TSG-RAN Meeting #14 ***RP-010742***
Kyoto, Japan, 11 – 14, December, 2001

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

Source: **TSG-RAN WG1**

Agenda item: **8.1.3**

No.	Spec	CR	Rev	R1 T-doc	Subject	Release	Cat	W/I Code	V_old	V_new
1	25.224	065	-	R1-01-1006	Removal of the remark on power control	R99	F	TEI	3.8.0	3.9.0
2	25.224	066	-	R1-01-1006	Removal of the remark on power control	Rel-4	A	TEI	4.2.0	4.3.0
3	25.224	067	1	R1-01-1272	Transmit diversity for P-CCPCH and PICH	R99	F	TEI	3.8.0	3.9.0
4	25.224	068	1	R1-01-1272	Transmit diversity for P-CCPCH and PICH	Rel-4	A	TEI	4.2.0	4.3.0
5	25.224	069	1	R1-01-1157	Correction to random access procedure (Primitive from MAC)	R99	F	TEI	3.8.0	3.9.0
6	25.224	070	1	R1-01-1157	Correction to random access procedure (Primitive from MAC)	Rel-4	A	TEI	4.2.0	4.3.0

3GPP TSG RAN Meeting #14
Kyoto, Japan, 11th-14th, December, 2001

R1-01-1006

CR-Form-v3

CHANGE REQUEST

⌘	**25.224**	**CR**	**065**	⌘ rev	**-**	⌘	Current version:	**3.8.0**	⌘

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 [X] Core Network [ ]

Title:	⌘	Removal of the remark on power control		
Source:	⌘	TSG RAN WG1		
Work item code:	⌘	TEI	***Date:*** ⌘	October 12, 2001
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:	⌘	The remark mentioned in 25.224 Table 1 has misleading information. It is not necessarily true that within one time slot the power of all active codes is within 20 dB.
Summary of change:	⌘	The remark on power control in Table 1 is removed.
Consequences if not approved:	⌘	Misleading information in the specification.

Clauses affected:	⌘	4.2.1		
Other specs affected:	⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	
Other comments:	⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.2 Transmitter Power Control

4.2.1 General Parameters

Power control is applied for the TDD mode to limit the interference level within the system thus reducing the intercell interference level and to reduce the power consumption in the UE.
All codes within one timeslot allocated to the same CCTrCH use the same transmission power, in case they have the same spreading factor.

Table 1: Transmit Power Control characteristics

	Uplink	**Downlink**
Power control rate	Variable 1-7 slots delay (2 slot SCH) 1-14 slots delay (1 slot SCH)	Variable, with rate depending on the slot allocation.
TPC Step size	--	1dB or 2 dB or 3 dB
Remarks	All figures are without processing and measurement times	~~Within one timeslot the powers of all active codes may be balanced to within a range of 20 dB~~

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R1-01-1006

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CHANGE REQUEST

⌘	**25.224**	**CR**	**066**	⌘ rev	**-**	⌘	Current version:	**4.2.0** ⌘

*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 [X] Core Network [ ]

Title: ⌘	Removal of the remark on power control		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	October 12, 2001
Category: ⌘	**A**	***Release:*** ⌘	REL-4
	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: ⌘	The remark mentioned in 25.224 Table 1 has misleading information. It is not necessarily true that within one time slot the power of all active codes is within 20 dB.
Summary of change: ⌘	The remark on power control in Table 1 is removed.
Consequences if not approved: ⌘	Misleading information in the specification.

Clauses affected: ⌘	4.2.1	
Other specs affected: ⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘
Other comments: ⌘		

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R1-01-1272

CR-Form-v3

CHANGE REQUEST

⌘	**25.224 CR 067**	⌘ rev	**1**	⌘ Current version:	**3.8.0**	⌘

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 for P-CCPCH and PICH		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	November 15, 2001
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: ⌘	Existing approach (STTD) for P-CCPCH imposes unacceptable HW complexity on UE
Summary of change: ⌘	Removal of STTD and introduction of Space Code Transmit Diversity (SCTD) as a recommended approach for P-CCPCH and PICH.
Consequences if not approved: ⌘	Excessive HW complexity in UE Isolated impact analysis: The transmit diversity scheme for common control channels in changed. Some impact on WG1 specifications, minimal impact on other WGs.

