TSG RAN Meeting #21 **RP-030454**
Frankfurt, Germany, 16 - 19 September 2003

Title **CR (Rel-6 only) to TS 25.453 on Improvement of position calculation with pathloss**
Source **TSG RAN WG3**
Agenda Item **8.3.2**

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-031239	25.453	6.1.0	6.2.0	REL-6	060	-	C	Improvement of position calculation with pathloss	LCS-Rel4Pos

Note: CR is related to CR028 to 25.453 REL-6 in RP-030341 of RAN #20 and it is resubmitted to RAN #21 after discussions in RAN2 and RAN3.

3GPP TSG-RAN WG3 Meeting #37 **⌘R3-031239**
Budapest, Hungary, 25th – 29th August 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.453** **CR** **060** ⌘ **rev** **-** ⌘ Current version: **6.1.0** ⌘

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

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

Title:	⌘	Improvement of position calculation with pathloss
Source:	⌘	RAN3
Work item code:	⌘	LCS-Rel4Pos
Date:	⌘	25/08/03
Category:	⌘	**C**
Release:	⌘	Rel-6

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:	⌘	Improvement of position calculation in case of cell-id based methods by taking the downlink pathloss into accont if available
Summary of change:	⌘	Inclusion of downlink pathloss in Cell-ID Measured Results Info List IE
Consequences if not approved:	⌘	Less accurate position calculation

Clauses affected:	⌘	9.2.2.31, 9.3.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	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/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.

9.2.2.31 Cell-ID Measured Results Info List

This IE contains the Cell-ID measurements of signals associated with one or more cells.

Table 69

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell-ID Measured Results Info		*1..< maxNoOfMeasNCell >*		
>UC-ID	M		9.2.2.37	The identifier of the measured cell.
>UTRAN Access Point Position with Altitude	M		9.2.2.36	Exact geographical position of the base station antenna.
>Geographical Area	O		9.2.2.6	
>**Round Trip Time Info**		*0..1*		FDD only
>>UE Rx-Tx Time Difference Type 2	M		INTEGER (0..8191)	According to mapping in [13].
>>UE Positioning Measurement Quality	M		9.2.2.35	Quality of the UE Rx-Tx time difference measurement.
>>Round Trip Time	M		INTEGER (0..32767)	According to mapping in [13].
>Rx Timing Deviation Info		*0..1*		3.84Mcps TDD only
>>Rx Timing Deviation	M		INTEGER (0..8191)	According to mapping in [14].
>>Timing Advance	M		INTEGER (0..63)	According to [4].
>Rx Timing Deviation LCR Info		*0..1*		1.28Mcps TDD only
>>Rx Timing Deviation LCR	M		INTEGER (0..511)	According to mapping in [14].
>>Timing Advance LCR	M		INTEGER (0..2047)	According to mapping in [14].
>Pathloss	O		INTEGER (46..158)	Unit: dB downlink pathloss as defined in [4] subclause 10.3.7.3

/* partly omitted */

9.3.4 Information Element Definitions

/* partly omitted */

```
-- **************************************************************
--
-- Cell Id Measured Results Sets
--
-- **************************************************************

CellId-MeasuredResultsSets ::=          SEQUENCE (SIZE (1..maxNrOfSets)) OF
    CellId-MeasuredResultsInfoList

CellId-MeasuredResultsInfoList ::=      SEQUENCE (SIZE (1..maxNrOfMeasNCell)) OF
    CellId-MeasuredResultsInfo

CellId-MeasuredResultsInfo ::=          SEQUENCE {
    uC-ID                               UC-ID,
    uTRANAccessPointPositionAltitude    UTRANAccessPointPositionAltitude,
    ue-PositionEstimate                 UE-PositionEstimate         OPTIONAL,
    roundTripTimeInfo                   RoundTripTimeInfo           OPTIONAL, -- FDD only
    rxTimingDeviationInfo               RxTimingDeviationInfo       OPTIONAL, -- 3.84Mcps TDD only
    rxTimingDeviationLCRInfo            RxTimingDeviationLCRInfo    OPTIONAL, -- 1.28Mcps TDD only
    pathloss                            Pathloss                    OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { CellId-MeasuredResultsInfo-
ExtIEs } }      OPTIONAL,
    ...
}

CellId-MeasuredResultsInfo-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}

RoundTripTimeInfo ::=                   SEQUENCE {
    ue-RxTxTimeDifferenceType2          UE-RxTxTimeDifferenceType2,
    ue-PositioningMeasQuality           UE-PositioningMeasQuality,
    roundTripTime                       RoundTripTime,
    iE-Extensions                       ProtocolExtensionContainer { { RoundTripTimeInfo-ExtIEs } }
        OPTIONAL,
    ...
}

RoundTripTimeInfo-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}

UE-RxTxTimeDifferenceType2 ::=          INTEGER (0..8191)

UE-PositioningMeasQuality ::=           SEQUENCE {
    stdResolution                       BIT STRING (SIZE (2)),
    numberOfMeasurements                BIT STRING (SIZE (3)),
    stdOfMeasurements                   BIT STRING (SIZE (5)),
    iE-Extensions                       ProtocolExtensionContainer { { UE-PositioningMeasQuality-
ExtIEs } }      OPTIONAL,
    ...
}

UE-PositioningMeasQuality-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}

RoundTripTime ::=                       INTEGER (0..32767)
-- Actual value RoundTripTime = IE value * 0.0625 + 876

UTRANAccessPointPositionAltitude ::=    SEQUENCE {
    geographicalCoordinates             GeographicalCoordinates,
    ga-AltitudeAndDirection             GA-AltitudeAndDirection         OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { { UTRANAccessPointPositionAltitude-
ExtIEs } }      OPTIONAL,
    ...
}

UTRANAccessPointPositionAltitude-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
```

```
}

RxTimingDeviationInfo ::=               SEQUENCE {
    rxTimingDeviation                   RxTimingDeviation,
    timingAdvance                       TimingAdvance,
    iE-Extensions                       ProtocolExtensionContainer { { RxTimingDeviationInfo-ExtIEs
} }     OPTIONAL,
    ...
}

RxTimingDeviationInfo-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}

RxTimingDeviationLCRInfo ::=            SEQUENCE {
    rxTimingDeviationLCR                RxTimingDeviationLCR,
    timingAdvanceLCR                    TimingAdvanceLCR,
    iE-Extensions                       ProtocolExtensionContainer { { RxTimingDeviationLCRInfo-
ExtIEs } }      OPTIONAL,
    ...
}

RxTimingDeviationLCRInfo-ExtIEs PCAP-PROTOCOL-EXTENSION ::= {
    ...
}

RxTimingDeviation ::=                   INTEGER (0..8191)

RxTimingDeviationLCR ::=                INTEGER (0..511)

TimingAdvance ::=                       INTEGER (0..63)

TimingAdvanceLCR ::=                    INTEGER (0..2047)

Pathloss ::=                            INTEGER (46..158)
-- Unit: dB; as defined in [4] subclause 10.3.7.3
```

/* partly omitted */