3GPP TSG-RAN Meeting #15 ***RP-020052***
Jeju, Korea, 5 – 8, March, 2002

Title: **Agreed CRs (R99 and Rel-4 Category A) to TS 25.224**

Source: **TSG-RAN WG1**

Agenda item: **7.1.3**

No.	Spec	CR	Rev	R1 T-doc	Subject	Release	Cat	Workitem	V_old	V_new
1	25.224	078	1	R1-02-0343	Removal of quantisation of bj gain factor when calculated from a reference TFC	R99	F	TEI	3.9.0	3.10.0
2	25.224	079	1	R1-02-0343	Removal of quantisation of bj gain factor when calculated from a reference TFC	Rel-4	A	TEI	4.3.0	4.4.0
3	25.224	083	1	R1-02-0501	TDD MAC layer subchannel assignment	R99	F	TEI	3.9.0	3.10.0
4	25.224	084	1	R1-02-0501	TDD MAC layer subchannel assignment	Rel-4	A	TEI	4.3.0	4.4.0
5	25.224	085	-	R1-02-0344	Transmit diversity on PICH	R99	F	TEI	3.9.0	3.10.0
6	25.224	086	-	R1-02-0344	Transmit diversity on PICH	Rel-4	A	TEI	4.3.0	4.4.0

R1-02-0343

CR-Form-v4

CHANGE REQUEST

⌘	**25.224**	**CR**	**078**	⌘ rev	**1**	⌘ Current version:	**3.9.0** ⌘

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

Title: ⌘	Removal of quantisation of β_j gain factor when calculated from a reference TFC		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	14/2/2002
Category: ⌘	**F**	***Release:*** ⌘	R99
	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)*

Reason for change: ⌘	Quantisation of β_j for 3.84Mcps TDD has been inherited from FDD, where it is employed for reasons of simplified transmitter complexity implementation. This is not applicable for 3.84Mcps TDD transmitter implementation. Uplink power control does not function correctly under quantisation of β_j due to inaccurate transmit power adjustments being made on TFC transitions.
Summary of change: ⌘	Quantisation of β_j is not performed in the case that β_j has been calculated from a reference TFC. **Isolated Impact Analysis:** This CR makes an isolated impact which corrects an erroneous function.
Consequences if not approved: ⌘	Unecessary performance degradation under conditions in which the UE frequently selects different TFCs from within the set of allowed TFCs.

Clauses affected: ⌘	4.2.2.3.1		
Other specs affected: ⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	TS 25.223
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.

4.2.2.3.1 Gain Factors

Two or more transport channels may be multiplexed onto a CCTrCH as described in [9]. These transport channels undergo rate matching which involves repetition or puncturing. This rate matching affects the transmit power required to obtain a particular E_b/N_0. Thus, the transmission power of the CCTrCH shall be weighted by a gain factor β.

There are two ways of controlling the gain factors for different TFC's within a CCTrCH transmitted in a radio frame:

- β is signalled for the TFC, or
- β is computed for the TFC, based upon the signalled settings for a reference TFC.

Combinations of the two above methods may be used to associate β values to all TFC's in the TFCS for a CCTrCH. The two methods are described in sections 4.2.2.3.1.1 and 4.2.2.3.1.2 respectively. Several reference TFC's for several different CCTrCH's may be signalled from higher layers.

The weight and gain factors may vary on a radio frame basis depending upon the current SF and TFC used. The setting of weight and gain factors is independent of any other form of power control. That means that the transmit power P_{UL} is calculated according to the formula given in [15] and then the weight and gain factors are applied on top of that, cf. [10].

4.2.2.3.1.1 Signalled Gain Factors

When the gain factor β_j is signalled by higher layers for a certain TFC, the signalled values are used directly for weighting DPCH or PUSCH within a CCTrCH. Exact values are given in [10].

4.2.2.3.1.2 Computed Gain Factors

The gain factor β_j may also be computed for certain TFCs, based on the signalled settings for a reference TFC:

Let β_{ref} denote the signalled gain factor for the reference TFC. Further, let β_j denote the gain factor used for the j-th TFC.