Clauses affected: ⌘	3, 4.6.3, 4.6.3.1, 4.6.3.2 (new), Annex C		
Other specs affected: ⌘	[X] Other core specifications	⌘	25.221, 25.225, 25.102, 25.331, 25.423, 25.433
	[ ] Test specifications		
	[ ] O&M Specifications		
Other comments: ⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3 Abbreviations

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

ASC	Access Service Class
BCCH	Broadcast Control Channel
BCH	Broadcast Channel
CCTrCH	Coded Composite Transport Channel
CDMA	Code Division Multiple Access
CRC	Cyclic Redundancy Check
DCA	Dynamic Channel Allocation
DL	Downlink
DPCH	Dedicated Physical Channel
DTX	Discontinuous Transmission
FACH	Forward Access Channel
FDD	Frequency Division Duplex
ISCP	Interference Signal Code Power
MAC	Medium Access Control
NRT	Non-Real Time
P-CCPCH	Primary Common Control Physical Channel
PC	Power Control
PDSCH	Physical Downlink Shared Channel
PRACH	Physical Random Access Channel
PUSCH	Physical Uplink Shared Channel
RACH	Random Access Channel
RL	Radio Link
RRC	Radio Resource Control
RSCP	Received Signal Code Power
RT	Real Time
RU	Resource Unit
SBGP	Special Burst Generation Gap
SBP	Special Burst Period
SBSP	Special Burst Scheduling Period
S-CCPCH	Secondary Common Control Physical Channel
SCH	Synchronisation Channel
SCTD	Space Code Transmit Diversity
SFN	System Frame Number
SIR	Signal–to-Interference Ratio
SSCH	Secondary Synchronisation Channel
STD	Selective Transmit Diversity
~~STTD~~	~~Space Time Transmit Diversity~~
TA	Timing Advance
TDD	Time Division Duplex
TF	Transport Format
TFC	Transport Format Combination
TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set
TPC	Transmit Power Control
TSTD	Time Switched Transmit Diversity
TTI	Transmission Time Interval
TxAA	Transmit Adaptive Antennas
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunications System
UTRAN	UMTS Radio Access Network
VBR	Variable Bit Rate

4.6.3 Transmit Diversity for P-CCPCH and PICH

~~Block Space Time~~ Space Code Transmit Diversity ~~(Block STTD)~~ (SCTD) for the P-CCPCH and PICH may be employed optionally in the UTRAN. The support is mandatory in the UE. ~~as transmit diversity scheme for the Primary Common Control Physical Channels (P-CCPCH).~~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.

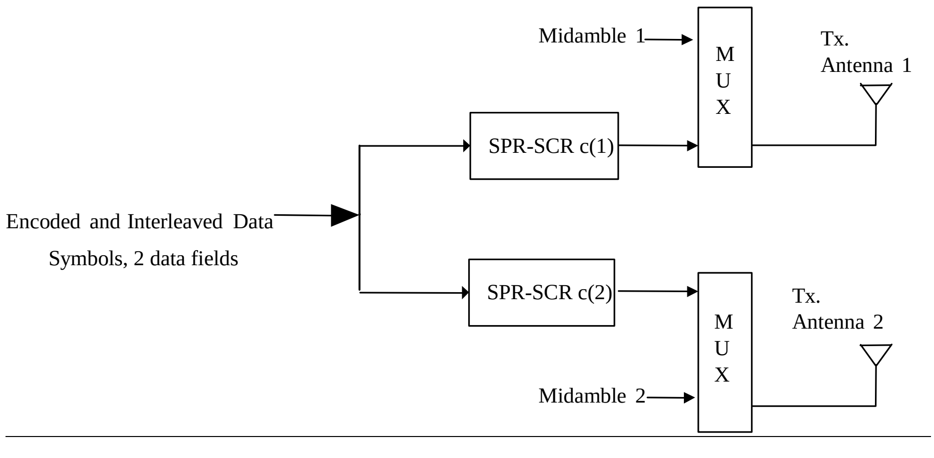
4.6.3.1 P-CCPCH _Transmission Scheme

The open loop downlink transmit diversity ~~employs a Block Space Time Transmit Diversity~~ scheme ~~(Block STTD).~~ For the P-CCPCH ~~A block diagram of the Block STTD transmitter~~ is shown in figure 4. ~~Before Block STTD encoding, c~~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.

