TSG-RAN Meeting #12 *RP-010363*
Stockholm, Sweden, 12 - 15 June 2001

Title: **Agreed CRs (Release 4) to TS 25.123**

Source: **TSG-RAN WG4**

Agenda item: **8.4.4**

WG4 doc	Status WG4	Spec	CR	Phase	Title	Cat	V old	V new
R4-010477	agreed	25.123	74	Rel-4	UTRAN SFN-SFN observed time difference	F	4.0.0	4.1.0
R4-010489	agreed	25.123	75	Rel-4	UE SFN-SFN mapping	F	4.0.0	4.1.0
R4-010540	agreed	25.123	76	Rel-4	Clarification of NodeBsynch	F	4.0.0	4.1.0
R4-010479	agreed	25.123	77	Rel-4	UTRAN GPS timing of cell frames for UP mapping	F	4.0.0	4.1.0
R4-010478	agreed	25.123	78	Rel-4	LCR UE/UTRAN GPS timing of cell frames for UP	F	4.0.0	4.1.0
R4-010807	agreed	25.123	85	Rel-4	General section 5 corrections for 1.28 Mcps TDD	F	4.0.0	4.1.0
R4-010805	agreed	25.123	86	Rel-4	Correction of re-selection requirements in cell_FACH state for 1.28 Mcps	F	4.0.0	4.1.0
R4-010797	agreed	25.123	87	Rel-4	1.28 TDD test cases for TDD and FDD measurements	F	4.0.0	4.1.0

3GPP TSG RAN WG4 Meeting #17 **R4-010477**

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v

CHANGE REQUEST

⌘ **25.123** **CR** **74** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	UTRAN SFN-SFN observed time difference
Source:	⌘	RAN WG4
Work item code:	⌘	LCS1-UEpos
Date:	⌘	21. May 2001
Category:	⌘	**F**
Release:	⌘	REL-4

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)*

Reason for change:	⌘	Adding of requirements for UTRAN measurement SFN-SFN observed time difference.
Summary of change:	⌘	Accuracy requirements and mapping are introduced both for 3.84 Mcps and 1.28 Mcps TDD Option.
Consequences if not approved:	⌘	Inconsistency to other TS, essential requirement would be missing

Clauses affected:	⌘	9.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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. 2001-03 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

9.2.1.12 SFN-SFN observed time difference

The measurement period for CELL_DCH state can be found in section 8.

9.2.1.12.1 Accuracy requirements

9.2.1.12.1.1 3.84 Mcps TDD option

Table 9.xa SFN-SFN observed time difference accuracy

Parameter	Unit	Accuracy [chip]	Conditions
			Io [dBm]
SFN-SFN observed time difference	chip	+/-0,5	-94...-50

9.2.1.12.1.2 1.28 Mcps TDD option

Table 9.xb: SFN-SFN observed time difference accuracy

Parameter	Unit	Accuracy	Conditions
			Io [dBm]
SFN-SFN observed time difference	Chip	+/- 0.125	-94...-50

9.2.1.12.2 Range/mapping

9.2.1.12.2.1 3.84 Mcps TDD option

The reporting range for *SFN-SFN observed time difference* is from –1280 ... +1280 chip.

In table 9.yd mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.yd

Reported value	Measured quantity value	Unit
SFN-SFN_TIME_00000	SFN-SFN observed time difference < -1280,0000	chip
SFN-SFN_TIME_00001	-1280,0000 ≤ SFN-SFN observed time difference < -1279,9375	chip
SFN-SFN_TIME_00002	-1279,9375 ≤ SFN-SFN observed time difference < -1279,8750	chip
...	...	...
SFN-SFN_TIME_40959	1279,8750 ≤ SFN-SFN observed time difference < 1279,9375	chip
SFN-SFN_TIME_40960	1279,9375 ≤ SFN-SFN observed time difference < 1280,0000	chip
SFN-SFN_TIME_40961	1280,0000 ≤ SFN-SFN observed time difference	chip

9.2.1.12.2.2 1.28 Mcps TDD option

The reporting range for *SFN-SFN observed time difference* is from –6400 ... +6400 chip.

