

**TSG-RAN Meeting #11  
Palm Springs, CA, U.S.A., 13-16 March 2001**

**RP-010122**

**Title: Agreed CRs to TS 25.427**

**Source: TSG-RAN WG3**

**Agenda item: 5.3.3**

<b>Tdoc_Num</b>	<b>Specification</b>	<b>CR_Num</b>	<b>Revision_Num</b>	<b>CR_Subject</b>	<b>CR_Category</b>	<b>WG_Status</b>	<b>Cur_Ver_Num</b>	<b>New_Ver_Num</b>
R3-010240	25.427	039	1	In/out of sync alignment with WG1 for TDD	F	agreed	3.5.0	3.6.0
R3-010239	25.427	040	1	Editorial Correction	F	agreed	3.5.0	3.6.0
R3-010924	25.427	043	1	Clarification of Services expected from data transport	F	agreed	3.5.0	3.6.0

CR-Form-v3	
<b>CHANGE REQUEST</b>	
⌘ <b>25.427 CR 39</b> ⌘ rev <b>R1</b> ⌘ Current version: <b>3.5.0</b> ⌘	

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

<b>Title:</b>	⌘ In/out of sync alignment with WG1 for TDD		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘	<b>Date:</b>	⌘ 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: <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ To align with WG1 special bursts are needed in the downlink before initial establishment.
<b>Summary of change:</b>	⌘ This CR mandates that the Node B must transmit special bursts as per WG1 before the DL user plane is synchronized in TDD.
<b>Consequences if not approved:</b>	⌘ If this CR was not approved defined layer 1 procedures will not able to be executed.  Backward Compatibility:  Since this CR fixes errors in TDD it is not backward compatible for TDD mode. It is however backward compatible for FDD mode.

<b>Clauses affected:</b>	⌘ 2, 5.1.2		
<b>Other specs affected:</b>	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
<b>Other comments:</b>	⌘		

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- 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.

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## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- For this Release 1999 document, references to 3G documents are for Release 1999 versions (version 3.x.y).

- [1] 3GPP TS 25.301: "Radio Interface Protocol Architecture".
- [2] 3GPP TS 25.401: "UTRAN architecture description".
- [3] 3GPP TS 25.302: "Services provided by the Physical Layer, Source WG2".
- [4] 3GPP TS 25.433: "UTRAN Iub interface NBAP signalling".
- [5] 3GPP TS 25.402: "Synchronization in UTRAN, Stage 2".
- [6] 3GPP TS 25.423: "UTRAN Iur interface RNSAP signalling".
- [7] 3GPP TS 25.215: "Physical layer – Measurements (FDD)".
- [8] 3GPP TS 25.225: "Physical layer – Measurements (TDD)".
- [9] 3GPP TS 25.212: "Multiplexing and channel coding, FDD".
- [10] 3GPP TS 25.222: "Multiplexing and channel coding, TDD".
- [11] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".

## 5.1.2 Downlink



**Figure 2: Downlink data transfer**

The Node B shall only consider a transport bearer synchronised after it has received at least one data frame on this transport bearer before LTOA [4].

The Node B shall consider the DL user plane for a certain RL synchronised if all transport bearers established for carrying DL data frames for this RL are synchronised.

[FDD - Only when the DL user plane is considered synchronised, the Node B shall transmit on the ~~FDD~~-DL DPDCH ~~or TDD-DPCH~~].

[TDD - The Node B shall transmit special bursts on the DL DPCH as per [11], until the DL user plane is considered synchronised].

When the DL user plane is considered synchronised and the Node B does not receive a valid DL Data Frame in a TTI, it assumes that there is no data to be transmitted in that TTI for this transport channel, and shall act as one of the following cases:

- [TDD - If the Node B receives no valid data frames for any transport channel assigned to a UE it shall assume DTX and transmit special bursts as per [11]].
- If the node B is aware of a TFI value corresponding to zero bits for this transport channel, this TFI is assumed. If the TFS contains both a TFI corresponding to “TB length equal to 0 bits” and a TFI corresponding to “number of TB equal to 0”, the node-B shall assume the TFI corresponding to “number of TB equal to 0”. When combining the TFI’s of the different transport channels, a valid TFCI might result and in this case data shall be transmitted on Uu.
- If the node B is not aware of a TFI value corresponding to zero bits for this transport channel or if combining the TFI corresponding to zero bits with other TFI’s, results in an unknown TFI combination, the handling as described in the following paragraph shall be applied.

