

TSG-RAN Meeting #13
Beijing, China, 18 - 21, September, 2001

TSGRP#13(01) 0598

Title: Agreed CRs to TS 25.427

Source: TSG-RAN WG3

Agenda item: 8.3.3/8.3.4/9.4.3

RP Tdoc	R3 Tdoc	Spec	CR_Num	Rev	Release	CR_Subject	Cat	Cur_Ver	New_Ver	Workitem
RP-010598	R3-012262	25.427	057		Rel-4	Uplink power control for LCR TDD	F	4.1.0	4.2.0	LCRTDD-lublur
RP-010598	R3-012615	25.427	060	1	Rel-4	DPC Mode Correction in the User Plane	F	4.1.0	4.2.0	RANimp-RRMopt
RP-010598	R3-012284	25.427	061		Rel-4	25.427 Correction	F	4.1.0	4.2.0	TEI

CHANGE REQUEST

⌘ **25.427 CR 057** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

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 Core Network

Title:	⌘ Uplink Power Control for LCR TDD		
Source:	⌘ R-WG3		
Work item code:	⌘ LCRTDD-lublur	Date:	⌘ August 2001
Category:	⌘ F	Release:	⌘ Rel-4
	<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ Uplink inner loop power control for 1.28 Mcps TDD is closed loop as in FDD. So it is necessary to make the "Outer Loop Power Control" procedure (currently tagged "FDD") in the DCH Frame Protocol applicable for 1.28 Mcps TDD as well, to allow UL SIR Target adjustment via the DCH Frame Protocol.
Summary of change:	⌘ The Outer loop PC information transfer procedure text and payload definition is generalised to include both FDD mode and 1.28 Mcps TDD mode..
Consequences if not approved:	<p>⌘ If this CR is not approved, uplink power control for LCR TDD would not work properly. Deviations between WG3 specs and and WG1 specification 25.224 ch. 5.1.1.4 where power control for LCR TDD is described would remain.</p> <p>The CR is backward compatible to the current version of R99: If the CR is only implemented in one side of the protocol, still all R99 functions work as specified in the current R99 version, without a deviation at message syntax or functional level.</p> <p>This CR has only isolated impact to the current version of R99: If the CR is only implemented in one side of the protocol, still all R99 functions not addressed by this CR work as specified in the current R99 version, without a deviation at message syntax or functional level.</p>

Clauses affected:	⌘ 5.4 , 6.3.3.4		
Other specs affected:	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	CR048 for 25.435v4.1.0 CR059 for 25.435v4.1.0

Other comments: ☼ This CR is based on the "in principle agreed" CR of R3#22 in R3-012077. The changes also take into account the (editorial) corrections agreed at R3#22 in R3-012062.

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.

5.4 Outer loop PC information transfer [FDD, 1.28Mcps TDD]

Based, for example, on the CRCI values and on the quality estimate in the UL frames, SRNC modifies the SIR target used by the UL Inner Loop Power Control by including the absolute value of the new SIR target in the OUTER LOOP PC control frame sent to the Node B's.

At the reception of the OUTER LOOP PC control frame, the Node B shall immediately update the SIR target used for the inner loop power control [1.28Mcps TDD - of the respective CCH for UL DCHs] with the specified value.

The OUTER LOOP PC control frame can be sent via any of the transport bearers dedicated to one UE. [1.28Mcps TDD - In case of multiple CCHs carrying DCHs, the OUTER LOOP PC control frame can be sent via any of the transport bearers carrying DCHs which belong to the CCH for which the UL SIR Target shall be adjusted.]

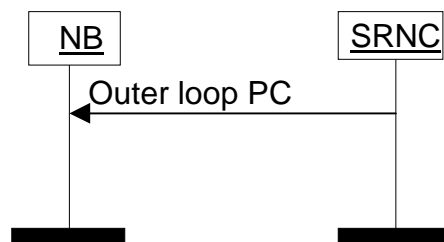


Figure 5: Outer loop power control information transfer

6.3.3.4 UL Outer loop power control [FDD, 1.28Mcps TDD]

6.3.3.4.1 Payload structure

Figure below shows the structure of the payload when control frame is used for the UL outer loop power control.

