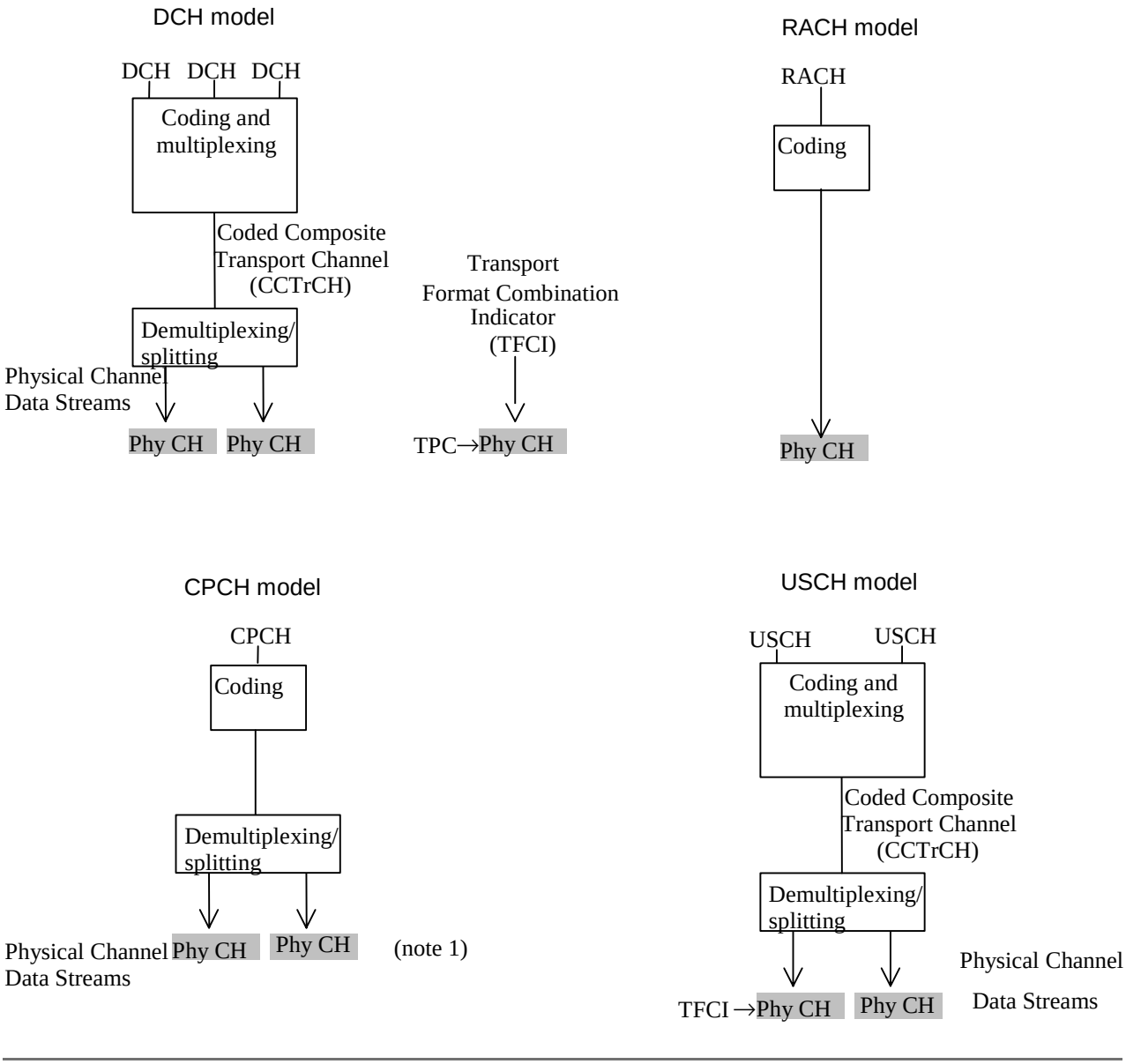
UMTS	Universal Mobile Telecommunications System
URA	UTRAN Registration Area
UTRA	UMTS Terrestrial Radio Access
UTRAN	UMTS Terrestrial Radio Access Network