In table 9.yf mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.yf

Reported value	Measured quantity value	Unit
SFN-SFN_TIME_00000	SFN-SFN observed time difference < -6400,00	chip
SFN-SFN_TIME_00001	-6400,00 ≤ SFN-SFN observed time difference < -6399,75	chip
SFN-SFN_TIME_00002	-6399,75 ≤ SFN-SFN observed time difference < -6399,50	chip
…	…	…
SFN-SFN_TIME_51199	6399,50 ≤ SFN-SFN observed time difference < 6399,75	chip
SFN-SFN_TIME_51200	6399,75 ≤ SFN-SFN observed time difference ≤ 6400,00	chip
SFN-SFN_TIME_51201	6400,00 ≤ SFN-SFN observed time difference	chip

3GPP TSG RAN WG4 Meeting #17 **R4-010489**

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v

CHANGE REQUEST

⌘ **25.123 CR 75** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	UE SFN-SFN mapping
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21. May 2001
Category:	⌘	**F**
Release:	⌘	REL-4

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)*

Reason for change:	⌘	Correction of mapping requirements for UE measurements
Summary of change:	⌘	Mapping function of SFN-SFN observed time difference measurement for 1.28 TDD Option corrected.
Consequences if not approved:	⌘	Inconsistency to other TS, definition of unwanted requirements

Clauses affected:	⌘	9.1.1.8.2.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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. 2001-03 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

9.1.1.7 Transport channel BLER

9.1.1.7.1 BLER measurement requirement

The Transport Channel BLER value shall be calculated from a window with the size equal to the reporting interval (see clause on periodical reporting criteria in TS 25.331).

9.1.1.7.2 Range/mapping

The *Transport channel BLER* reporting range is from 0 to 1.

In table 9.16 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.16

Reported value	Measured quantity value	Unit
BLER_LOG _00	Transport channel BLER = 0	-
BLER_LOG _01	-∞ < Log10(Transport channel BLER) < –4,03	-
BLER_LOG _02	-4,03 ≤ Log10(Transport channel BLER) < –3,965	-
BLER_LOG _03	-3,965 ≤ Log10(Transport channel BLER) < –3,9	-
…	…	…
BLER_LOG _61	-0,195 ≤ Log10(Transport channel BLER) < -0,13	-
BLER_LOG _62	-0,13 ≤ Log10(Transport channel BLER) < -0,065	-
BLER_LOG _63	-0,065 ≤ Log10(Transport channel BLER) ≤ 0	-

9.1.1.8 SFN-SFN observed time difference

The measurement period for CELL_DCH state can be found in section 8.

9.1.1.8.1 Accuracy requirements

9.1.1.8.1.1 3.84 Mcps TDD option

The accuracy requirement in table 9.17 is valid under the following conditions:

- P-CCPCH_RSCP1,2 ≥ -102 dBm..
- $\left|\text{P - CCPCH RSCP1}\right|_{in\ dB} - \text{P - CCPCH RSCP2}\left|_{in\ dB}\right| \leq 20dB$
- The received signal levels on SCH and P-CCPCH are according the requirements in paragraph 8.1.2.6.

Table 9.17 SFN-SFN observed time difference accuracy

Parameter	Unit	Accuracy [chip]	Conditions
			Io [dBm]
SFN-SFN observed time difference	chip	+/-0,5 for both type 1 and 2	-94...-50

9.1.1.8.1.2 1.28 Mcps TDD option

Table 9.17A: SFN-SFN observed time difference accuracy

Parameter	Unit	Accuracy	Conditions
			Io [dBm]
SFN-SFN observed time difference	Chip	+/-0,5 for type 1 but +/- 0.125 for type 2	-94...-50

9.1.1.8.2 Range/mapping

9.1.1.8.2.1 3.84 Mcps TDD option

The reporting range for *SFN-SFN observed time difference type 1* is from 0 ... 9830400 chip.

In table 9.18 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.18

Reported value	Measured quantity value	Unit
T1_SFN-SFN_TIME _0000000	0 ≤ SFN-SFN observed time difference type 1 < 1	chip
T1_SFN-SFN_TIME _0000001	1 ≤ SFN-SFN observed time difference type 1 < 2	chip
T1_SFN-SFN_TIME _0000002	2 ≤ SFN-SFN observed time difference type 1 < 3	chip
…	…	…
T1_SFN-SFN_TIME _9830397	9830397 ≤ SFN-SFN observed time difference type 1 < 9830398	chip
T1_SFN-SFN_TIME _9830398	9830398 ≤ SFN-SFN observed time difference type 1 < 980399	chip
T1_SFN-SFN_TIME _9830399	9830399 ≤ SFN-SFN observed time difference type 1 < 9830400	chip

The reporting range for *SFN-SFN observed time difference type 2* is from –1280 ... +1280 chip.