~~Block STTD encoding is separately performed for each of the two data fields present in a burst (each data field contains N data symbols). For each data field at the encoder input, 2 data fields are generated at its output, corresponding to each of the diversity antennas. The Block STTD encoding operation is illustrated in figure 5, where the superscript * stands for complex conjugate. If N is an odd number, the first symbol of the block shall not be STTD encoded and the same symbol will be transmitted with equal power from both antennas.~~

~~After Block STTD encoding both branches are separately spread and scrambled as in the non-diversity mode.~~



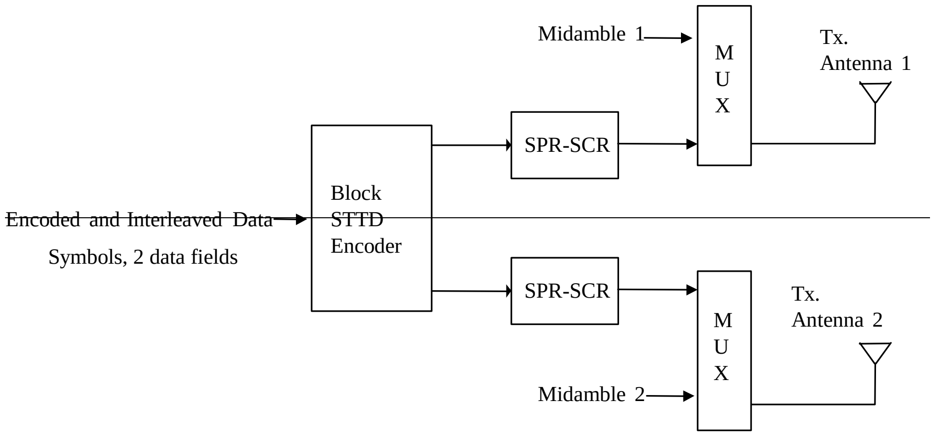
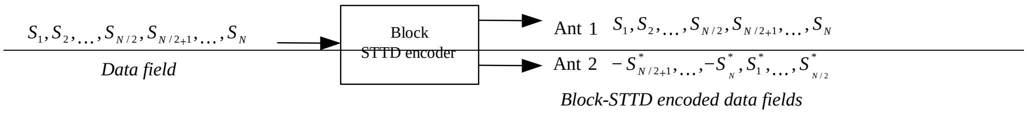


Figure 4: Block Diagram of the transmitter SCTD ~~(STTD)~~



~~**Figure 5: Block Diagram of Block STTD encoder. The symbols S_i are QPSK. N is the length of the block to be encoded**~~

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.

Annex C (informative): Cell search procedure

During the cell search, the UE searches for a cell and determines the downlink scrambling code, basic midamble code and frame synchronisation of that cell. The cell search is typically carried out in three steps:

Step 1: Primary synchronisation code acquisition

During the first step of the cell search procedure, the UE uses the SCH's primary synchronisation code to find a cell. This is typically done with a single matched filter (or any similar device) matched to the primary synchronisation code which is common to all cells. A cell can be found by detecting peaks in the matched filter output.

Note that for a cell of SCH slot configuration case 1, the SCH can be received periodically every 15 slots. In case of a cell of SCH slot configuration case 2, the following SCH slot can be received at offsets of either 7 or 8 slots from the previous SCH slot.

Step 2: Code group identification and slot synchronisation

During the second step of the cell search procedure, the UE uses the SCH's secondary synchronisation codes to identify 1 out of 32 code groups for the cell found in the first step. This is typically done by correlating the received signal with the secondary synchronisation codes at the detected peak positions of the first step. The primary synchronisation code provides the phase reference for coherent detection of the secondary synchronisation codes. The code group can then uniquely be identified by detection of the maximum correlation values.

Each code group indicates a different t_{offset} parameter and 4 specific cell parameters. Each of the cell parameters is associated with one particular downlink scrambling code and one particular long and short basic midamble code. When the UE has determined the code group, it can unambiguously derive the slot timing of the found cell from the detected peak position in the first step and the t_{offset} parameter of the found code group in the second step.

Note that the modulation of the secondary synchronisation codes also indicates the position of the SCH slot within a 2 frames period, e.g. a frame with even or odd SFN. Additionally, in the case of SCH slot configuration following case 2, the SCH slot position within one frame, e.g. first or last SCH slot, can be derived from the modulation of the secondary synchronisation codes.

