

**Source:** InterDigital  
**Title:** Proposed CR-036 to TS25.224 on DTX and Special Burst Scheduling  
**Document for:** Decision

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## 1 Introduction

Section 4.5.1 Use of Special Bursts fo DTX erroneously defined the parameter NOUTSYNC as the basis for the higher layers to signal the Special Burst repetition period to layer1. Review within WG2 has detemined that this was an inappropriate choice, for two reasons.

- ?? The value signalled to the UE may be different from the value signalled to the Node B, while the theory of operation requires that the values be the same.
- ?? The parameter is intended to serve another purpose and cannot be assumed that a single value is optimum for two different applications.

Therefore, it is proposed to introduce an explicit parameter, to be signalled by higher layers.

## 2 Specific Changes

Section 4.5.1 specifies that the period of repetition for the Special Bursts during DTX shall be defined by a new parameter, identified as

SBP = Special Burst Period = the number of frames of DTX pause per Special Burst

The value of SBP is assigned the following values:

SBGP=special burst generation period for uplink transmissions as defined by TS25.331

SBSP = special burst scheduling parameter for downlink transmissions as defined in TS25.423 and TS25.433

## 3 Changes to related specs

It will be required to introduce changes to WG2 documents to signal the required parameter to the UE and to WG3 documents to signal the required document to the Node B.

CR-Formv3
<b>CHANGE REQUEST</b>
⚡ <b>25.224 CR 036</b> ⚡ rev <b>-</b> ⚡ Current version: <b>3.5.0</b> ⚡

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

<b>Title:</b>	⚡ DTX and Special Burst Scheduling	
<b>Source:</b>	⚡ InterDigital Comm. Corp.	
<b>Work item code:</b>	⚡	<b>Date:</b> ⚡ 17 January, 2001
<b>Category:</b>	⚡ <b>F</b>	<b>Release:</b> ⚡ R99
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (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)

<b>Reason for change:</b>	⚡ Define a parameter to be provided by higher layers to specify the repetition period for special bursts during DTX
<b>Summary of change:</b>	⚡ Introduced NDTXU and NDTXD, which specify the repetition period for special bursts during DTX. Replaced an erroneous reference to an existing parameter, which is intended for another purpose.
<b>Consequences if not approved:</b>	⚡ Special Burst generation during DTX would fail to operate.

<b>Clauses affected:</b>	⚡ 3, 4.5.1	
<b>Other specs affected:</b>	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⚡ 25.331, 25.423, 25.433
<b>Other comments:</b>	⚡	

**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](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.

### 3 Abbreviations

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

<u>ASC</u>	<u>Access Service Class</u>
BCCH	Broadcast Control Channel
BCH	Broadcast Channel
CCTrCH	Coded Composite Transport Channel
DCA	Dynamic Channel Allocation
DPCH	Dedicated Physical Channel
DTX	<del>Discontinuous</del> <u>Discontinuous</u> Transmission
FACH	Forward Access Channel
NRT	Non-Real Time
P-CCPCH	Primary Common Control Physical Channel
PRACH	Physical Random Access Channel
RACH	Random Access Channel
RT	Real Time
RU	Resource Unit
<u>SBGP</u>	<u>Special Burst Generation Gap</u>
<u>SBP</u>	<u>Special Burst Period</u>
<u>SBSP</u>	<u>Special Burst Scheduling Period</u>
S-CCPCH	Secondary Common Control Physical Channel
SCH	Synchronisation Channel
SFN	System Frame Number
SSCH	Secondary Synchronisation Channel
STD	Selective Transmit Diversity
TA	Timing Advance
TPC	Transmit Power Control
TSTD	Time Switched Transmit Diversity
TxAA	Transmit Adaptive Antennas
UE	User Equipment
VBR	Variable Bit Rate

## 4.5 Discontinuous transmission (DTX) of Radio Frames

Discontinuous transmission (DTX) is applied in up- and downlink individually for each CCTrCH in case the total bit rate after transport channel multiplexing differs from the total channel bit rate of the dedicated physical channels allocated to a CCTrCH.

Rate matching is used in order to fill resource units completely, that are only partially filled with data. In the case that after rate matching and multiplexing no data at all is to be transmitted in a resource unit the complete resource unit is discarded from transmission. This applies also to the case where only one resource unit is allocated and no data has to be transmitted.

### 4.5.1 Use of Special Bursts fo DTX

In case there are no transport blocks provided for transmission by higher layers for any given CCTrCH after link establishment, then a Special Burst shall be transmitted in the first allocated frame of the transmission pause. If, including the first frame, there is a consecutive period of Special Burst Period (SBP)  $\cdot N_{\text{OUTSYNC\_IND}}/2$  frames without transport blocks provided by higher layers, then another special burst shall be generated and transmitted at the next possible frame. This pattern shall be continued until transport blocks are provided for the CCTrCH by the higher layers. SBP shall be provided by higher layers . The value of SBP shall be independently specified for uplink and for downlink and shall be designated as

SBGP (special burst generation period) for uplink transmissions

SBSP (special burst scheduling parameter) for downlink transmissions

The default value for both SBGP and SBSP shall be 8.

This special burst shall have the same slot format as the burst used for data provided by higher layers. The special burst is filled with an arbitrary bit pattern, contains a TFCI and TPC bits if inner loop PC is applied and is transmitted for each CCTrCH individually on the physical channel which is defined to carry the TFCI. The TFCI of the special burst shall indicate that there were no transport blocks provided for transmission by higher layers as defined in [15]. The transmission power of the special burst shall be the same as that of the substituted physical channel of the CCTrCH carrying the TFCI.