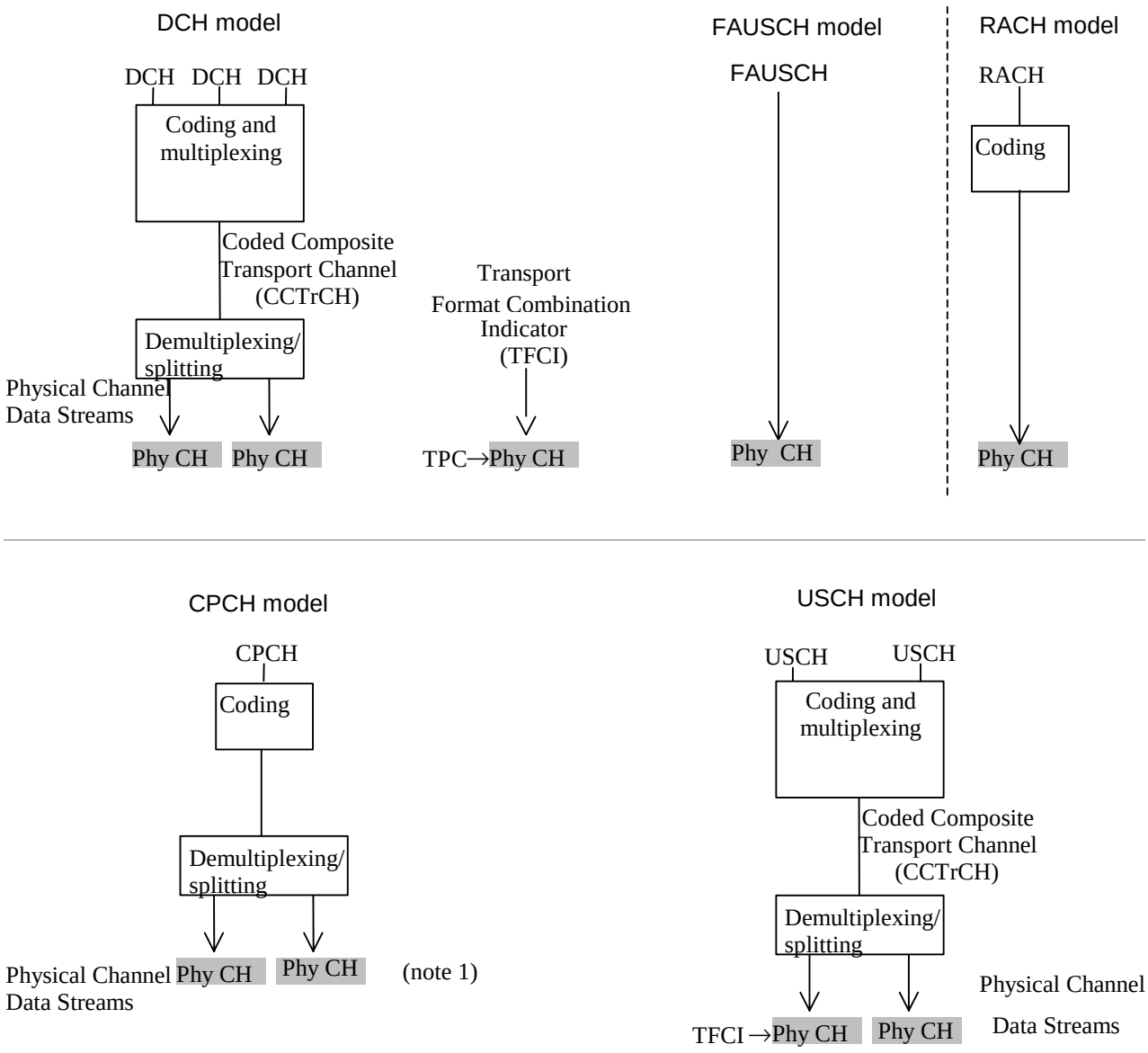
========== SNIP ==========

6 Model of physical layer of the UE

6.1 Uplink models

Figure 2 shows models of the UE's physical layer in the uplink for both FDD and TDD mode. It shows the models for DCH, RACH, ~~FAUSCH,~~ CPCH (the latter two used in FDD mode only) and USCH (TDD only). Some restriction exist for the use of different types of transport channel at the same time, these restrictions are described in the chapter "UE Simultaneous Physical Channel combinations". More details can be found in [3] and [4].


DCH model
DCH DCH DCH
Coding and multiplexing
Coded Composite Transport Channel (CCTrCH)
Demultiplexing/ splitting
Physical Channel Data Streams
Phy CH Phy CH
Transport Format Combination Indicator (TFCI)
TPC→Phy CH
RACH model
RACH
Coding
Phy CH
CPCH model
CPCH
Coding
Demultiplexing/ splitting
Physical Channel Data Streams
Phy CH Phy CH
(note 1)
USCH model
USCH USCH
Coding and multiplexing
Coded Composite Transport Channel (CCTrCH)
Demultiplexing/ splitting
TFCI →Phy CH Phy CH
Physical Channel Data Streams



NOTE 1: Only the data part of the CPCH can be mapped on multiple physical channels (in case of multi-code PCPCH).
NOTE 2: ~~FAUSCH and~~ CPCH ~~are~~ is for FDD only.
NOTE 3: USCH is for TDD only.

Figure 2: Model of the UE's physical layer - uplink

The DCH model shows that one or several DCHs can be processed and multiplexed together by the same coding and multiplexing unit. The detailed functions of the coding and multiplexing unit are not defined in the present document but in [3] and [4]. The single output data stream from the coding and multiplexing unit is denoted *Coded Composite Transport Channel (CCTrCH).*

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On the downlink, multiple CCTrCH can be used simultaneously with one UE. In the case of FDD, only one fast power control loop is necessary for these different CCtrCH, but the different CCtrCH can have different C/I requirements to provide different QoS on the mapped Transport Channels. In the case of TDD, different power control loops can be applied for different CCTrCH. One physical channel can only have bits coming from the same CCTrCH.

On the uplink and in the case of FDD, only one CCTrCH can be used simultaneously. On the uplink and in the case of TDD, multiple CCTrCH can be used simultaneously.

When multiple CCTrCH are used by one UE, one or several TFCI can be used, but each CCTrCH has only zero or one corresponding TFCI. In the case of FDD, these different words are mapped on the same DPCCH. In the case of TDD, these different TFCI can be mapped on different DPCH.

The data stream of the CCTrCH is fed to a data demultiplexing/splitting unit that demultiplexes/splits the CCTrCH's data stream onto one or several *Physical Channel Data Streams*.

The current configuration of the coding and multiplexing unit is either signalled to, or optionally blindly detected by, the network for each 10 ms frame. If the configuration is signalled, it is represented by the *Transport Format Combination Indicator (TFCI)* bits. Note that the TFCI signalling only consists of pointing out the current transport format combination within the already configured transport format combination set. In the uplink there is only one TFCI representing the current transport formats on all DCHs of one CCTrCH simultaneously. In FDD mode, the physical channel data stream carrying the TFCI is mapped onto the physical channel carrying the power control bits and the pilot. In TDD mode the TFCI is time multiplexed onto the same physical channel(s) as the DCHs. The exact locations and coding of the TFCI are signalled by higher layers.

The DCH and USCH have the possibility to perform Timing Advance in TDD mode.

~~For the FAUSCH, there is no coding, since the FAUSCH is only used for the transmission of a reservation request by sending an up-link signalling code (USC) at the time-offset allocated for the specific UE during the 10 ms frame. Due to the fixed time-offset allotted to a specific UE, the FAUSCH is a dedicated control channel.~~

The model for the RACH case shows that RACH is a common type transport channel in the uplink. RACHs are always mapped one-to-one onto physical channels, i.e. there is no physical layer multiplexing of RACH. Service multiplexing is handled by the MAC layer.

