

**Agenda Item:**

**Source: SK Telecom**

**Title: CR for channelisation code allocation for USTS in 25.213**

**Document for: Discussion**

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## **1. Introduction**

The procedure for Uplink Synchronous Transmission Scheme (USTS) was accepted in text (in section 9 of TS25.214) at the last Kyongju meeting [1]. However it is required to elaborate the specification related to USTS. More detailed information on the method of channelisation code allocation for USTS should be included in section 4.3.1 of TS25.213 which is the section for uplink channelisation code allocation method. This document have CR for the additional description on the method of channelisation code allocation for USTS in TS25.213.

## **2. References**

[1] SK Telecom, "Uplink Synchronous Transmission Scheme," TSGR1#7 (99)e68

<b>CHANGE REQUEST</b>		<small>Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.</small>	
<b>25.213</b>	<b>CR 016</b>	Current Version: <b>3.0.0</b>	
<small>GSM (AA.BB) or 3G (AA.BBB) specification number ↑</small>		<small>↑ CR number as allocated by MCC support team</small>	
For submission to: <b>TSG-RAN #6</b>	for approval for information	Strategic non-strategic	<small>(for SMG use only)</small>
<small>list expected approval meeting # here ↑</small>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <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:** SK Telecom **Date:** 1999-11-26

**Subject:** Channelization Code Allocation for USTS

**Work item:**

<b>Category:</b>	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"/>	<b>Release:</b>	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input type="checkbox"/> Release 00 <input checked="" type="checkbox"/>
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(only one category shall be marked with an X)

**Reason for change:** The additional descriptions are required to support the channelization code allocation method for USTS.

**Clauses affected:** 4.3.1

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

## 4.3 Code generation and allocation

### 4.3.1 Channelization codes

(snip) -----

The leftmost value in each channelization code word corresponds to the chip transmitted first in time.

For the DPCCH and DPDCHs the following applies:

- The DPCCH is always spread by code  $C_{ch,0} = C_{ch,256,0}$ .
- When only one DPDCH is to be transmitted,  $DPDCH_1$  is spread by code  $C_{ch,SF,k}$  where SF is the spreading factor of  $DPDCH_1$  and  $k = SF_{d,1} / 4$
- When more than one DPDCH is to be transmitted, all DPDCHs have spreading factors equal to 4.  $DPDCH_n$  is spread by the code  $C_{ch,n} = C_{ch,4,k}$ , where  $k = 1$  if  $n \in \{1, 2\}$ ,  $k = 3$  if  $n \in \{3, 4\}$ , and  $k = 2$  if  $n \in \{5, 6\}$ .

In case of USTS, for the DPCCH, the UTRAN assigns a node number  $v_c$  ( $0 \leq v_c \leq 255$ ) in the code-tree that corresponds to channelization codes of length 256. For DPDCH, the UTRAN assigns a node number  $v_d$  ( $0 \leq v_d \leq L-1$ ) in the code-tree that corresponds to channelization codes of length L (i.e., minimum SF). The sub-tree below the assigned node is used for spreading of DPDCHs.

- The DPCCH is always spread by code  $c_c = C_{ch,256,k}$ , where  $k = v_c$ .
- When only one DPDCH is to be transmitted,  $DPDCH_1$  is spread by code  $c_{d,1} = C_{ch,SF,k}$ , where  $k = v_d * SF / L$  and SF is the spreading factor of  $DPDCH_1$ .
- When more than one DPDCH is to be transmitted, all DPDCHs have spreading factors equal to 4 ( $L=4$ ).  $DPDCH_n$  is spread by the code  $c_{d,n} = C_{ch,4,k}$ , where  $k = v_d$  if  $n \in \{1, 2\}$ ,  $k = v_d + 2$  if  $n \in \{3, 4\}$ , and  $k = v_d + 1$  if  $n \in \{5, 6\}$ .