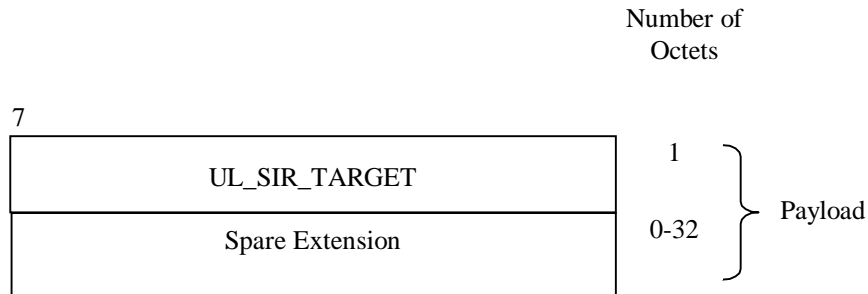


Figure 17: Structure of the payload for outer loop PC control frame

6.3.3.4.2 SIR Target

Description: Value (in dB) of the SIR target to be used by the UL inner loop power control.

SIR Target is given in the unit UL_SIR_TARGET where:

UL_SIR_TARGET = 000	SIR Target = -8.2 dB
UL_SIR_TARGET = 001	SIR Target = -8.1 dB
UL_SIR_TARGET = 002	SIR Target = -8.0 dB
...	
UL_SIR_TARGET = 254	SIR Target = 17.2 dB
UL_SIR_TARGET = 255	SIR Target = 17.3 dB

Value range: {-8.2...17.3 dB}, step 0.1 dB.

Field length: 8 bits.

6.3.3.4.3 Spare Extension

The Spare Extension is described in subclause 6.3.3.1.4.

CR-Form-v3

CHANGE REQUEST

⌘ **25.427 CR 060** ⌘ rev **1** ⌘ Current version: **4.1.0** ⌘

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 Core Network

Title:	⌘ DPC Mode Correction in the User Plane		
Source:	⌘ R-WG3		
Work item code:	⌘ RANimp-RRMopt	Date:	⌘ August 2001
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ The DPC Mode is not present in the figure on Radio Interface Parameter Update control frame structure. Furthermore, some editorial corrections are needed.
Summary of change:	⌘ R1: Addition of a reference to TS 25.214. This is used to specify the behaviour depending on the DPC Mode value. R0: Correction of the figure describing the Radio Interface Parameter Update control frame structure (addition of the DPC Mode), editorial corrections and addition of an abbreviation This change is backward compatible with the Release 99 version of the specification. This correction has an isolated impact on the Radio Interface Parameter Update User Plane procedure.
Consequences if not approved:	⌘ If this CR is not approved, the specification will remain unclear.

Clauses affected:	⌘ 2, 3.2, 6.3.3.9.1, 6.3.3.9.5	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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.

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. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [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)".
- [12] 3GPP TS 25.214: "Physical Layer Procedures (FDD)".

3.2 Abbreviations

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

CFN	Connection Frame Number
CRC	Cyclic Redundancy Checksum
CRCI	CRC Indicator
DCH	Dedicated Transport Channel
DL	Downlink
<u>DPC</u>	<u>Downlink Power Control</u>
DSCH	Downlink Shared Channel
DTX	Discontinuous Transmission
FP	Frame Protocol
FT	Frame Type
PC	Power Control
QE	Quality Estimate
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
TFCI	Transport Format Combination Indicator
ToA	Time of arrival
<u>TPC</u>	<u>Transmit Power Control</u>
TTI	Transmission Time Interval
UL	Uplink

6.3.3.9.1 Payload structure

The figure below shows the structure of the payload when the control frame is used for signalling radio interface parameter updates.