The CPCH, which is another common type transport channel, has a physical layer model as shown in figure2. There is always a single CPCH transport channel mapped to a PCPCH physical channel which implies a one-to-one correspondence between a CPCH TFI and the TFCI conveyed on PCPCH. Demultiplexing/splitting applies to multicode PCPCH physical channels. A CPCH transport channel belongs to a CPCH set which is identified by the application of a common, CPCH set-specific scrambling code for access preamble and collision detection, and multiple PCPCH physical channels. Each PCPCH shall employ a subset of the Transport Format Combinations implied by the Transport Format Set of the CPCH set. A UE can request access to CPCH transport channels of a CPCH set, which is assigned when the service is configured for CPCH transmission.

6.2 Downlink models

Figure 3 and figure 4 show the model of the UE's physical layer for the downlink in FDD and TDD mode, respectively. Note that there is a different model for each transport channel type.

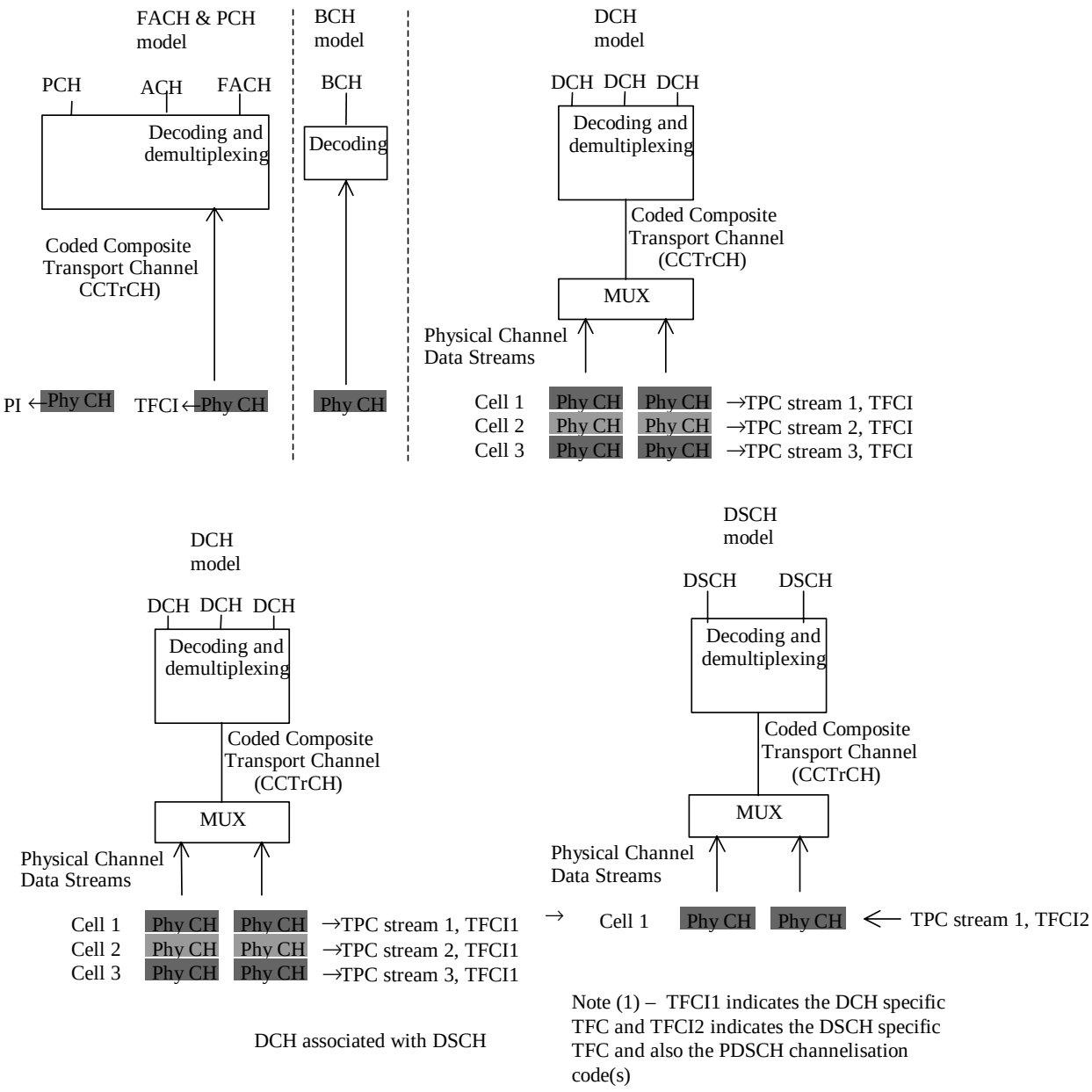

Figure 3: Model of the UE's physical layer - downlink FDD mode

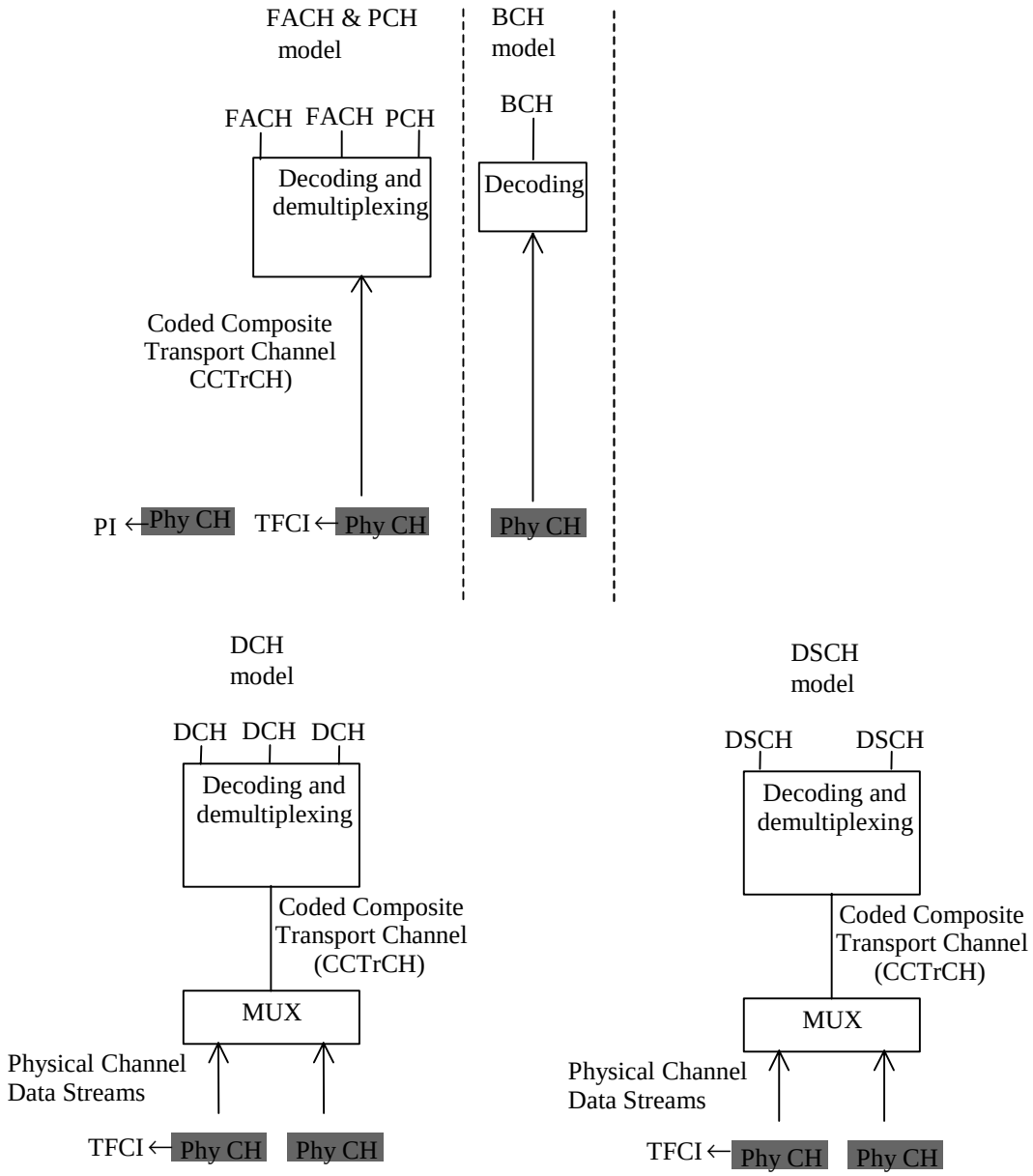

Figure 4: Model of the UE's physical layer – downlink TDD mode

For the DCH case, the mapping between DCHs and physical channel data streams works in the same way as for the uplink. Note however, that the number of DCHs, the coding and multiplexing etc. may be different in uplink and downlink.

In the FDD mode, the differences are mainly due to the soft and softer handover. Further, the pilot, TPC bits and TFCI are time multiplexed onto the same physical channel(s) as the DCHs. Further, the definition of physical channel data stream is somewhat different from the uplink. In TDD mode the TFCI is time multiplexed onto the same physical channel(s) as the DCHs. The exact locations and coding of the TFCI are signalled by higher layers.

Note that it is logically one and the same physical data stream in the active set of cells, even though physically there is one stream for each cell. The same processing and multiplexing is done in each cell. The only difference between the cells is the actual codes, and these codes correspond to the same spreading factor.

