TSG RAN Meeting #22   **RP-030678**
Maui, USA, 9 - 12 December 2003

Title   CR (Rel-5 only) to TS 25.427 on Signalling support for soft handover indicator
Source   TSG RAN WG3
Agenda Item   7.4.3

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-031757	25.427	5.2.0	5.3.0	REL-5	090	1	F	Signalling support for soft handover indicator	TEI5

Note: This CR is addressing the RAN3 action item from RAN #21 on loss of sync in UL when in soft-HO. In addition, related to this CR a Samsung, Lucent company contribution RP-030661 for the RAN1 TS 25.214 v5.6.0 is provided to RAN #22.

CR-Form-v7

CHANGE REQUEST

⌘ **25.427** CR **090** ⌘**rev** **1** ⌘ Current version: **5.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network **X** Core Network ☐

Title: ⌘	Signalling support for soft handover indicator	
Source: ⌘	RAN3	
Work item code:⌘	TEI5	*Date:* ⌘ 17/11/2003
Category: ⌘ **F**		*Release:* ⌘ REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use one 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)*
Rel-6 *(Release 6)*

Reason for change: ⌘	In last RAN3 meeting, it was agreed to signal soft-handover status to Node B to avoid loss of RLs in case of loss of UL synchronization after initial UL synchronization. To support the new function in Node B, signalling support from RNC to Node B is needed.
Summary of change:⌘	Rev 1: SHO indicator is changed to Multiple RL Sets Indicator Rev 0: A new function is added into RADIO INTERFACE PARAMETER UPDATE control frame to inform soft handover indicator from RNC to Node B. ☐ Bit 5 is used to indicate whether SHO indicator is valid. ☐ A bit in spare field is used to signal soft handover indicator.
Consequences if not approved: ⌘	If this CR is not approved, the Node B can't know the UE's soft hanover status and act on correctly when the Node B loses radio link synchronization in uplink and the corresponding number RLS is higher than 1. As a consequence, the UE may lose all of its RLSes. Impact Analysis: Impact assessment towards the previous version of the specification (same release): This CR has [isolated impact] with the previous version of the specification (same release) because it affects implementations informing soft handover indicator. This CR has an impact under [protocol & functional] point of view.

		The impact [can] be considered isolated because the change affects [one] [system function] namely radio interface parameter update.

Clauses affected:	⌘	3.2, 5.8, 6.3.3.9, 6.3.3.9.8[new]		
		Y	**N**	
Other specs	⌘	X		Other core specifications
affected:			X	Test specifications
			X	O&M Specifications
Other comments:	⌘			

For "Other core specifications": ⌘ 25.214 REL-5 CR338 (RAN1 company contribution possible to RAN #22)

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.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://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 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   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the following terms and definitions apply:

Transport Bearer: service provided by the transport layer and used by frame protocol for the delivery of FP PDU

3.2   Abbreviations

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

BER	Bit Error Rate
CFN	Connection Frame Number
CRC	Cyclic Redundancy Checksum
CRCI	CRC Indicator
DCH	Dedicated Transport Channel
DL	Downlink
DPC	Downlink Power Control
DSCH	Downlink Shared Channel
DTX	Discontinuous Transmission
FP	Frame Protocol
FT	Frame Type
LTOA	Latest Time of Arrival
PC	Power Control
QE	Quality Estimate
RL	Radio Link
SIR	Signal-to-Interference Ratio
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
TFCI	Transport Format Combination Indicator
ToA	Time of Arrival
ToAWE	Time of Arrival Window Endpoint
ToAWS	Time of Arrival Window Startpoint
TPC	Transmit Power Control
TTI	Transmission Time Interval
UE	User Equipment
UL	Uplink

---partly ommited---

5.8   Radio Interface Parameter Update [FDD]

This procedure is used to update radio interface parameters which are applicable to all RL's for the concerning UE. Both synchronised and unsynchronised parameter updates are supported.

The procedure consists of a RADIO INTERFACE PARAMETER UPDATE control frame sent by the SRNC to the Node B.
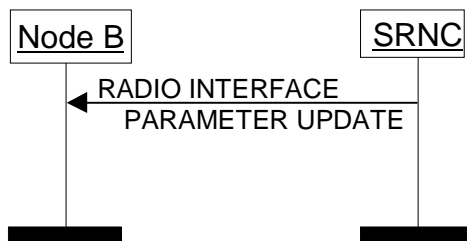
Figure 9: Radio Interface Parameter Update procedure

If the RADIO INTERFACE PARAMETER UPDATE control frame contains a valid TPC power offset value, the Node B shall apply the newly provided TPC PO in DL. If the frame contains a valid DPC mode value, the Node B shall apply the newly provided value in DL power control. If the frame contains valid TFCI PO_primary parameter and cell is decided to be primary, the Node B shall apply the newly provided value in DL TFCI power control. If the frame contains valid TFCI PO parameter, the Node B shall apply the newly provided value in DL TFCI power control. The new values shall be applied as soon as possible in case no valid CFN is included or from the indicated CFN. If the frame contains a valid Multiple RL Sets Indicator value, the Node B may use the newly provided value in Multiple RL Sets Indicator whenever the Node B loses UL synchronization on a RL Set after initial UL synchronization as described in [12].