In table 9.19 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.19

Reported value	Measured quantity value	Unit
T2_SFN-SFN_TIME _00000	SFN-SFN observed time difference type 2 < -1280,0000	chip
T2_SFN-SFN_TIME _00001	-1280,0000 ≤ SFN-SFN observed time difference type 2 < -1279,9375	chip
T2_SFN-SFN_TIME _00002	-1279,9375 ≤ SFN-SFN observed time difference type 2 < -1279,8750	chip
…	…	…
T2_SFN-SFN_TIME _40959	1279,8750 ≤ SFN-SFN observed time difference type 2 < 1279,9375	chip
T2_SFN-SFN_TIME _40960	1279,9375 ≤ SFN-SFN observed time difference type 2 < 1280,0000	chip
T2_SFN-SFN_TIME _40961	1280,0000 ≤ SFN-SFN observed time difference type 2	chip

9.1.1.8.2.2 1.28 Mcps TDD option

The reporting range for *SFN-SFN observed time difference type 1* is from 0 ... 3276800 chip.

In table 9.18A mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.18A

Reported value	Measured quantity value	Unit
T1_SFN-SFN_TIME _0000000	0 ≤ SFN-SFN observed time difference type 1 < 1	chip
T1_SFN-SFN_TIME _0000001	1 ≤ SFN-SFN observed time difference type 1 < 2	chip
T1_SFN-SFN_TIME _0000002	2 ≤ SFN-SFN observed time difference type 1 < 3	chip
…	…	…
T1_SFN-SFN_TIME _3276797	3276797 ≤ SFN-SFN observed time difference type 1 < 3276798	chip
T1_SFN-SFN_TIME _3276798	3276798 ≤ SFN-SFN observed time difference type 1 < 3276799	chip
T1_SFN-SFN_TIME _3276799	3276799 ≤ SFN-SFN observed time difference type 1 < 3276800	chip

The reporting range for *SFN-SFN observed time difference type 2* is from –6400 ... +6400 chip.

In table 9.19A mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.19A

Reported value	Measured quantity value	Unit
T2_SFN-SFN_TIME _00000	SFN-SFN observed time difference type 2 < -~~6390~~6400,00	chip
T2_SFN-SFN_TIME _00001	-~~6390~~6400,00 ≤ SFN-SFN observed time difference type 2 < -6399,75	chip
T2_SFN-SFN_TIME _00002	-6399,75 ≤ SFN-SFN observed time difference type 2	chip

	< -6399,50	
…	…	…
T2_SFN-SFN_TIME _51199	6399,50 ≤ SFN-SFN observed time difference type 2 < 6399,75	chip
T2_SFN-SFN_TIME _51200	6399,75 ≤ SFN-SFN observed time difference type 2 < 6400,00	chip
T2_SFN-SFN_TIME _51201	6400,00 ≤ SFN-SFN observed time difference type 2	chip

There are 3 kind of special time slot (DwPTS, UpPTS and GP) in 1.28 Mcps TDD frame structure. When calculation the SFN-SFN observed time difference in type 2, it needs to consider the position and affection of these 3 special time slots.

Let us suppose:

T_{RxTSi} : time of start of timeslot#0 received of the serving TDD cell i.

T_{RxTSk} : time of start of timeslot#0 received from the target UTRA cell k that is closest in time to the start of the timeslot of the serving TDD cell i.

SFN-SFN observed time difference = T_{RxTSk} - T_{RxTSi}, in chips, which means to calculate the the time difference of the start position of the current frame in cell i to the closest starting position of one frame in cell k.

Editor Note: Here in type 2 we only consider to measure the difference of two cells of 1.28 Mcps TDD. The measurement method is like that in TS25.215. In type 2 measurement of TS25.215, it measures the time difference of the start position of the P-CPICH of two cells. That is just something like in 1.28 Mcps TDD.

9.1.1.9 Observed time difference to GSM cell

Note: This measurement is used to determine the system time difference between UTRAN and GSM cells.

The requirements in this section are valid for terminals supporting UTRA TDD and GSM.

The measurement period for CELL_DCH state is [10 s].

9.1.1.9.1 Accuracy requirements

Table 9.20 Observed time difference to GSM cell accuracy

Parameter	Unit	Accuracy [chip]	Conditions
Observed time difference to GSM cell	chip	± 20	

9.1.1.9.2 Range/mapping

The reporting range for *Observed time difference to GSM cell* is from 0 ... 3060/13 ms.