The physical channels carrying the same physical channel data stream are combined in the UE receiver, excluding the pilot, and in some cases the TPC bits. TPC bits received on certain physical channels may be combined provided that UTRAN has informed the UE that the TPC information on these channels is identical.

A PCH and one or several FACH can be encoded and multiplexed together forming a CCTrCH. Similarly as in the DCH model there is one TFCI for each CCTrCH for indication of the transport formats used on each PCH and FACH. The PCH is associated with a separate physical channel carrying page indicators (PIs) which are used to trigger UE reception of the physical channel that carries PCH. A FACH or a PCH can also be individually mapped onto a separate physical channel. The BCH is always mapped onto one physical channel without any multiplexing with other transport channels.

6.3 Relay link Model

The Relay link applies to the TDD mode only.

Figure 4 illustrates the model of the UE's physical layer for the TDD mode.

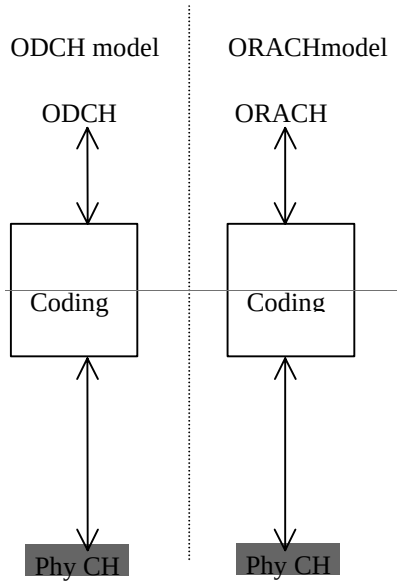

Figure 5: Model of the UE's physical layer - relay link TDD mode

The ORACH is a channel used within UE's to transmit and receive probing messages, and also to transmit and receive small packets of information. The ODCH is used to transmit larger amounts of data over a number of hops between UE's.

========== SNIP ==========

7.2 Types of Transport Channels

A general classification of transport channels is into two groups:

- common channels; and
- dedicated channels (where the UEs can be unambiguously identified by the physical channel, i.e. code and frequency).

Common transport channel types are:

1. Random Access Channel(s) (RACH) characterised by:
   - existence in uplink only;
   - limited data field;
   - collision risk;
   - open loop power control.

~~2. ODMA Random Access Channel(s) (ORACH) characterised by:~~

- ~~used in TDD mode only;~~
- ~~existence in relay-link;~~
- ~~collision risk;~~
- ~~open loop power control;~~
- ~~no timing advance control.~~

~~3~~2. Forward Access Channel(s) (FACH) characterised by:

- existence in downlink only;
- possibility to use beam forming;
- possibility to use slow power control;
- possibility to change rate fast (each 10ms); and
- lack of fast power control.

