

Agenda Item : AH14

Source : LGIC, GBT, Samsung, Lucent

Title : CRs to 25.213 and 25.214 for channelization code allocation method for PCPCH message part

Document for : Approval

These CRs are related to a channelization code allocation method for PCPCH message part. In the current CPCH scheme, each PCPCH channel is mapped to a unique scrambling code, and also mapped to a unique channelization code. Since each PCPCH channel is mapped to a unique scrambling code, each PCPCH channel being mapped to a unique channelization code is redundant and increases hardware complexities. Therefore, it is proposed to use a common channelization code allocation method for all the PCPCH channels. To further reduce the hardware complexities, it is also proposed to use the current DPCH channelization code allocation method to that of PCPCH message part. With these CRs, each PCPCH channel can, at least physically, support all the possible data rates (SF=4~256), and this will improve the flexibility. These CRs should be applied for the current CPCH scheme. If VCAM (Versatile Channel Assignment Method) is adopted, these CRs should also be applied for VCAM.

CHANGE REQUEST		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
25.213	CR	028
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team
For submission to: TSG-RAN #7 <small>list expected approval meeting # here</small>		Current Version: 3.1.1
for approval <input checked="" type="checkbox"/>	for information <input type="checkbox"/>	strategic <input type="checkbox"/> <small>(for SMG use only)</small> non-strategic <input type="checkbox"/>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

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

Source: LGIC, GBT, Samsung, Lucent **Date:** 2000-02-29

Subject: Channelization code allocation method for PCPCH message part

Work item: _____

Category:	F Correction <input type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input checked="" type="checkbox"/> D Editorial modification <input type="checkbox"/>		Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
------------------	--	--	-----------------	--

(only one category shall be marked with an X)

Reason for change: Since each PCPCH channel uses unique scrambling code, a common channelization code allocation method can be used for all the PCPCH channels. To reduce hardware complexity, it is desirable to use the current DPCH channelization code allocation method to PCPCH message part.

Clauses affected: 4.3.1.4
 4.3.2.6

Other specs affected:	Other 3G core specifications <input type="checkbox"/> Other GSM core specifications <input type="checkbox"/> MS test specifications <input type="checkbox"/> BSS test specifications <input type="checkbox"/> O&M specifications <input type="checkbox"/>	→ List of CRs: → List of CRs: → List of CRs: → List of CRs: → List of CRs:	
------------------------------	---	--	--

Other comments: _____



help.doc

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

4.3.1.4 Code allocation for PCPCH message part

The signature in the preamble specifies one of the 16 nodes in the code tree that corresponds to channelization codes of length 16. The sub-tree below the specified node is used for spreading of the message part. The control part is always spread with a channelization code of spreading factor 256. The code is chosen from the lowest branch of the sub-tree. The data part may use channelization codes from spreading factor 4 to 256. A UE is allowed to increase its spreading factor during the message transmission by choosing any channelization code from the uppermost branch of the sub-tree code. For channelization codes with spreading factors less than 16, the node is located on the same sub-tree as the channelization code of the access preamble.

For the control part and data part the following applies:

- The control part is always spread by code $c_c = C_{ch,256,0}$
- The data part is spread by code $c_d = C_{ch,SF,k}$ where SF is the spreading factor of the data part and $k = SF/4$.

The data part may use the code from spreading factor 4 to 256. A UE is allowed to increase SF during the message transmission.

4.3.2.6 PCPCH message part scrambling code

The set of scrambling codes used for the PCPCH message part are 10 ms long, cell-specific, and each scrambling code has a one-to-one correspondence to the signature sequences and the access sub-channels used by the access preamble part. Both long or short scrambling codes can be used to scramble the CPCH message part.

The n :th PCPCH message part scrambling code, denoted $S_{c\text{-msg},n}$, is based on the scrambling sequence and is defined as

In the case when the long scrambling codes are used,

$$S_{c\text{-msg},n}(i) = C_{\text{long},n}(i + 8192), \quad i = 0, 1, \dots, 38399$$

where the lowest index corresponds to the chip transmitted first in time and $C_{\text{long},n}$ is defined in section 4.3.2.2.

In the case when the access resources are shared between the RACH and CPCH, then $S_{c\text{-msg},n}$ is defined as

$$S_{c\text{-msg},n}(i) = C_{\text{long},n}(i + 4096), \quad i = 0, 1, \dots, 38399$$

where the lowest index corresponds to the chip transmitted first in time and $C_{\text{long},n}$ is defined in section 4.3.2.2.

In the case the short scrambling codes are used,

$$S_{c\text{-msg},n}(i) = C_{\text{short},n}(i), \quad i = 0, 1, \dots, 38399$$

<h2 style="margin: 0;">CHANGE REQUEST</h2>			Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
25.214 CR 071	Current Version: 3.1.1		
GSM (AA.BB) or 3G (AA.BBB) specification number ↑	↑ CR number as allocated by MCC support team		
For submission to: TSG-RAN #7 list expected approval meeting # here ↑	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input type="checkbox"/>	(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: (U)SIM ME UTRAN / Radio Core Network
 (at least one should be marked with an X)

Source: LGIC, GBT, Samsung, Lucent **Date:** 2000-02-29

Subject: Channelization code allocation method for PCPCH message part

Work item: [Empty field]

Category:	F Correction <input type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input checked="" type="checkbox"/> D Editorial modification <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
------------------	--	-----------------	--

(only one category shall be marked with an X)

Reason for change: Since each PCPCH channel uses unique scrambling code, a common channelization code allocation method can be used for all the PCPCH channels. Then, CPCH UL channelization code parameter does not have to be included in the System Information message.

Clauses affected: 6.2

Other specs affected:	Other 3G core specifications <input type="checkbox"/> → List of CRs: [Empty] Other GSM core specifications <input type="checkbox"/> → List of CRs: [Empty] MS test specifications <input type="checkbox"/> → List of CRs: [Empty] BSS test specifications <input type="checkbox"/> → List of CRs: [Empty] O&M specifications <input type="checkbox"/> → List of CRs: [Empty]
------------------------------	--

Other comments: [Empty field]



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

6.2 CPCH Access Procedures

For each CPCH physical channel in a CPCH set allocated to a cell the following physical layer parameters are included in the System Information message:

- UL Access Preamble (AP) scrambling code.
- UL Access Preamble signature set
- The Access preamble slot sub-channels group
- AP- AICH preamble channelization code.
- UL Collision Detection(CD) preamble scrambling code.
- CD Preamble signature set
- CD preamble slot sub-channels group
- CD-AICH preamble channelization code.
- CPCH UL scrambling code.
- ~~— CPCH UL channelization code. (variable, data rate dependant)~~
- DPCCH DL channelization code.([512] chip)