Step 3: Downlink scrambling code, basic midamble code identification and frame synchronisation

During the third and last step of the cell search procedure, the UE determines the exact downlink scrambling code, basic midamble code and frame timing used by the found cell. The long basic midamble code can be identified by correlation over the P-CCPCH (or any other beacon channel) with the 4 possible long basic midamble codes of the code group found in the second step. A P-CCPCH (or any other beacon channel) always uses the midamble $m^{(1)}$ (and in case of SCTD ~~Block STTD~~ also midamble $m^{(2)}$) derived from the long basic midamble code and always uses a fixed and pre-assigned channelisation code.

When the long basic midamble code has been identified, downlink scrambling code and cell parameter are also known. The UE can read system and cell specific BCH information and acquire frame synchronisation.

Note that even for an initial cell parameter assignment, a cell cycles through a set composed of 2 different cell parameters according to the SFN of a frame, e.g. the downlink scrambling code and the basic midamble code of a cell alternate for frames with even and odd SFN. Cell parameter cycling leaves the code group of a cell unchanged.

If the UE has received information about which cell parameters or SCH configurations to search for, cell search can be simplified.

3GPP TSG RAN Meeting #14 **R1-01-1272**
Kyoto, Japan, 11th-14th, December, 2001

CR-Form-v3

CHANGE REQUEST

⌘	**25.224**	**CR**	**068**	⌘ rev	**1**	⌘	Current version:	**4.2.0** ⌘

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

Title: ⌘	Transmit Diversity for P-CCPCH and PICH		
Source: ⌘	TSG RAN WG1		
Work item code: ⌘	TEI	***Date:*** ⌘	November 15, 2001
Category: ⌘	**A**	***Release:*** ⌘	REL-4
	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: ⌘	Existing approach (STTD) for P-CCPCH imposes unacceptable HW complexity on UE
Summary of change: ⌘	Removal of STTD and introduction of Space Code Transmit Diversity (SCTD) as a recommended approach for P-CCPCH and PICH.
Consequences if not approved: ⌘	Excessive HW complexity in UE Isolated impact analysis: The transmit diversity scheme for common control channels in changed. Some impact on WG1 specifications, minimal impact on other WGs.

Clauses affected: ⌘	3, 4.6.3, 4.6.3.1, 4.6.3.2 (new), Annex C		
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TSTD	Time Switched Transmit Diversity
TTI	Transmission Time Interval
TxAA	Transmit Adaptive Antennas
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunications System
UTRAN	UMTS Radio Access Network
VBR	Variable Bit Rate

4.6.3 Transmit Diversity for P-CCPCH and PICH

~~Block Space Time~~ Space Code Transmit Diversity ~~(Block STTD)~~ (SCTD) for the P-CCPCH and PICH may be employed optionally in the UTRAN. The support is mandatory in the UE. ~~as transmit diversity scheme for the Primary Common Control Physical Channels (P-CCPCH).~~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 ~~employs a Block Space Time Transmit Diversity~~ scheme ~~(Block STTD).~~ for the P-CCPCH

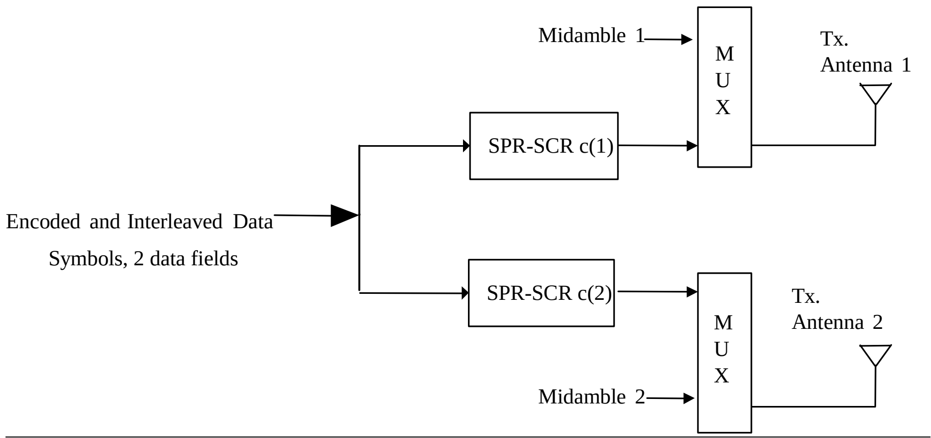
~~A block diagram of the Block STTD transmitter~~ is shown in figure 4. ~~Before Block STTD encoding, c~~Channel coding, rate matching, interleaving and bit-to-symbol mapping are performed as in the non-diversity mode.