~~4~~3. Broadcast Channel (BCH) characterised by:

- existence in downlink only;
- low fixed bit rate; and
- requirement to be broadcast in the entire coverage area of the cell.

~~5~~4. Paging Channel (PCH) characterised by:

- existence in downlink only;
- association with a physical layer signal, the Page Indicator, to support efficient sleep mode procedures; and
- requirement to be broadcast in the entire coverage area of the cell.

~~6~~5. Downlink Shared Channel(s) (DSCH) characterised by:

- existence in downlink only;
- possibility to use beamforming;
- possibility to use slow power control;
- possibility to use fast power control, when associated with dedicated channel(s);
- possibility to be broadcast in the entire cell;
- always associated with another channel (DCH or FACH (TDD)).

~~7~~6. CPCH Channel characterised by:

- existence in FDD only;
- existence in uplink only;
- fast power control on the message part;
- possibility to use beam forming;
- possibility to change rate fast;
- collision detection;
- open loop power estimate for pre-amble power ramp-up.

87. Uplink Shared channel (USCH) characterised by:

- used in TDD only;
- existence in uplink only;
- possibility to use beam forming;
- possibility to use power control;
- possibility to change rate fast;
- possibility to use Uplink Synchronisation.

Possibility to use Timing advance Dedicated transport channel types are:

1. Dedicated Channel (DCH) characterised by:
   - existing in uplink or downlink;
   - possibility to use beam forming;
   - possibility to change rate fast (each 10ms);
   - fast power control;
   - possibility to use timing advance in uplink (TDD only);
   - possibility to use Uplink Synchronisation.
2. Fast Uplink Signalling Channel (FAUSCH) to allocate, in conjunction with FACH, dedicated channels; the FAUSCH is characterised by:
   - existing in uplink only;
   - inherent addressing of a UE by a unique time-offset (indicating to a UE when to send an uplink signalling code, USC) related to the beginning of the 10 ms frame;
   - allowing for a UE to notify (by sending an USC) a request for a DCH, the allocation of which is messaged via the FACH. No further information is conveyed via the FAUSCH.

   NOTE: Applicability for TDD mode is FFS.

3. ODMA Dedicated Channel (ODCH) characterised by:
   - used in TDD mode only;
   - possibility to use beam forming;
   - possibility to change rate fast (each 10ms);
   - closed loop power control;
   - closed loop timing advance control.

To each transport channel (except for the FAUSCH, since it only conveys a reservation request),, there is an associated Transport Format (for transport channels with a fixed or slow changing rate) or an associated Transport Format Set (for transport channels with fast changing rate).

7.3 Compressed Mode

Compressed Mode is defined as the mechanism whereby certain idle periods are created in radio frames so that the UE can perform measurements during these periods (more details can be found in [3]).

Compressed Mode is obtained by layer 2 using transport channels provided by the layer 1 as follows:

- compressed mode is controlled by the RRC layer, which configures the layer 2 and the physical layer;

- the number of occurrences of compressed frames is controlled by RRC, and can be modified by RRC signalling;
- it is under the responsibility of the layer 2 if necessary and if possible to either buffer some layer 2 PDUs (typically at the RLC layer for NRT services) or to rate adapt the data flow (similarly to GSM) so that there is no loss of data because of compressed mode. This will be service dependent and controlled by the RRC layer.

For measurements in compressed mode, a transmission gap pattern sequence is defined. A transmission gap pattern sequence consists of alternating transmission gap patterns 1 and 2, and each of these patterns in turn consists of one or two transmission gaps. The transmission gap pattern structure, position and repetition are defined with physical channel parameters described in [3]. In addition, the UTRAN configures compressed mode pattern sequences with the the following parameters:

- **TGMP:** Transmission Gap pattern sequence Measurement Purpose: This parameter defines the purpose this transmission gap pattern sequence is intended for. The following values are used:
  - 'TDD measurement', for which one compressed mode pattern sequence can be configured,
  - 'FDD measurement', for which one compressed mode pattern sequence can be configured,
  - 'GSM measurement', for which three simultaneous compressed mode pattern sequences can be configured,
  - 'Other', for which one compressed mode pattern sequence can be configured;
- **TGPSI:** Transmission Gap Pattern Sequence Identifier selects the compressed mode pattern sequence for which the parameters are to be set. The range of TGPSI is [1 to <MaxTGPS>].

The UE shall support a total number of simultaneous compressed mode pattern sequences, which is determined by the UE's capability to support each of the measurement types categorised by the TGMP. For example, a UE supporting FDD and GSM shall support four simultaneous compressed mode pattern sequences and a UE supporting FDD and TDD shall support two simultaneous compressed mode pattern sequences.

When using simultaneous pattern sequences, it is the responsibility of the NW to ensure that the compressed mode gaps do not overlap and are not scheduled to overlap the same frame. Gaps exceeding the maximum gap length shall not be processed by the UE and shall interpreted as a faulty message. If the UE detects overlapping gaps, it shall process the gap from the pattern sequence having the lowest TGPSI.

8 UE Simultaneous Physical Channels combinations

This clause describes the requirements from the UE to send and receive on multiple Transport Channels, which are mapped on different physical channels simultaneously depending on the service capabilities and requirements. The clause will describe the impacts on the support for multiple services (e.g. speech call and SMS-CB) depending on the UE capabilities.

8.1 FDD Uplink

The table describes the possible combinations of FDD physical channels that can be supported in the uplink on the same frequency by one UE at any one time.