Define the variable: $K_{ref} = \sum_i RM_i \cdot N_i$

where RM_i is the semi-static rate matching attribute for transport channel i, N_i is the number of bits output from the radio frame segmentation block for transport channel i and the sum is taken over all the transport channels i in the reference TFC.

Similarly, define the variable $K_j = \sum_i RM_i \cdot N_i$

where the sum is taken over all the transport channels i in the j-th TFC.

Moreover, define the variable $L_{ref} = \sum_i \frac{1}{SF_i}$

where SF_i is the spreading factor of DPCH or PUSCH i and the sum is taken over all DPCH or PUSCH i used in the reference TFC.

Similarly, define the variable $L_j = \sum_i \frac{1}{SF_i}$

where the sum is taken over all DPCH or PUSCH i used in the j-th TFC.

~~Then the variable A_j, called the nominal power relation for TFC j, is computed as:~~

$$\cancel{A_j = \sqrt{\frac{L_j}{L_{ref}}} \times \sqrt{\frac{K_{ref}}{K_j}}}$$

The gain factors β_j for the *j*-th TFC are then computed as follows:

- ~~If $A_j > 1$, then β_j is the largest quantized β-value, for which the condition $\beta_j \leq 1 / A_j$ holds.~~
- ~~If $A_j \leq 1$, then β_j is the smallest quantized β-value, for which the condition $\beta_j \geq 1 / A_j$ holds.~~

~~The quantized β-values are given in [10].~~

$$\beta_j = \sqrt{\frac{L_{ref}}{L_j}} \times \sqrt{\frac{K_j}{K_{ref}}}$$

No quantisation of β_j is performed and as such, values other than the quantised β_j given in [10] may be used.

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R1-02-0343

CR-Form-v4

CHANGE REQUEST

⌘	**25.224 CR 079**	⌘ rev	**1**	⌘ Current version:	**4.3.0**	⌘

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 [X] Radio Access Network [ ] Core Network [ ]

Title: ⌘	Removal of quantisation of β_j gain factor when calculated from a reference TFC
Source: ⌘	TSG RAN WG1
Work item code: ⌘	TEI
Date: ⌘	14/2/2002
Category: ⌘	**A**
Release: ⌘	REL-4

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)

Reason for change: ⌘	Quantisation of β_j for 3.84Mcps TDD has been inherited from FDD, where it is employed for reasons of simplified transmitter complexity implementation. This is not applicable for 3.84Mcps TDD transmitter implementation. Uplink power control does not function correctly under quantisation of β_j due to inaccurate transmit power adjustments being made on TFC transitions.
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Consequences if not approved: ⌘	Unecessary performance degradation under conditions in which the UE frequently selects different TFCs from within the set of allowed TFCs.

Clauses affected: ⌘	4.2.2.3.1	
Other specs affected: ⌘	[X] Other core specifications ⌘	TS 25.223
	[ ] Test specifications	
	[ ] O&M Specifications	
Other comments: ⌘		

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4.2.2.3.1.1 Signalled Gain Factors

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$$\cancel{A_j = \sqrt{\frac{L_j}{L_{ref}}} \times \sqrt{\frac{K_{ref}}{K_j}}}$$

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~~The quantized β-values are given in [10].~~

$$\beta_j = \sqrt{\frac{L_{ref}}{L_j}} \times \sqrt{\frac{K_j}{K_{ref}}}$$

No quantisation of β_j is performed and as such, values other than the quantised β_j given in [10] may be used.

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Jeju, Korea, 5 – 8, March, 2002

R1-02-0501

CR-Form-v5

CHANGE REQUEST

⌘	**25.224**	**CR**	**083**	⌘ **rev**	**1**	⌘ Current version: **3.9.0** ⌘

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 [X] Radio Access Network [ ] Core Network [ ]

Title: ⌘	TDD MAC Layer Subchannel Assignment		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	Feb. 22, 2002
Category: ⌘	**F** *Use <u>one</u> 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 <u>TR 21.900</u>.	***Release:*** ⌘	R99 *Use <u>one</u> 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: ⌘	TDD PRACH subchannel assignment in physical layer does not allow for proper handling of sequential delivery and subchannel assignment failure.
Summary of change: ⌘	Subchannel assignment logic moved from physical to MAC layer. Text 25.224 section 4.7.1 moved to 25.321 section 11.2.3
Consequences if not approved: ⌘	Loss of sequential delivery and RACH transmissions in the UE.