--Partly omitted--

6.3.3.9 RADIO INTERFACE PARAMETER UPDATE [FDD]

6.3.3.9.1 Payload structure

The figure 22 shows the structure of the payload when the control frame is used for signalling radio interface parameter updates.
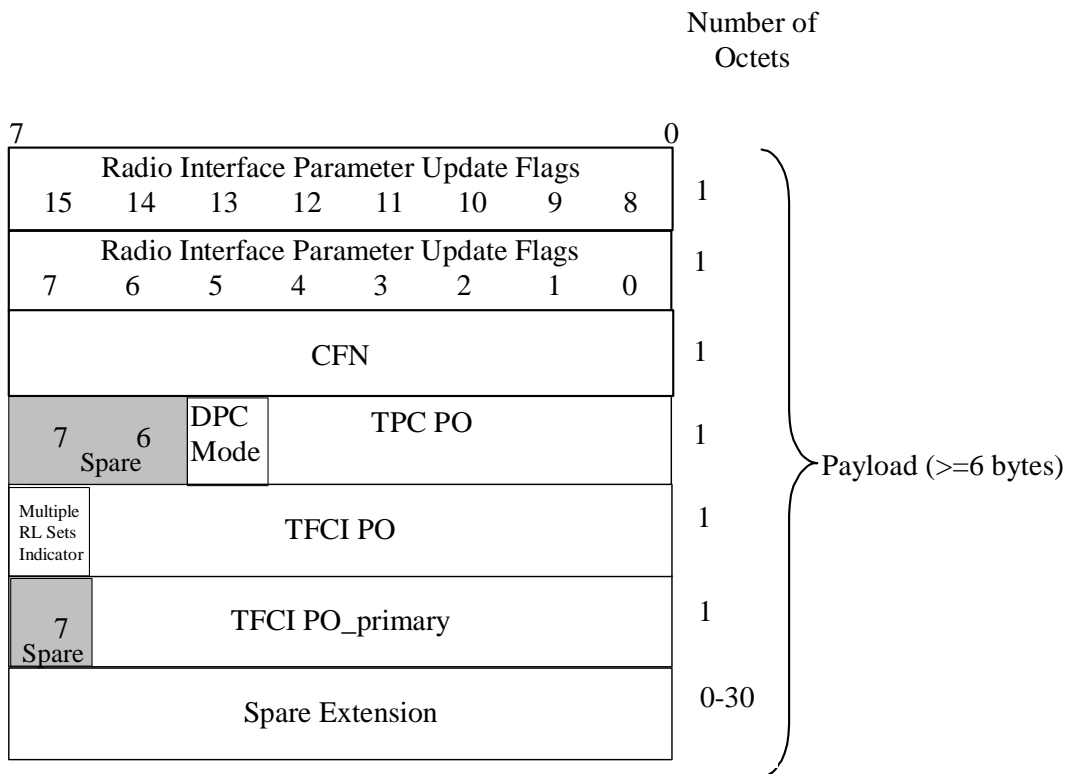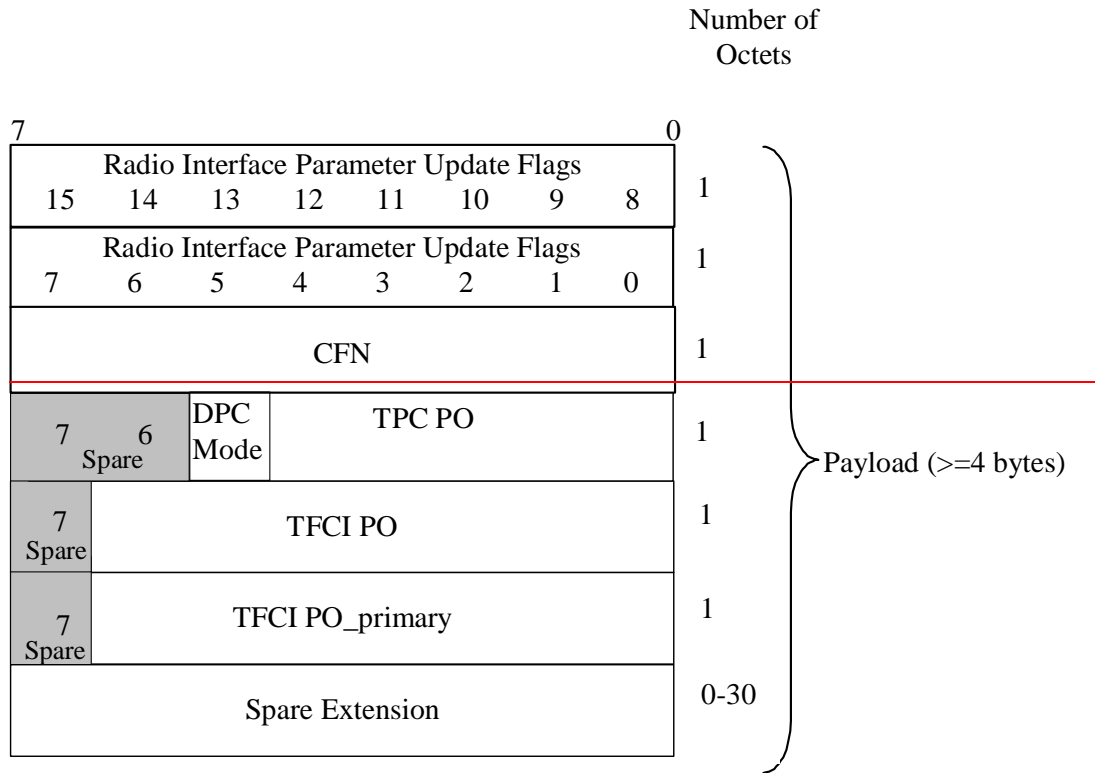
Number of
Octets