Table 1: FDD Uplink

	Physical Channel Combination	Transport Channel Combination	Mandatory or dependent on UE radio access capabilities	Comment
1	PRACH	RACH	Mandatory	The PRACH physical channel includes the preambles and the message.
~~2~~	~~PRACH~~	~~FAUSCH~~	~~Depending on UE radio access capabilities~~	
~~3~~ 2	PCPCH consisting of one control and one data part during the message portion	CPCH	Depending on UE radio access capabilities	The PCPCH physical channel includes the preambles and the message. The maximum channel bit rate is dependant on UE radio access capabilities.
~~4~~ 3	PCPCH consisting of one control and more than one data part during the message portion	CPCH	Depending on UE radio access capabilities	The PCPCH physical channel includes the preambles and the message. The maximum channel bit rate is dependant on UE radio access capabilities.
~~5~~ 4	DPCCH+DPDCH	One or more DCH coded into a single CCTrCH	Mandatory	The maximum number of DCHs and the maximum channel bit rate are dependant on UE radio access capabilities.
~~6~~ 5	DPCCH+ more than one DPDCH	One or more DCH coded into a single CCTrCH	Depending on UE radio access capabilities	The maximum number of DCHs and the maximum channel bit rate are dependant on UE radio access capabilities.

========== SNIP ==========

10.2.2 CONTROL PRIMITIVES

The control primitives between layer 1 and 3 are shown in table 10.

Table 10: Control primitives between layer 1 and 3

Generic Name	Parameters
CPHY-TrCH-Config-REQ	Transport channel description,
CPHY-TrCH-Config-CNF	
CPHY-TrCH_Release-REQ	
CPHY-TrCH_Release-CNF	
CPHY-RL-Setup-REQ	Physical channel description
CPHY-RL-Setup-CNF	none
CPHY-RL-Release-REQ	none
CPHY-RL-Release-CNF	none
CPHY-RL-Modify-REQ	Physical channel description
CPHY-RL-Modify-CNF	none
CPHY-Commit-REQ	Activation Time
CPHY-CPCH-Estop-IND	none
CPHY-CPCH-Estop-Resp	none
CPHY-CPCH-Estop-REQ	none
CPHY-CPCH-Estop-CNF	none
CPHY-Out-of-Sync-Config-REQ	Out of sync detection parameters
CPHY-Out-of-Sync-Config-CNF	none

10.2.2.1 CPHY-TrCH-Config-REQ

This primitive is used for setting up and configuring a transport channel, and also to modify an existing transport channel.

Primitive Type: request.

Parameters:

- transport channel description.

10.2.2.2 CPHY-TrCH-Config-CNF

This primitive is used for confirming the setting up and configuring a transport channel, and also modifying an existing transport channel.

Primitive Type: confirm.

Parameters:

- none.

10.2.2.3 CPHY-TrCH-Release-REQ

This primitive is used for releasing a transport channel.

Primitive Type: request.

Parameters:

- none.

10.2.2.4 CPHY-TrCH-Release-CNF

This primitive is used for confirming the releasing a transport channel.

Primitive Type: confirm.

Parameters:

- none.

10.2.2.5 CPHY-RL-Setup-REQ

The Request primitive is sent from RRC to L1 for establishment of a Radio link to a certain UE.

Primitive Type: request.

Parameters:

- physical channel description.

10.2.2.6 CPHY-RL-Setup-CNF

The Confirm primitive is returned from L1 to RRC when the Radio link is established. In case L1 is unable to execute the request, this is indicated in the confirm primitive.

Primitive Type: confirm.

Parameters:

- none.

10.2.2.7 CPHY-RL-Release-REQ

The Request primitive is sent from RRC to L1 for release of a Radio link to a certain UE.

Primitive Type: request.

Parameters:

- none.

10.2.2.8 CPHY-RL-Release-CNF

The Confirm primitive is returned from L1 to RRC when the radio link is released.

Primitive Type: confirm.

Parameters:

- none.

10.2.2.9 CPHY-RL-Modify-REQ

The Request primitive is sent from RRC to L1 for modification of a Radio link to a certain UE.

Primitive Type: request.

Parameters:

- physical channel description.

10.2.2.10 CPHY-RL-Modify-CNF

The Confirm primitive is returned from L1 to RRC when the radio link is modified. In case L1 is unable to execute the request, this is indicated in the confirm primitive.

Primitive Type: confirm.

Parameters:

- none.

10.2.2.11 CPHY-Commit-REQ

This primitive is sent from RRC to L1 to synchronise UE and NW for the physical channel modification.

Primitive Type: request.

Parameters:

- activation time.

10.2.2.12 CPHY-CPCH-Estop-IND

The CPHY-CPCH-Estop-IND primitive is used by L1 to notify RRC of a CPCH emergency stop message has been received.

Primitive Type: indication.

Parameters:

- none.

10.2.2.13 CPHY-CPCH-Estop-Resp

This primitive is sent from UE RRC to L1 for emergency stop of the CPCH transmission. After receiving this primitive, UE L1 stopping its transmission on the related CPCH.

Primitive Type: response.

Parameters:

- none.

10.2.2.14 CPHY-CPCH-Estop-REQ

This primitive is sent from RRC to L1 for CPCH Emergency Stop. This primitive is sent for triggering of a CPCH emergency stop. After receiving this primitive, Node B L1 sends CPCH Estop Command to UE. This CPCH Estop Command is all 1 bits pattern in the CCC field of DL DPCCH for CPCH.

Primitive Type: request.

Parameters:

- none.

10.2.2.15 CPHY-CPCH-Estop-CNF

This primitive is sent from Node B L1 to RRC for confirming the emergency stop of the CPCH.

Primitive Type: confirm.

Parameters:

- none.

10.2.2.16 CPHY-Out-of-Sync-Config-REQ

This primitive is sent from RRC to Node B L1 to reconfigure the parameters to detect "in sync" and "out of sync" conditions of uplink physical channel transmission.

Primitive Type: request.

Parameters:

- Out of Sync detection parameters

10.2.2.17 CPHY-Out-of-Sync-Config-CNF

This primitive is sent from Node B L1 to RRC for confirming the Reconfiguration of the Out-of-Sync parameters on Node B L1.

Primitive Type: confirm.

Parameters:

- none.

========== SNIP ==========

10.3.5 Physical channel description

10.3.5.1 Primary SCH

- Tx diversity mode.

10.3.5.2 Secondary SCH

- Tx diversity mode.