Clauses affected: ⌘	4.7, 4.7.1, 4.7.2	
Other specs affected: ⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘ 25.321
Other comments: ⌘	Isolated impact analysis: Impacted functionality: PRACH access procedure – ASC subchannel assignment Correction to a function where the specification was found erroneous. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.	

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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.

4.7 Random access procedure

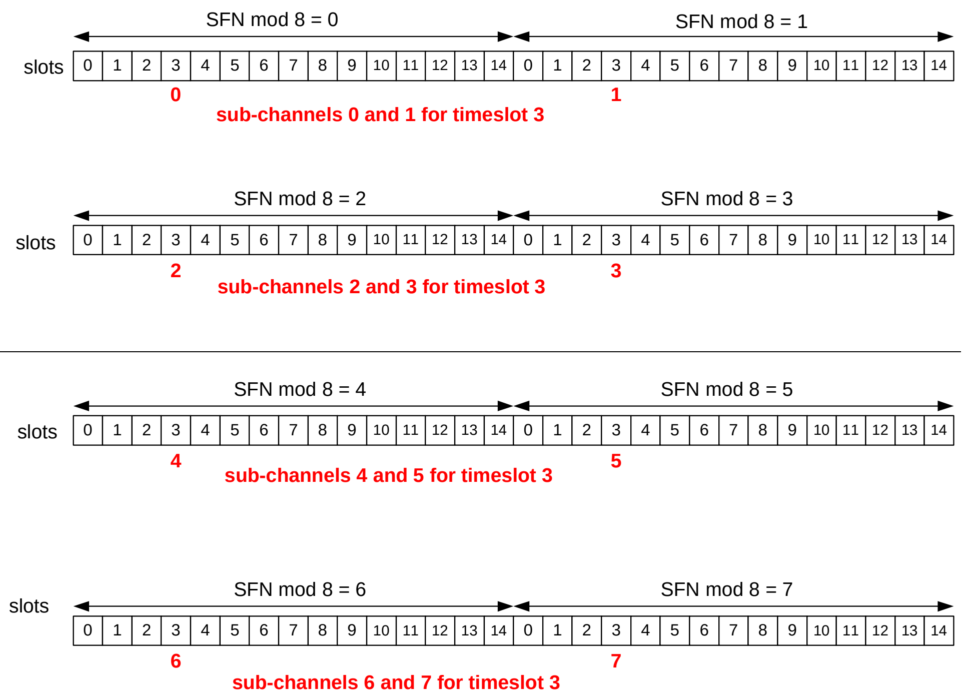
The physical random access procedure described below is invoked whenever a higher layer requests transmission of a message on the RACH. The physical random access procedure is controlled by primitives from RRC and MAC. Retransmission on the RACH in case of failed transmission (e.g. due to a collision) is controlled by higher layers. Thus, the backoff algorithm and associated handling of timers is not described here. The definition of the RACH in terms of PRACH ~~sub-channels and associated~~ Access Service Classes is broadcast on the BCH in each cell. Parameters for common physical channel uplink outer loop power control are also broadcast on the BCH in each cell. The UE needs to decode this information prior to transmission on the RACH.

~~4.7.1 PRACH sub-channels~~

~~A PRACH is defined by a timeslot and a channelization code, which is randomly selected from the PRACH Channelisation Code List [15] signaled by higher layers. In order to separate different ASCs each PRACH has N sub-channels associated with it (numbered from 0 to N-1). N may be assigned the value 1,2,4, or 8 by higher layer signaling. Sub-channel i for a PRACH defined in timeslot k is defined as the k:th slot in the frames where SFN mod N = i. Therefore follows the definition:~~

- ~~Sub-channel i associated to a PRACH defined in timeslot k is defined as the k:th timeslot in the frames where SFN mod N = i.~~

~~Figure 5 illustrates the eight possible subchannels for the case, N=8. For illustration, the figure assumes that the PRACH is assigned timeslot 3.~~



~~Figure 5. Eight sub-channels for timeslot 3~~

4.7.2 Physical random access procedure

The physical random access procedure described in this subclause is initiated upon request from the MAC sublayer (see [18] and [19]).

