

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

**RP-010099**

**Title:** CRs (Rel-4) for WI "Iub/Iur interfaces for UE positioning methods supported on the radio interface release 99"

**Source:** TSG-RAN WG4

**Agenda item:** 6.5.1

**WI Acronym:** LCS1-UEpos-Iublur

| <b>Doc-2nd-Level</b> | <b>Spec</b> | <b>CR</b> | <b>Subject</b>                             | <b>Cat</b> | <b>Version-</b> | <b>Version-</b> |
|----------------------|-------------|-----------|--|------------|-----------------|-----------------|
| R4-010446            | 25.123      | 45        | UE/UTRAN GPS Timing of Cell Frames for UP  | F          | 3.4.0           | 4.0.0           |
| R4-010322            | 25.133      | 88        | UE/UTRAN GPS Timing of Cell Frames for LCS | F          | 3.4.0           | 4.0.0           |

Vienna, Austria 19th - 23rd February 2001

CR-Form-v3

**CHANGE REQUEST**⌘ **25.123 CR 45** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘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 

|   |   |   |                     |
|---|---|---|---------------------|
| <b>Title:</b>   | ⌘ UE/UTRAN GPS Timing of Cell Frames for UP |   |                     |
| <b>Source:</b>  | ⌘ RAN WG4                                   |   |                     |
| <b>Work item code:</b>  | ⌘ LCS1-UEpos-lublur                         | <b>Date:</b>                              | ⌘ 22. February 2001 |
| <b>Category:</b>  | ⌘ <b>F</b>                                  | <b>Release:</b>                           | ⌘ REL-4             |
| Use <u>one</u> of the following categories:                                   |   | Use <u>one</u> of the following releases: |                     |
| <b>F</b> (essential correction)   |   | 2 (GSM Phase 2)                           |                     |
| <b>A</b> (corresponds to a correction in an earlier release)                  |   | R96 (Release 1996)                        |                     |
| <b>B</b> (Addition of feature),   |   | R97 (Release 1997)                        |                     |
| <b>C</b> (Functional modification of feature)                                 |   | R98 (Release 1998)                        |                     |
| <b>D</b> (Editorial modification)   |   | R99 (Release 1999)                        |                     |
| Detailed explanations of the above categories can be found in 3GPP TR 21.900. |   | REL-4 (Release 4)                         |                     |
|   |   | REL-5 (Release 5)                         |                     |

|                                      |   |
|--------------------------------------|---|
| <b>Reason for change:</b>            | ⌘ The range for the UE/UTRAN GPS Timing of Cell Frames for UP is incorrect. No measurement accuracy is currently defined for the UTRAN GPS Timing of Cell Frames for UP measurement in 25.123.  |
| <b>Summary of change:</b>            | ⌘ The range and accuracy for the UE/UTRAN GPS Timing of Cell Frames for UP were corrected as done by CR <i>Tdoc R4-010322</i> (Ericsson) for FDD mode.  |
| <b>Consequences if not approved:</b> | ⌘ The range for the UE/UTRAN GPS Timing of Cell Frames for UP will be incorrect and there will be no measurement accuracies defined for the UTRAN GPS Timing of Cell Frames for UP measurement. |

|                              |  |   |
|------------------------------|--|---|
| <b>Clauses affected:</b>     | ⌘ 9.1.1.10, 9.2.1.9                                  |   |
| <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>       | ⌘ Also refer to R4-01-0322 by Ericsson               |   |

**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

9.1.1.10 UE GPS Timing of Cell Frames for [LCSUP](#)

9.1.1.10.1 Accuracy requirement

The requirements in this section are valid for terminals supporting this capability

The measurement period for CELL\_DCH state can be found in section 8.

**Table 9.22**

| Parameter  | Unit | Accuracy [chip] | Conditions |
|--|------|-----------------|------------|
|  |      |                 |            |
| UE GPS Timing of Cell Frames for <a href="#">LCSUP</a> | chip | [ ]             |            |

9.1.1.10.2 UE GPS timing of Cell Frames for [LCSUP](#) measurement report mapping

The reporting range for *UE GPS timing of Cell Frames for [LCSUP](#)* is from 0 ... ~~2322432000000.2319360000000~~ chip.

In table 9.23 mapping of the measured quantity is defined.

**Table 9.23**

| Reported value   | Measured quantity value   | Unit |
|--|---|------|
| GPS_TIME_00000000000000  | UE GPS timing of Cell Frames for <a href="#">LCSUP</a> < 0,0625   | chip |
| GPS_TIME_00000000000001  | 0,0625 ≤ UE GPS timing of Cell Frames for <a href="#">LCSUP</a> < 0,1250  | chip |
| GPS_TIME_00000000000002  | 0,1250 ≤ UE GPS timing of Cell Frames for <a href="#">LCSUP</a> < 0,1875  | chip |
| ...  | ...   | ...  |
| GPS_TIME_ <del>371589119999973710975</del><br><del>9999997</del> | <del>2322431999999.8125</del> <del>231935999999.8125</del> ≤ UE GPS timing of Cell Frames for <a href="#">LCSUP</a> < <del>2322431999999.8750</del> <del>231935999999.8750</del>  | chip |
| GPS_TIME_ <del>371589119999983710975</del><br><del>9999998</del> | <del>2322431999999.8750</del> <del>231935999999.8750</del> ≤ UE GPS timing of Cell Frames for <a href="#">LCSUP</a> < <del>2322431999999.9375</del> <del>231935999999.9375</del>  | chip |
| GPS_TIME_ <del>371589119999993710975</del><br><del>9999999</del> | <del>2322431999999.9375</del> <del>231935999999.9375</del> ≤ UE GPS timing of Cell Frames for <a href="#">LCSUP</a> < <del>2322432000000.0000</del> <del>2319360000000.0000</del> | chip |