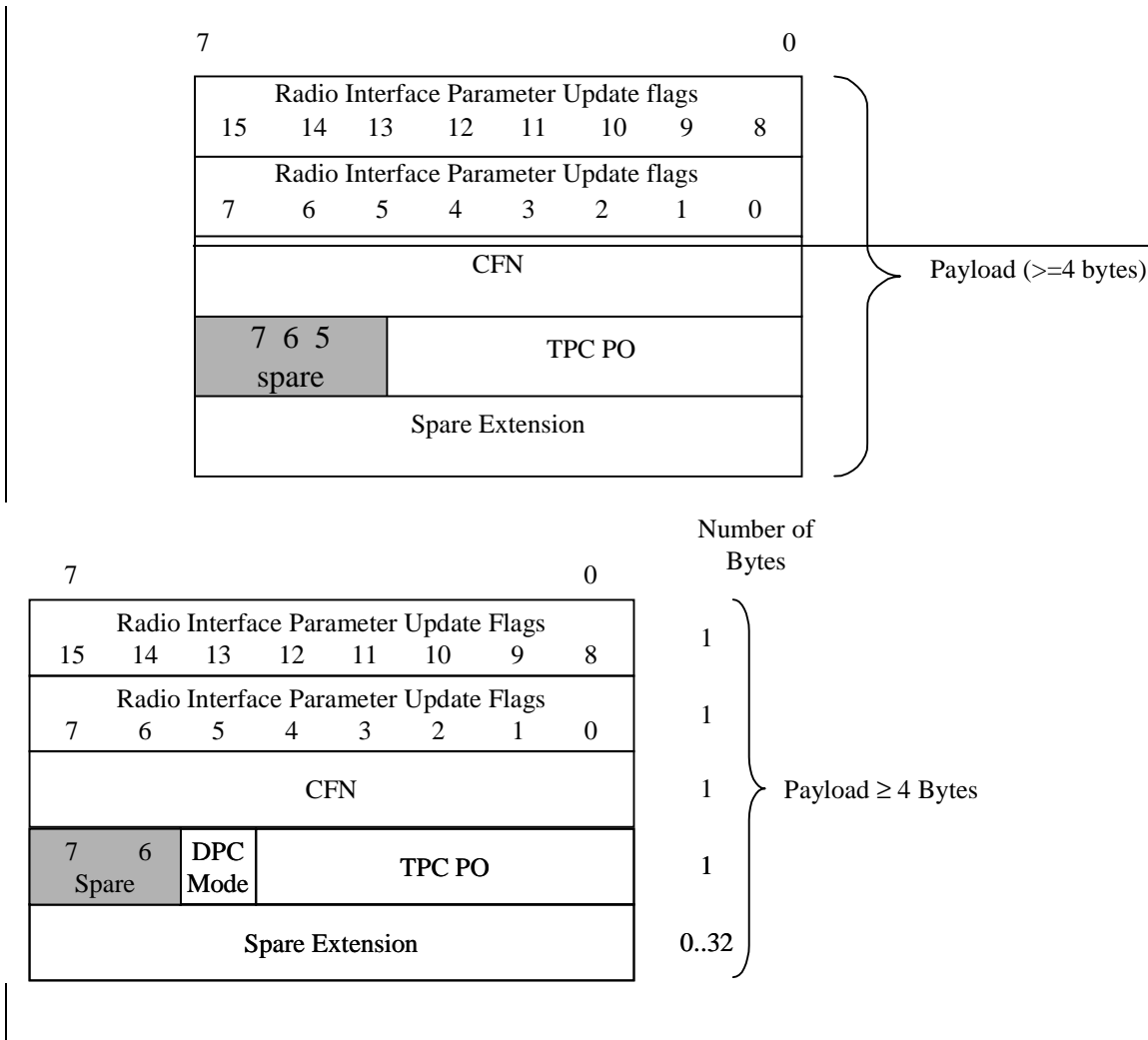


Figure 22: Structure of the payload for the Radio Interface Parameter Update control frame

6.3.3.9.5 DPC ~~m~~Mode

Description: DPC ~~mode~~Mode to be applied in the UL.

Value range: {0,1}

The DPC Mode shall be applied as specified in [12].~~Bit 0: The Node B shall estimate the UE transmitted TOC command and update the power in every slot;~~

~~Bit 1: The Node B shall estimate the UE transmitted TOC command over three slots and shall update the power in every three slots.~~

Field length: 1 bit.

CR-Form-v3	
CHANGE REQUEST	
⌘ 25.427 CR 061 ⌘ rev ⌘ Current version: 4.1.0 ⌘	

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 Core Network

Title:	⌘ Incorrect CR Implementation		
Source:	⌘ R-WG3		
Work item code:	⌘ TEI	Date:	⌘ 2001-08
Category:	⌘ F	Release:	⌘ REL-4
	<p>Use <u>one</u> of the following categories:</p> <p>F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>

Reason for change:	⌘ In version 4.1.0, CR054 r1(R3-011650) was not implemented correctly. This CR was approved in RAN #12.
Summary of change:	⌘ "DCH" is added in proper place. This CR is backward compatible
Consequences if not approved:	⌘ Specification doesn't reflect RAN3 decision and error will still be remained.

Clauses affected:	⌘ 5.1.2		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘ 	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> 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

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 [5].

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

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

[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.]