Note: The selection of a PRACH is done by the RRC Layer.

Before the physical random-access procedure can be initiated, Layer 1 shall receive the following information from the RRC layer using the primitives CPHY-TrCH-Config-REQ and CPHY-RL-Setup/Modify-REQ.

- the available PRACH ~~sub-channels and~~ channelization codes (There is a 1-1 mapping between the channelization code and the midamble shift as defined by RRC) for each Access Service Class (ASC) of the selected PRACH (the selection of a PRACH is done by the RRC). CPHY-RL-Setup/Modify-REQ);
- the timeslot, spreading factor, and midamble type(direct or inverted) for the selected PRACH (CPHY-RL-Setup/Modify-REQ);
- the RACH Transport Format (CPHY-TrCH-Config-REQ);
- the RACH transport channel identity (CPHY-TrCH-Config-REQ)
- the set of parameters for common physical channel uplink outer loop power control(CPHY-RL-Setup/Modify-REQ).

NOTE: The above parameters may be updated from higher layers before each physical random access procedure is initiated.

At each initiation of the physical random access procedure, Layer 1 shall receive the following information from the MAC:

- the ASC of the PRACH transmission;
- the data to be transmitted (Transport Block Set).
- the selected ASC sub-channel. The ASC subchannel is defined in reference [18]. The value is passed in the PHY-Data-REQ is the CFN$_{CELL.}$

The physical random-access procedure shall be performed as follows:

1 Randomly select one channelization code from the set of available~~designated~~ codes for the selected ASC. The random function shall be such that each code is chosen with equal probability.

2 Determine the midamble shift to use, based on the selected channelization code.

~~3 Randomly select a sub-channel from the set of available sub-channels. The random function shall be such that each of the allowed selections is chosen with equal probability.~~

3~~4~~ Set the PRACH message transmission power level according to the specification for common physical channels in uplink (see subclause 4.2.2.2).

4~~5~~ Transmit the RACH Transport Block Set (the random access message) with no timing advance in the selected sub-channel using the selected channelization code.

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Jeju, Korea, 5 – 8, March, 2002

R1-02-0501

CR-Form-v5

CHANGE REQUEST

⌘ **25.224**	**CR 084**	⌘ **rev**	**1** ⌘	Current version:	**4.3.0** ⌘

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

Title: ⌘	TDD MAC Layer Subchannel Assignment		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	Feb. 22, 2002
Category: ⌘	**A**	***Release:*** ⌘	REL-4
	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)*

Reason for change: ⌘	TDD PRACH subchannel assignment in physical layer does not allow for proper handling of sequential delivery and subchannel assignment failure.
Summary of change: ⌘	Subchannel assignment logic moved from physical to MAC layer. Text 25.224 section 4.7.1 moved to 25.321 section 11.2.3
Consequences if not approved: ⌘	Loss of sequential delivery and RACH transmissions in the UE.

Clauses affected: ⌘	4.7, 4.7.1, 4.7.2		
Other specs affected: ⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	25.321
Other comments: ⌘	Isolated impact analysis: Impacted functionality: PRACH access procedure – ASC subchannel assignment Correction to a function where the specification was found erroneous. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.		