7   0

Radio Interface Parameter Update Flags								Octets
15	14	13	12	11	10	9	8	1
Radio Interface Parameter Update Flags								
7	6	5	4	3	2	1	0	1
CFN								1
7 6 Spare		DPC Mode	TPC PO					1
7 Spare	TFCI PO							1
7 Spare	TFCI PO_primary							1
Spare Extension								0-30

Payload (>=4 bytes)

Number of
Octets

7   0

Radio Interface Parameter Update Flags								
15	14	13	12	11	10	9	8	1
Radio Interface Parameter Update Flags								
7	6	5	4	3	2	1	0	1
CFN								1
7 6 Spare		DPC Mode	TPC PO					1
Multiple RL Sets Indicator	TFCI PO							1
7 Spare	TFCI PO_primary							1
Spare Extension								0-30

Payload (>=6 bytes)

Figure 22: Structure of the payload for the RADIO INTERFACE PARAMETER UPDATE control frame

6.3.3.9.2   Radio Interface Parameter Update flags

Description: Contains flags indicating which information is valid in this control frame.

Value range:

Bit 0: Indicates if the 3rd byte of the control frame payload contains a valid CFN (1) or not (0);

Bit 1: Indicates if the 4th byte (bits 0-4) of the control frame payload contains a valid TPC PO (1) or not (0);

Bit 2: Indicates if the 4th byte (bit 5) of the control frame payload contains a valid DPC mode (1) or not (0);

Bit 3: Indicates if the 5th byte (bit 0-~~7~~6) of the control frame payload contains a valid TFCI PO (1) or not (0);

Bit 4: Indicates if the 6th byte (bit 0-~~7~~6) of the control frame payload contains a valid TFCI PO_primary (1) or not (0);

Bit 5: Indicates if the 5th byte (bit 7) of the control frame payload contains a valid Multiple RL Sets Indicator (1) or not (0);

Bit ~~5~~6-15: Set to (0): reserved in this user plane revision. Any indicated flags shall be ignored by the receiver.

Field length: 16 bits.

6.3.3.9.3   TPC Power Offset (TPC PO)

Description: Power offset to be applied in the DL between the DPDCH information and the TPC bits on the DPCCH as specified in the clause 5.2 of [12].

Value range: {0-7.75 dB}.

Granularity: 0.25 dB.

Field length: 5 bits.

6.3.3.9.4   Spare Extension

The *Spare Extension* IE is described in subclause 6.3.3.1.4.

6.3.3.9.4A   CFN

Description: The CFN value indicates when the presented parameters shall be applied.

Value range: As defined in subclause 6.2.4.3.

Field length: 8 bits.

6.3.3.9.5   DPC Mode

Description: DPC mode to be applied in the UL.

Value range: {0,1}.

The DPC mode shall be applied as specified in [12].

Field length: 1 bit.

6.3.3.9.6   TFCI Power Offset (TFCI PO)

Description: Power offset to be applied in the DL between the DPDCH information and the TFCI bits on the DPCCH.

Value range: {0-31.75 dB}.

Granularity: 0.25 dB.

Field length: 7 bits.

6.3.3.9.7 TFCI Power Offset for primary cell (TFCI PO_primary)

Description: Power offset to be applied in the DL between the DPDCH information and the TFCI bits on the DPCCH when cell is decided to be primary. The primary status shall be determined as specified in [4].

Value range: {0-31.75 dB}.

Granularity: 0.25 dB.

Field length: 7 bits.

6.3.3.9.8 Multiple RL Sets Indicator

Description: Multiple RL Sets Indicator indicates whether the UE has several RL Sets or not.

Value range: {0=UE has only one RL Set, 1=UE has several RL Sets}.

Field length: 1 bit.