### 9.2.1.9 UTRAN GPS Timing of Cell Frames for LCSUP

Note: This measurement is used for UP purposes.

The measurement period shall be [1] second.

#### 9.2.1.9.1 Accuracy requirement

Three accuracy classes are defined for the UTRAN GPS Timing of Cell Frames for UP measurement, i.e. accuracy class A, B and C. The implemented accuracy class depends on the UP methods that are supported.

Only necessary for UEs supporting LCS.

**Table 9.43**

| Parameter   | Unit | Accuracy [chip]  | Conditions                 |
|---|------|--|----------------------------|
| <i>UTRAN GPS timing of Cell Frames for <u>LCSUP</u></i> | Chip | <u>Accuracy Class A: +/- [20000] chip</u><br><u>Accuracy Class B: +/- [20] chip</u><br><u>Accuracy Class C: +/- [X] chip</u><br><u>[1]</u> | <u>Over the full range</u> |

#### 9.2.1.9.2 Range/mapping

The reporting range for *UTRAN GPS timing of Cell Frames for LCSUP* is from 0 ... ~~231936000000~~ 232243200000 chip.

In table 9.44 the mapping of measured quantity is defined.

**Table 9.44**

| Reported value          | Measured quantity value  | Unit |
|-------------------------|--|------|
| GPS_TIME_00000000000000 | UTRAN GPS timing of Cell Frames for <u>LCSUP</u> < 0,0625  | chip |
| GPS_TIME_00000000000001 | 0,0625 ≤ UTRAN GPS timing of Cell Frames for <u>LCSUP</u> < 0,1250   | chip |
| GPS_TIME_00000000000002 | 0,1250 ≤ UTRAN GPS timing of Cell Frames for <u>LCSUP</u> < 0,1875   | chip |
| ...                     | ...  | ...  |
| GPS_TIME_37109759999997 | <del>231935999999</del> <u>232243199999</u> ,8125 ≤ UTRAN GPS timing of Cell Frames for <u>LCSUP</u> < <del>231935999999</del> <u>232243199999</u> ,8750 | chip |
| GPS_TIME_37109759999998 | <u>232243149359</u> 999999,8750 ≤ UTRAN GPS timing of Cell Frames for <u>LCSUP</u> < <del>232243149359</del> <u>232243149359</u> 999999,9375             | chip |
| GPS_TIME_37109759999999 | <u>232243149359</u> 999999,9375 ≤ UTRAN GPS timing of Cell Frames for <u>LCSUP</u> < <del>231936000000</del> <u>232243200000</u> ,0000                   | chip |

Vienna, Austria 19th - 23rd February 2001

CR-Form-v3

**CHANGE REQUEST**

⌘ **25.133 CR 88** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

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

|                        |  |                 |  |
|------------------------|--|-----------------|--|
| <b>Title:</b>          | ⌘ UE/UTRAN GPS Timing of Cell Frames for LCS   |                 |  |
| <b>Source:</b>         | ⌘ RAN WG4  |                 |  |
| <b>Work item code:</b> | ⌘ LCS1-UEpos-lublur  | <b>Date:</b>    | ⌘ 2001-02-15   |
| <b>Category:</b>       | ⌘ <b>F</b>   | <b>Release:</b> | ⌘ REL-4  |
|                        | Use <u>one</u> of the following categories:<br><b>F</b> (essential correction)<br><b>A</b> (corresponds to a correction in an earlier release)<br><b>B</b> (Addition of feature),<br><b>C</b> (Functional modification of feature)<br><b>D</b> (Editorial modification)<br>Detailed explanations of the above categories can be found in 3GPP TR 21.900. |                 | Use <u>one</u> of the following releases:<br>2 (GSM Phase 2)<br>R96 (Release 1996)<br>R97 (Release 1997)<br>R98 (Release 1998)<br>R99 (Release 1999)<br>REL-4 (Release 4)<br>REL-5 (Release 5) |

|                                      |   |
|--------------------------------------|---|
| <b>Reason for change:</b>            | ⌘ The range for the UE/UTRAN GPS Timing of Cell Frames for LCS are incorrect. No measurement accuracy is currently defined for the UTRAN GPS Timing of Cell Frames for LCS measurement in 25.133. |
| <b>Summary of change:</b>            | ⌘ Corrects the range for the UE/UTRAN GPS Timing of Cell Frames for LCS measurements and introduces accuracy requirements for the UTRAN GPS Timing of Cell Frames for LCS measurement.            |
| <b>Consequences if not approved:</b> | ⌘ The range for the UE/UTRAN GPS Timing of Cell Frames for LCS will be incorrect and there will be no measurement accuracies defined for the UTRAN GPS Timing of Cell Frames for LCS measurement. |