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4.7 Random access procedure

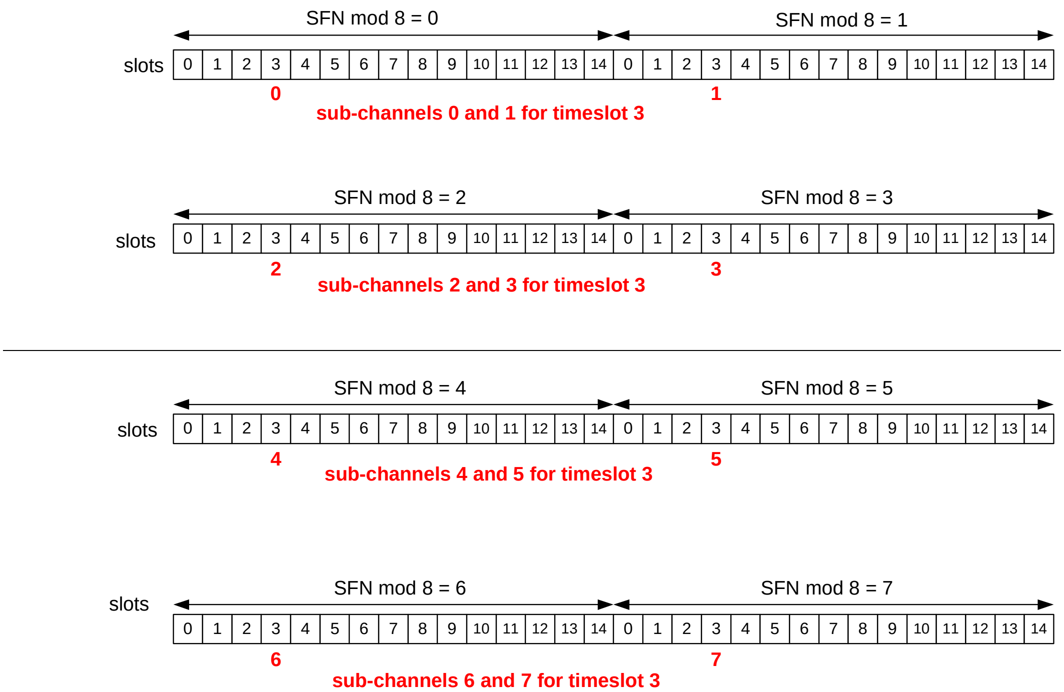
The physical random access procedure described below is invoked whenever a higher layer requests transmission of a message on the RACH. The physical random access procedure is controlled by primitives from RRC and MAC. Retransmission on the RACH in case of failed transmission (e.g. due to a collision) is controlled by higher layers. Thus, the backoff algorithm and associated handling of timers is not described here. The definition of the RACH in terms of PRACH ~~sub-channels and associated~~ Access Service Classes is broadcast on the BCH in each cell. Parameters for common physical channel uplink outer loop power control are also broadcast on the BCH in each cell. The UE needs to decode this information prior to transmission on the RACH. Higher layer signalling may indicate, that in some frames a timeslot shall be blocked for RACH uplink transmission.

~~4.7.1 PRACH sub-channels~~

~~A PRACH is defined by a timeslot and a channelization code, which is randomly selected from the PRACH Channelisation Code List [15] signaled by higher layers. In order to separate different ASCs each PRACH has N sub-channels associated with it (numbered from 0 to N-1). N may be assigned the value 1,2,4, or 8 by higher layer signaling. Sub-channel i for a PRACH defined in timeslot k is defined as the k:th slot in the frames where SFN mod N = i. Therefore follows the definition:~~

- ~~Sub-channel i associated to a PRACH defined in timeslot k is defined as the k:th timeslot in the frames where SFN mod N = i.~~

~~Figure 5 illustrates the eight possible subchannels for the case, N=8. For illustration, the figure assumes that the PRACH is assigned timeslot 3.~~



~~Figure 5: Eight sub-channels for timeslot 3~~

4.7.2 Physical random access procedure

The physical random access procedure described in this subclause is initiated upon request from the MAC sublayer (see [18] and [19]).

Note: The selection of a PRACH is done by the RRC Layer.

Before the physical random-access procedure can be initiated, Layer 1 shall receive the following information from the RRC layer using the primitives CPHY-TrCH-Config-REQ and CPHY-RL-Setup/Modify-REQ.