At each radio frame, the Node B shall build the TFCI value of each CCTrCH, according to the TFI of the DCH data frames multiplexed on this CCTrCH and scheduled for that frame. [FDD - In case the Node B receives an unknown combination of TFIs from the DL Data Frames, it shall transmit only the DPCCCH without TFCI bits.] [TDD - In case the Node receives an unknown combination of DCH data frames, it shall apply DTX, i.e. suspend transmission on the corresponding DPCHs.]

## CHANGE REQUEST

**25.427 CR 40**

rev **1**

Current version: **3.5.0**

**Proposed change affects:** (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	Editorial Correction		
<b>Source:</b>	R-WG3		
<b>Work item code:</b>		<b>Date:</b>	Jan 2001
<b>Category:</b>	<b>F</b>	<b>Release:</b>	R99
	<i>Use one of the following categories:</i> <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.		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	In RAN WG3 #17 meeting, R3-2802(CR37r1) & R3-2628(CR38) had been approved <u>and they were approved in RAN #10. but-But they were not implemented correctly in the specification by MCC team so TS25.427 v.3.5.0 contains errors there were some mistakes when implemented in the specification.</u>  This contribution corrects those errors.
<b>Summary of change:</b>	rev 1 : Cover was revised : adding backward compatibility statement and the clarification of reason for change  1. In chapter 5.6, ")" was added. 2. Correct version of figure 23 was inserted.
<b>Consequences if not approved:</b>	Specification will have errors.  Backward compatibility : This CR is backward compatible with the intended behaviour of the previous version of specification. However, since previous version has errors, some implementation made with wrong information may not be compatible with this CR.

<b>Clauses affected:</b>	5.6, 6.3.3.10.1	
<b>Other specs affected:</b>	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	
<b>Other comments:</b>		

## 5.6 Rx timing deviation measurement [TDD]

In case the *Timing Advance Applied* IE indicates "Yes" (see Ref. [4]) in a cell, the Node B shall, for all UEs using DCHs, monitor the receive timing of the uplink DPCH bursts arriving over the radio interface, and shall calculate the Rx Timing Deviation. If the calculated value, after rounding, is not zero, it shall be reported to the SRNC in a RX TIMING DEVIATION Control Frame belonging to that UE. For limitation of the frequency of this reporting, the Node B shall not send more than one RX TIMING DEVIATION Control Frame per UE within one radio frame.

If the *Timing Advance Applied* IE indicates "No" (see Ref. [4]) in a cell, monitoring of the receive timing of the uplink DPCH bursts is not necessary and no RX TIMING DEVIATION Control Frame shall be sent.

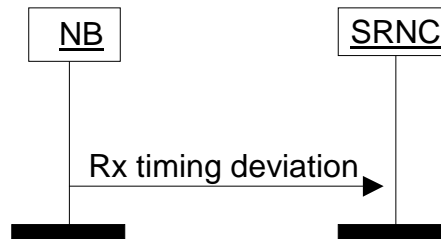


Figure 7: Rx timing deviation

6.3.3.10 [TDD - Timing Advance]

6.3.3.10.1 Payload structure

Figure below shows the structure of the payload when the control frame is used for timing advance.