|                              |   |   |  |
|------------------------------|---|---|--|
| <b>Clauses affected:</b>     | ⌘ 9.1.12, 9.2.10  |   |  |
| <b>Other specs affected:</b> | <input type="checkbox"/> Other core specifications<br><input type="checkbox"/> Test specifications<br><input type="checkbox"/> O&M Specifications | ⌘ |  |
| <b>Other comments:</b>       | ⌘   |   |  |

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## 9.1.12 UE GPS Timing of Cell Frames for LCS

The requirements in this section are valid for terminals supporting this capability:

**Table 9-30**

| Parameter                            | Unit | Accuracy [chip] | Conditions |
|--------------------------------------|------|-----------------|------------|
|                                      |      |                 |            |
| UE GPS Timing of Cell Frames for LCS | chip | [ ]             |            |

### 9.1.12.1 UE GPS timing of Cell Frames for LCS measurement report mapping

The reporting range is for UE GPS timing of Cell Frames for LCS is from 0 ... 23~~2243219360~~0000000 chip.

In table 9-31 the mapping of measured quantity is defined.

**Table 9-31**

| Reported value                            | Measured quantity value  | Unit |
|---|--|------|
| GPS_TIME_00000000000000                   | UE GPS timing of Cell Frames for LCS < 0.0625  | chip |
| GPS_TIME_00000000000001                   | 0.0625 ≤ UE GPS timing of Cell Frames for LCS < 0.1250   | chip |
| GPS_TIME_00000000000002                   | 0.1250 ≤ UE GPS timing of Cell Frames for LCS < 0.1875   | chip |
| ...                                       | ...  | ...  |
| GPS_TIME_371 <del>5891109759</del> 999997 | 23 <del>2243149359</del> 999999.8125 ≤ UE GPS timing of Cell Frames for LCS < 23 <del>2243149359</del> 999999.8750 | chip |
| GPS_TIME_371 <del>5891109759</del> 999998 | 23 <del>2243149359</del> 999999.8750 ≤ UE GPS timing of Cell Frames for LCS < 23 <del>2243149359</del> 999999.9375 | chip |
| GPS_TIME_371 <del>5891109759</del> 999999 | 23 <del>2243149359</del> 999999.9375 ≤ UE GPS timing of Cell Frames for LCS < 23 <del>2243219360</del> 000000.0000 | chip |



## 9.2.10 UTRAN GPS Timing of Cell Frames for LCS

Note: This measurement is used for LCS purposes.

The measurement period shall be [1] second.

### 9.2.10.1 Accuracy requirement

Three accuracy classes are defined for the UTRAN GPS Timing of Cell Frames for LCS measurement, i.e. accuracy class A, B and C. The implemented accuracy class depends on the LCS methods that are supported.

**Table 9-52**

| Parameter                               | Unit | Accuracy [chip]  | Conditions          |
|---|------|--|---------------------|
|   |      |  |                     |
| UTRAN GPS Timing of Cell Frames for LCS | chip | Accuracy Class A: +/- [20000] chip<br>Accuracy Class B: +/- [20] chip<br>Accuracy Class C: +/- [X] chip[-] | Over the full range |

### 9.2.10.24 UTRAN GPS timing of Cell Frames for LCS measurement report mapping

The reporting range is for UTRAN GPS timing of Cell Frames for LCS is from 0 ... ~~232243219360~~000000 chip.

In table 9-53 the mapping of measured quantity is defined.

**Table 9-53**

| Reported value                             | Measured quantity value   | Unit |
|--|---|------|
| GPS_TIME_0000000000000000                  | UTRAN GPS timing of Cell Frames for LCS < 0.0625  | chip |
| GPS_TIME_0000000000000001                  | 0.0625 ≤ UTRAN GPS timing of Cell Frames for LCS < 0.1250   | chip |
| GPS_TIME_0000000000000002                  | 0.1250 ≤ UTRAN GPS timing of Cell Frames for LCS < 0.1875   | chip |
| ...  | ...   | ...  |
| GPS_TIME_371 <del>5891109759</del> 9999997 | 23 <del>2243149359</del> 999999.8125 ≤ UTRAN GPS timing of Cell Frames for LCS < 23 <del>2243149359</del> 999999.8750 | chip |
| GPS_TIME_371 <del>5891109759</del> 9999998 | 23 <del>2243149359</del> 999999.8750 ≤ UTRAN GPS timing of Cell Frames for LCS < 23 <del>2243149359</del> 999999.9375 | chip |
| GPS_TIME_371 <del>5891109759</del> 9999999 | 23 <del>2243149359</del> 999999.9375 ≤ UTRAN GPS timing of Cell Frames for LCS < 23 <del>2243219360</del> 000000.0000 | chip |