- the available PRACH ~~sub-channels and~~ channelization codes (There is a 1-1 mapping between the channelization code and the midamble shift as defined by RRC) for each Access Service Class (ASC) of the selected PRACH (the selection of a PRACH is done by the RRC). CPHY-RL-Setup/Modify-REQ);

- the timeslot, spreading factor, and midamble type(direct or inverted) for the selected PRACH (CPHY-RL-Setup/Modify-REQ);

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- the RACH transport channel identity (CPHY-TrCH-Config-REQ)

- the set of parameters for common physical channel uplink outer loop power control(CPHY-RL-Setup/Modify-REQ).

NOTE: The above parameters may be updated from higher layers before each physical random access procedure is initiated.

At each initiation of the physical random access procedure, Layer 1 shall receive the following information from the MAC:

- the ASC of the PRACH transmission;

- the data to be transmitted (Transport Block Set).

  the selected ASC sub-channel. The ASC subchannel is defined in reference [18]. The value is passed in the PHY-Data-REQ is the $CFN_{CELL.}$

In addition, Layer 1 may receive information from higher layers, that a timeslot in certain frames shall be blocked for PRACH uplink transmission.

The physical random-access procedure shall be performed as follows:

1 Randomly select one channelization code from the set of available ~~designated~~ codes for the selected ASC. The random function shall be such that each code is chosen with equal probability.

2 Determine the midamble shift to use, based on the selected channelization code.

~~3 Randomly select a sub-channel from the set of available sub-channels. The random function shall be such that each of the allowed selections is chosen with equal probability.~~

34 Set the PRACH message transmission power level according to the specification for common physical channels in uplink (see subclause 4.2.2.2).

4~~5~~ Transmit the RACH Transport Block Set (the random access message) with no timing advance in the selected sub-channel using the selected channelization code.

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R1-02-0344

CR-Form-v4

CHANGE REQUEST

⌘	**25.224**	**CR**	**085**	⌘ rev	**-**	⌘ Current version:	**3.9.0**	⌘

*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 [X] Radio Access Network [X] Core Network [ ]

Title: ⌘	Transmit Diversity on PICH		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	12-02-02
Category: ⌘	**F**	***Release:*** ⌘	R99
	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)*

Reason for change: ⌘	The mapping of the second channelisation code for the diversity antenna is not consistent for all default midamble allocation schemes.
Summary of change: ⌘	Correction of mapping procedure for second channelisation code.
Consequences if not approved: ⌘	Inconsistent mapping of second channelisation code. **Isolated Impact Analysis:** Correction to a function where the specification was : • Erroneous • This change has an isolated impact

Clauses affected: ⌘	4.6.3.2	
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.

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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.

4.6.3 Transmit Diversity for P-CCPCH and PICH

Space Code Transmit Diversity (SCTD) for the P-CCPCH and PICH may be employed optionally in the UTRAN. The support is mandatory in the UE. The use of SCTD for the P-CCPCH and PICH will be indicated by higher layers. If SCTD is applied to the P-CCPCH then it is also applied to the PICH. Otherwise it is not applied to either.

4.6.3.1 P-CCPCH Transmission Scheme

The open loop downlink transmit diversity scheme for the P-CCPCH is shown in figure 4. Channel coding, rate matching, interleaving and bit-to-symbol mapping are performed as in the non-diversity mode. In Space Code Transmit Diversity mode the data sequence is spread with the channelisation codes $c_{16}^{(k=1)}$ and $c_{16}^{(k=2)}$ and scrambled with the cell specific scrambling code. The spread sequence on code $c_{16}^{(k=2)}$ is then transmitted on the diversity antenna. The power applied to each antenna shall be equal.