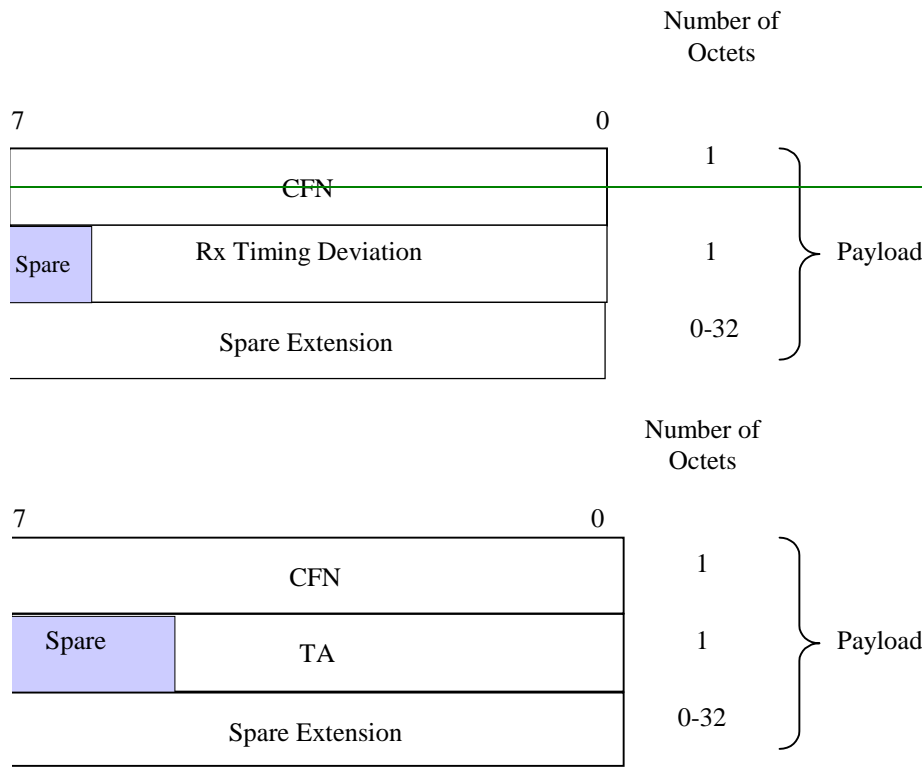


Figure 23: Structure of the Timing Advance control frame

6.3.3.10.2 CFN

The CFN value in the control frame is the frame that the timing advance will occur and is coded as in subclause 6.2.4.3.

6.3.3.10.3 TA

**Description:** UE applied UL timing advance adjustment.

**Value range:** : 0-252 chips, and the resolution is 4 chips.

**Field length:** 6 bits.

6.3.3.10.4 Spare Extension

The Spare Extension is described in subclause 6.3.3.1.4.



CR-Form-v3	
<b>CHANGE REQUEST</b>	
⌘ <b>25.427 CR 43</b> ⌘ re <b>1</b> ⌘ Current version: <b>3.5.0</b> ⌘	

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

<b>Title:</b>	⌘ Clarification of Services expected from data transport		
<b>Source:</b>	⌘ Siemens		
<b>Work item code:</b>	⌘	<b>Date:</b>	⌘ February 2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Release 99
	<i>Use <u>one</u> of the following categories:</i> <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.		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ Removal of unnecessary restriction on the Transport Network Layer according to the discussion in R3-010424.		
<b>Summary of change:</b>	⌘ The services expected from the transport layer are modified. Infrequent Out-of-sequence delivery is permitted. Rev1: Text modified		
<b>Consequences if not approved:</b>	⌘ Unnecessary constraints on the transport network layer limit the independent evolution of RNL and TNL for future releases.  <u>Backward compatibility:</u> Since the protocol specification is unchanged, the modifications are essentially backward compatible. However, the changes may not be backward compatible on implementations that relied on the unnecessary requirements on the TNL.		

<b>Clauses affected:</b>	⌘ 4.2		
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
<b>Other comments:</b>	⌘		

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## 4 General aspects

The specification of  $I_{ub}$  DCH data streams is also valid for  $I_{ur}$  DCH data streams.

The complete configuration of the transport channel is selected by the SRNC and signalled to the Node B via the Iub and Iur control plane protocols.

The parameters of a Transport channel are described in [1]. Transport channels are multiplexed on the downlink by the Node B on radio physical channels, and de-multiplexed on the uplink from radio physical channels to Transport channels.

In Iur interface, every set of coordinated Transport channel related to one UE context that is communicated over a set of cells that are macro-diversity combined within Node B or DRNC, is carried on one transport bearer. This means that there are as many transport bearers as set of coordinated Transport channels and Iur User ports for that communication.

In Iub interface, every set of coordinated Transport channel related to one UE context that is communicated over a set of cells that are macro-diversity combined within Node B is carried on one transport bearer. This means that there are as many transport bearers as set of coordinated Transport channels and Iub User ports for that communication.

Bi-directional transport bearers are used.

### 4.1 DCH FP services

DCH frame protocol provides the following services:

- Transport of TBS across Iub and Iur interface.
- Transport of outer loop power control information between the SRNC and the Node B.
- Support of transport channel synchronization mechanism.
- Support of Node Synchronization mechanism.
- Transfer of DSCH TFI from SRNC to Node B.
- Transfer of Rx timing deviation (TDD) from the Node B to the SRNC.
- Transfer of radio interface parameters from the SRNC to the Node B.

### 4.2 Services expected from data transport

Following service is required from the transport layer:

- ~~In sequence d~~Delivery of FP PDU.

In sequence delivery is not required. However, frequent out-of-sequence delivery may impact the performance and should be avoided.

### 4.3 Protocol Version

This revision of the specification specifies version 1 of the protocol.