10.3.5.3 Primary CCPCH

- Frequency info.
- DL scrambling code.
- Tx diversity mode.
- Timeslot (TDD only).
- Burst type (TDD only).
- Offset (TDD only).
- Repetition period (TDD only).
- Repetition length (TDD only).

10.3.5.4 Secondary CCPCH

- DL scrambling code.
- Channelisation code.
- Tx diversity mode.
- Timeslot (TDD only).
- Burst type (TDD only).
- Midamble shift (TDD only).
- Offset (TDD only).
- Repetition period (TDD only).
- Repetition length (TDD only).
- TFCI presence (TDD only).

10.3.5.5 PRACH

~~NOTE: The PRACH can also be used to map the FAUSCH Transport Channel.~~

- Access Slot.
- Preamble spreading code (FDD only).
- Preamble signature (FDD only).
- Spreading factor for data part.
- Power control info:
  - UL target SIR;
  - primary CCPCH DL TX Power;
  - UL interference;
  - power offset (Power ramping) (FDD only).
- Access Service Class Selection:
  - preamble signature classification information.
- AICH transmission timing parameter (FDD only).
- Timeslots (TDD only).
- Spreading codes (TDD only).
- Midamble codes (TDD only).

3GPP TSG-RAN WG2 Meeting #17 ***Tdoc R2-002410***

Sophia Antipolis, France, 13-17 November 2000

CR-Form-v3

CHANGE REQUEST

⌘ **25.302 CR 080** ⌘ rev **r2** ⌘ Current version: **3.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☒ Core Network ☐

Title:	⌘	Corrections to transport channel mapping
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	***Date:*** ⌘ 16th November 00
Category:	⌘ **F**	***Release:*** ⌘ R99

Use one of the following categories:
- ***F*** *(essential 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)*

Reason for change:	⌘	As a result of the RRC review it was clarified that the transport channels mapped to the SCCPCH was misleading and was not as implied mandatory for both FACH AND PCH to be mapped to each SCCPCH, rather that FACH ~~was always mandatory whereas the~~ or PCH or FACH and PCH may ~~or may not also~~ be included.
Summary of change:	⌘	Clarification on inclusion of PCH on SCCPCH
Consequences if not approved:	⌘	Reduction in SCCPCH capability to carry FACH data, due to unnecessary inclusion of PCH

Clauses affected:	⌘	8.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

8.2 FDD Downlink

The table describes the possible combinations of FDD physical channels that can be supported in the downlink on the same frequency by one UE at any one time.

Table 2: FDD Downlink

	Physical Channel Combination	Transport Channel Combination	Mandatory dependent on UE radio access capabilities	Comment
1	PCCPCH	BCH	Mandatory	
2	SCCPCH	FACH ~~+~~ Or PCH Or FACH ~~and+~~ ~~optionally~~ PCH	Mandatory	The maximum channel bit rate that can be supported is dependent on the UE radio access capabilities. The PCH is included when the UE needs to receive paging on the SCCPCH. The reception of (FACH + PCH) is to enable the reception of broadcast services on the CTCH, mapped to the FACH.
3	PCCPCH + SCCPCH	BCH + (FACH or PCH or (FACH ~~and+ optionally+~~ PCH))	Mandatory	Simultaneous reception of PCCPCH and SCCPCH is only needed at occurrences when the UE needs to read system information on BCH while being in CELL_FACH state, i.e. continuous reception of both PCCPCH and SCCPCH at the same time is not required. The requirement holds for PCCPCH and SCCPCH sent in different cells or in the same cell. The PCH is included when the UE needs to receive paging on the SCCPCH. The reception of (FACH + PCH) is to enable the reception of broadcast services on the CTCH, mapped to the FACH.
4	SCCPCH + AICH	(FACH or PCH or (FACH + PCH))~~and optionally+ PCH~~ + RACH in uplink Or (FACH or PCH or (FACH + PCH))~~and optionally+ PCH~~ + CPCH in uplink	Mandatory	The maximum channel bit rate that can be supported is dependent on the UE radio access capabilities. The PCH is included when the UE needs to receive paging on the SCCPCH. The reception of (FACH + PCH) is to enable the reception of broadcast services on the CTCH, mapped to the FACH. This physical channel combination facilitates the preamble portion of the CPCH in the uplink
5	SCCPCH + DPCCH	(FACH or PCH or (FACH + PCH))~~and optionally+ PCH~~ + CPCH in uplink	Depending on UE radio access capabilities	This physical channel combination facilitates the message portion of the CPCH in the uplink The PCH is included when the UE needs to receive paging on the SCCPCH. The reception of (FACH + PCH) is to enable the reception of broadcast services on the CTCH, mapped to the FACH.
6	More than one SCCPCH	More than one (FACH or PCH or (FACH + PCH))~~and optionally+ PCH~~	Depending on UE radio access capabilities	The PCH is included when the UE needs to receive paging on the SCCPCH. The reception of (FACH + PCH) is to enable the reception of broadcast services on the CTCH, mapped to the FACH.
7	PICH	N/A	Mandatory	
8	DPCCH + DPDCH	One or more DCH coded into a single CCTrCH	Mandatory	The maximum number of DCHs and the maximum channel bit rate are dependent on UE radio access capabilities.
9	DPCCH + more than one DPDCH	One or more DCH coded into a single CCTrCH	Depending on UE radio access capabilities	The maximum number of DCHs and the maximum channel bit rate are dependent on UE radio access capabilities.
10	One or more PDSCH + DPCCH + one or more DPDCH	One or more DSCH coded into a single CCTrCH + one or more DCH coded into a single CCTrCH	Depending on UE radio access capabilities	The maximum number of DCHs and the maximum channel bit rate are dependent on UE radio access capabilities.