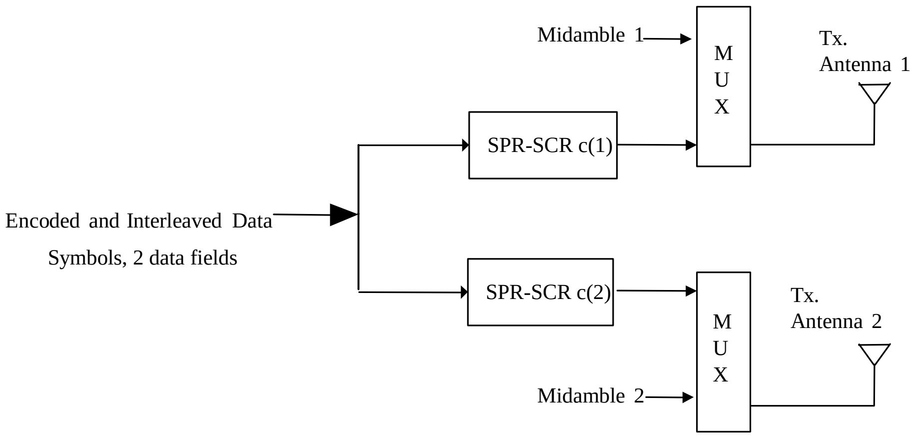

Figure 4: Block Diagram of the transmitter SCTD

4.6.3.2 PICH Transmission Scheme

The transmission scheme for the PICH shall be identical to that of the P-CCPCH, but the channelisation code and midamble assignment depends on whether the PICH is a beacon channel:

- If the PICH is a beacon channel, then the channelisation codes and midambles are identical to that of the P-CCPCH.

- If the PICH is not a beacon channel, ~~then the channelisation codes are assigned by higher layers and the midambles that are associated with these codes by default shall be used, see [8]. The higher layers assign only the code for the first antenna, the code for the second antenna is m+1, where m is a code assigned for the first antenna.~~ then higher layers shall only assign the channelisation code $c_{16}^{(k=m_1)}$ for the first antenna. The midamble $\mathbf{m}^{(k_1)}$ for this antenna shall be the default midamble for this channelisation code, see [8]. The second antenna shall use midamble $\mathbf{m}^{(k_2)}$, where $k_2=k_1+1$ when $k<K_{cell}$, and $k_2=k_1-1$ when $k=K_{cell}$. The channelisation code for the second antenna shall be the code $c_{16}^{(k=m_2)}$, where m_2 is the smallest channelisation code index that is associated with the midamble $\mathbf{m}^{(k_2)}$, according to the default midamble allocation scheme.

3GPP TSG RAN Meeting #15
Jeju, Korea, 5 – 8, March, 2002

R1-02-0344

CR-Form-v4

CHANGE REQUEST

⌘	**25.224**	**CR 086**	⌘ rev	**-**	⌘ Current version:	**4.3.0** ⌘

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Title:	⌘	Transmit Diversity on PICH	
Source:	⌘	TSG RAN WG1	
Work item code:	⌘	TEI	***Date:*** ⌘ 12-02-02
Category:	⌘	A	***Release:*** ⌘ REL-4
		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)*

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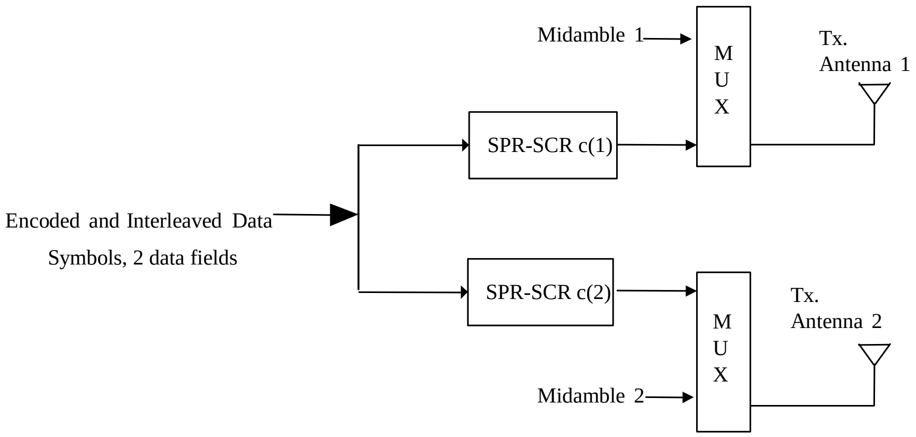

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