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.

~~Block STTD encoding is separately performed for each of the two data fields present in a burst (each data field contains N data symbols). For each data field at the encoder input, 2 data fields are generated at its output, corresponding to each of the diversity antennas. The Block STTD encoding operation is illustrated in figure 5, where the superscript * stands for complex conjugate. If N is an odd number, the first symbol of the block shall not be STTD encoded and the same symbol will be transmitted with equal power from both antennas.~~

~~After Block STTD encoding both branches are separately spread and scrambled as in the non-diversity mode.~~

~~The use of Block STTD encoding will be indicated by higher layers.~~



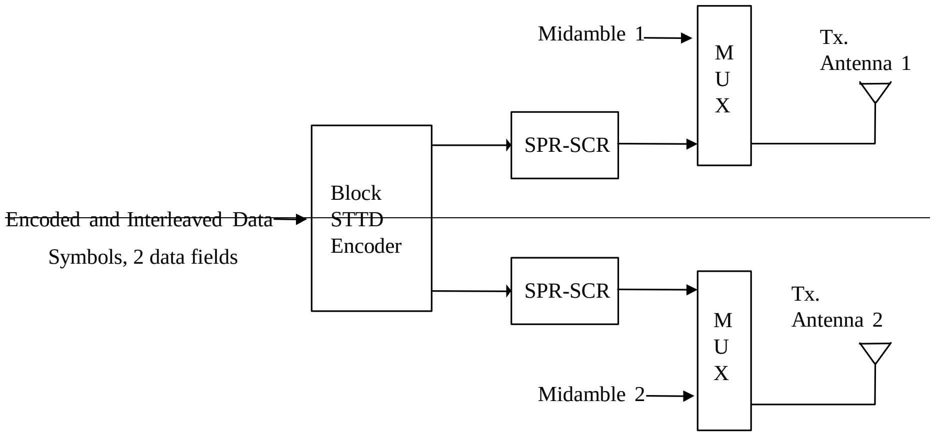
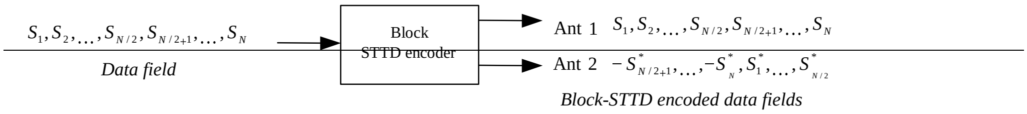


Figure 4: Block Diagram of the transmitter SCTD ~~(STTD)~~



~~**Figure 5: Block Diagram of Block STTD encoder. The symbols S_i are QPSK. N is the length of the block to be encoded**~~

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.

Annex C (informative): Cell search procedure for 3,84 Mcps TDD

During the cell search, the UE searches for a cell and determines the downlink scrambling code, basic midamble code and frame synchronisation of that cell. The cell search is typically carried out in three steps:

Step 1: Primary synchronisation code acquisition

During the first step of the cell search procedure, the UE uses the SCH's primary synchronisation code to find a cell. This is typically done with a single matched filter (or any similar device) matched to the primary synchronisation code which is common to all cells. A cell can be found by detecting peaks in the matched filter output.

Note that for a cell of SCH slot configuration case 1, the SCH can be received periodically every 15 slots. In case of a cell of SCH slot configuration case 2, the following SCH slot can be received at offsets of either 7 or 8 slots from the previous SCH slot.

Step 2: Code group identification and slot synchronisation

During the second step of the cell search procedure, the UE uses the SCH's secondary synchronisation codes to identify 1 out of 32 code groups for the cell found in the first step. This is typically done by correlating the received signal with the secondary synchronisation codes at the detected peak positions of the first step. The primary synchronisation code provides the phase reference for coherent detection of the secondary synchronisation codes. The code group can then uniquely be identified by detection of the maximum correlation values.