	Physical Channel Combination	Transport Channel Combination	Mandatory dependent on UE radio access capabilities	Comment
11	SCCPCH + DPCCH + one or more DPDCH	FACH + one or more DCH coded into a single CCTrCH	Depending on UE radio access capabilities	The maximum number of DCHs and the maximum channel bit rate are dependent on UE radio access capabilities. This combination of physical channels is used for DRAC control of an uplink DCH and for receiving services such as cell broadcast or multicast whilst in connected mode.
12	SCCPCH + one or more PDSCH + DPCCH + one or more DPDCH	FACH + one or more DSCH coded into a single CCTrCH + one or more DCH coded into a single CCTrCH	Depending on UE radio access capabilities	The maximum number of DCHs and the maximum channel bit rate are dependent on UE radio access capabilities. This combination of physical channels is used for simultaneous DSCH and DRAC control of an uplink DCH.
13	One DPCCH + more than one DPDCH	More than one DCH coded into one or more CCTrCH	Depending on UE radio access capabilities	

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CHANGE REQUEST

⌘ **25.302 CR 081** ⌘ rev **-** ⌘ Current version: **3.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☒ Core Network ☐

Title:	⌘	Alignment of measurement reference description
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	***Date:*** ⌘ 8 Nov, 2000
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential 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)

Reason for change:	⌘	There is an ongoing process to align measurement toolbox description. 25.302 should be corrected to keep up with this process.
Summary of change:	⌘	A new reference is introduced and the description in clause 9 is updated.
Consequences if not approved:	⌘	Inconsistency of TS 25.302 to measurement toolbox description

Clauses affected:	⌘	2, 9
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] 3G TS 23.110: "UMTS Access Stratum; Services and Functions".

[2] 3G TS 25.301: "Radio Interface Protocol Architecture".

[3] 3G TS 25.212: "Multiplexing and channel coding (FDD)".

[4] 3G TS 25.222: "Multiplexing and channel coding (TDD)".

[5] 3G TS 25.224: "Physical Layer Procedures (TDD)".

[6] 3G TS 25.215: "Physical Layer – Measurements (FDD)".

[7] 3G TS 25.213: "Spreading and modulation (FDD)".

[8] 3G TS 25.214: "Physical layer procedures (FDD)".

[9] 3G TS 25.123: "Requirements for Support of Radio Resource Management (TDD)".

[10] 3G TS 25.133: "Requirements for Support of Radio Resource Management (FDD)".

[11] 3G TS 25.225: "Physical Layer – Measurements (TDD)".

9 Measurements provided by the physical layer

One of the key services provided by the physical layer is the measurement of various quantities, which are used to trigger or perform a multitude of functions. Both the UE and the UTRAN are required to perform a variety of measurements. The standard will not specify the method to perform these measurements or stipulate that the list of measurements provided in this clause must all be performed. While some of the measurements are critical to the functioning of the network and are mandatory for delivering the basic functionality (e.g., handover measurements, power control measurements), others may be used by the network operators in optimising the network (e.g., radio environment).

Measurements may be made periodically and reported to the upper layers or may be event-triggered (e.g., primary CCPCH becomes better than the previous best primary CCPCH). Another reporting strategy may combine the event triggered and the periodical approach (e.g. falling of link quality below a certain threshold initiates periodical reporting). The measurements are tightly coupled with the service primitives in that the primitives' parameters may constitute some of the measurements.

The list and frequency of measurements, which the physical layer reports to higher layers, is described in this clause. The detailed definition of measurement control and abilities is contained in [6] for FDD and [11] for TDD. The measurement performance requirements together with accuracy, range and mapping is specified in [9] for TDD and in [10] for FDD.

~~The precision requirements of the measurements are specified in TS 25.103. The detailed definition of the measurements together with the range and mapping is contained in TS 25.215 and TS 25.225.~~

The measurement quantities measured by the physical layer shall be such that the following principles are applied:

- for handover measurements, the decoding of parameters on the BCCH logical channel of monitored neighbouring cells, should not, in general, be needed for calculating the measurement result. If there is a need to adjust the measurement result with parameters broadcast on the PCCPCH, these parameters shall be provided by the UTRAN in inband measurement control messages. There may be some exceptions to this rule;

EXAMPLE: It may be necessary to decode the SFN of the measured neighbouring cell for time difference measurements.

- in idle mode or in RRC connected mode using common Transport Channels, the UE shall be able to monitor cells for cell reselection, without being required to frequently decode parameters on the BCCH logical channel of the monitored neighbouring cells. The decoding frequency of these parameters, set by the cell reselection algorithm, should be such that UE standby times are not significantly decreased.

9.1 Model of physical layer measurements

This subclause describes a model for how the physical layer measurements are performed. This model applies both to the UE and Node B measurements.

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CHANGE REQUEST

⌘ **25.302 CR 082** ⌘ rev **-** ⌘ Current version: **3.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☒ Core Network ☐

Title:	⌘	Changing the name of "RSSI" to "Received total wide band power"
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	***Date:*** ⌘ 8 Nov, 2000
Category:	⌘ **F**	***Release:*** ⌘ R99

Use one of the following categories:
F *(essential 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)*

Reason for change:	⌘	This is the adaption of TS25.302 to already agreed CRs (see R1-001253,R1-001290 and R4-000743) to TS25.225 and TS25.215 during RAN WG1 #16.
Summary of change:	⌘	UTRAN Measurement at 9.3.1 "RSSI" changes to "Received total wide band power"
Consequences if not approved:	⌘	Inconsistency of TS25.302 to TS25.225 and TS25.215.

Clauses affected:	⌘	9.3.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

9.3 UTRAN Measurements

9.3.1 Received total wide band power~~RSSI~~

Measurement	Received total wide band power~~RSSI~~
Source	L1 (Node B)
Destination	RRC(RNC)
Reporting Trigger	On-demand, Event-triggered, Periodic
Definition	The received wide band power including the in the receiver generated noise, within the UTRAN uplink channel bandwidth in an UTRAN access point. In case of receiver diversity the reported value shall be the linear average of the power in the diversity branches. The reference point for the Received total wide band power measurement shall be the antenna connector.~~Received Signal Strength Indicator, the wide-band received power within the UTRAN UL channel bandwidth at a UTRAN access point.~~ For TDD this is measured in specified timeslots.