Each code group indicates a different t_{offset} parameter and 4 specific cell parameters. Each of the cell parameters is associated with one particular downlink scrambling code and one particular long and short basic midamble code. When the UE has determined the code group, it can unambiguously derive the slot timing of the found cell from the detected peak position in the first step and the t_{offset} parameter of the found code group in the second step.

Note that the modulation of the secondary synchronisation codes also indicates the position of the SCH slot within a 2 frames period, e.g. a frame with even or odd SFN. Additionally, in the case of SCH slot configuration following case 2, the SCH slot position within one frame, e.g. first or last SCH slot, can be derived from the modulation of the secondary synchronisation codes.

Step 3: Downlink scrambling code, basic midamble code identification and frame synchronisation

During the third and last step of the cell search procedure, the UE determines the exact downlink scrambling code, basic midamble code and frame timing used by the found cell. The long basic midamble code can be identified by correlation over the P-CCPCH (or any other beacon channel) with the 4 possible long basic midamble codes of the code group found in the second step. A P-CCPCH (or any other beacon channel) always uses the midamble $m^{(1)}$ (and in case of SCTD ~~Block-STTD~~ also midamble $m^{(2)}$) derived from the long basic midamble code and always uses a fixed and pre-assigned channelisation code.

When the long basic midamble code has been identified, downlink scrambling code and cell parameter are also known. The UE can read system and cell specific BCH information and acquire frame synchronisation.

Note that even for an initial cell parameter assignment, a cell cycles through a set composed of 2 different cell parameters according to the SFN of a frame, e.g. the downlink scrambling code and the basic midamble code of a cell alternate for frames with even and odd SFN. Cell parameter cycling leaves the code group of a cell unchanged.

If the UE has received information about which cell parameters or SCH configurations to search for, cell search can be simplified.

R1-01-1157

CR-Form-v3

CHANGE REQUEST

⌘	**25.224**	**CR**	**069**	⌘ rev	**1**	⌘	Current version:	**3.8.0** ⌘

*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: ⌘	Correction to Random access procedure (Primitive from MAC)			
Source: ⌘	TSG RAN WG1			
Work item code: ⌘	TEI		***Date:*** ⌘	October 12, 2001
Category: ⌘	**F**		***Release:*** ⌘	R99
	Use <u>one</u> 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 <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: ⌘	The reference to the PHY-DATA-REQ Primitive is incorrect and insistent with WG2 specification.
Summary of change: ⌘	The reference to the PHY-DATA-REQ primitive is removed.
Consequences if not approved: ⌘	The incorrect reference in the specification, consistent with section 11.2.2 of 25.321 version 3.8.1

Clauses affected: ⌘	4.2.7	
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.

4.7.2 Physical random access procedure

The physical random access procedure described in this subclause is initiated upon request ~~of a PHY-Data-REQ primitive~~ 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 physical random-access procedure shall be performed as follows:

1 Randomly select one channelization code from the set of 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.

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

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.

3GPP TSG RAN Meeting #14
Kyoto, Japan, 11th-14th, December, 2001

R1-01-1157

CR-Form-v3

CHANGE REQUEST

⌘	**25.224**	**CR 070**	⌘	rev	**1**	⌘	Current version:	**4.2.0** ⌘

*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: ⌘	Correction to Random access procedure (Primitive from MAC)			
Source: ⌘	TSG RAN WG1			
Work item code: ⌘	TEI		***Date:*** ⌘	November 15, 2001
Category: ⌘	**A**		***Release:*** ⌘	REL-4
	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: ⌘	The reference to the PHY-DATA-REQ Primitive is incorrect and insistent with WG2 specification.
Summary of change: ⌘	The reference to the PHY-DATA-REQ primitive is removed.
Consequences if not approved: ⌘	The incorrect reference in the specification, consistent with section 11.2.2 of 25.321 version 3.8.1

Clauses affected: ⌘	4.2.7		
Other specs affected: ⌘	[ ] Other core specifications	⌘	
	[ ] Test specifications		
	[ ] O&M Specifications		
Other comments: ⌘			

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4.7.2 Physical random access procedure

The physical random access procedure described in this subclause is initiated upon request ~~of a PHY-Data-REQ primitive~~ 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).

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 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.

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

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.