In table 9.21 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

3GPP TSG RAN WG4 Meeting #17 **R4-010540**

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.123 CR 76** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

*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:	⌘	Clarification of NodeB synchronisation
Source:	⌘	RAN WG4
Work item code:	⌘	RANimp-NBsync
Date:	⌘	2001-05-21
Category:	⌘	**F**
Release:	⌘	REL-4

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)*

Reason for change:	⌘	Current ranges and mappings only apply for 3.84Mcps TDD, which is currently not visible. In addition an error in the mapping range is corrected. Change of the used terminology to be consistent within the specifications.
Summary of change:	⌘	
Consequences if not approved:	⌘	Misinterpretation of requirement.

Clauses affected:	⌘	9.2.1.11
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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://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.

9.2.1.11 Node B Synchronisation for 3.84Mcps TDD

Cell synchronisation burst timing is the time of start (defined by the first detected path in time) of the cell sync burst of a neighbouring cell. Type 1 is used for the initial phase of Node B synchronization. Type 2 is used for the steady-state phase of Node B synchronization. Both have different range.

The reference point for the cell sync burst timing measurement shall be the Rx antenna connector.

9.2.1.11.1 Cell Synchronisation burst timing Type1 and Type 2

Table 9.44C

Parameter	Unit	Accuracy [chip]	Conditions
Cell Synchronisation burst timing	chip	[+/-0,5 for both type 1 and type 2]	

9.2.1.11.2 Range/mapping Type 1

The reporting range for Cell Synchronisation burst timing type 1 is from -131072 to +131072 chips with 1/4 chip resolution.
In table 9.44D the mapping of measured quantity is defined for burst type 1.

Table 9.44D

Reported value	Measured quantity value	Unit
Burst_TIME__TYPE1_0000000	-131072 ≤ burst timing Type 2< -131071.75	chip
Burst_TIME__TYPE1_0000001	-131071.75 ≤ burst timing Type 2< -131071.5	chip
Burst_TIME__TYPE1_0000002	-131071.5 ≤ burst timing Type 2< -131071.25	chip
…	…	…
Burst_TIME__TYPE1_1048473	-131071.25 ≤ burst timing Type 2< 131071.5	chip
Burst_TIME__TYPE1_1048574	-131071.5 ≤ burst timing Type 2< 131071.75	chip
Burst_TIME__TYPE1_1048575	-131071.75 ≤ burst timing Type 2< 131072	chip

9.2.1.11.3 Range/mapping Type 2

The reporting range for Cell Synchronisation burst timing type 2 is from –16 to +16 chips with 1/8 chip resolution. In table 9.44E the mapping of measured quantity is defined for burst type 2.

Table 9.44E

Reported value	Measured quantity value	Unit
Burst_TIME__TYPE2_0000	-16 ≤ burst timing Type 2< -15.875	chip
Burst_TIME__TYPE2_0001	-15.875 ≤ burst timing Type 2< -15.750	chip
Burst_TIME__TYPE2_0002	-15.750 ≤ burst timing Type 2< -15.625	chip
…	…	…
Burst_TIME__TYPE2_0253	15.625 ≤ burst timing Type 2< 15.750	chip
Burst_TIME__TYPE2_0254	15.750 ≤ burst timing Type 2< 15.875	chip
Burst_TIME__TYPE2_0255	15.875 ≤ burst timing Type 2< 16	chip

9.2.1.11.4 Cell Synchronisation burst SIR Type1 and Type2

Signal to Interference Ratio for the cell sync burst, defined according to TS25.225.
The reference point for the cell synchronisation burst SIR shall be the Rx antenna connector.

Table 9.44F

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	
Cell Synchronisation burst SIR	dB	±3 dB for both type 1 and 2	[ ]	

9.2.1.11.5 Range/Mapping for Type1 and Type 2

The reporting range for *SIR* is from 0 ... 60 dB with a resolution of 2dB.
In table 9.44G mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

Table 9.44H

Reported value	Measured quantity value	Unit
Cell_Synch_Burst~~UE~~_SIR_00	SIR< 0	dB
Cell_Synch_Burst~~UE~~_SIR_01	0 ≤ SIR< 2	dB
Cell_Synch_Burst~~UE~~_SIR_02	2 ≤ SIR< 4	dB
…	…	…
Cell_Synch_Burst~~UE~~_SIR_29	56≤ SIR< 58	dB
Cell_Synch_Burst~~UE~~_SIR_30	58 ≤ SIR< 60	dB
Cell_Synch_Burst~~UE~~_SIR_31	60 ≤ SIR	dB

3GPP TSG RAN WG4 Meeting #17 **R4-010479**

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v

CHANGE REQUEST

⌘ **25.123** **CR** **77** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

*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:	⌘	UTRAN GPS timing of cell frames for UP mapping
Source:	⌘	RAN WG4
Work item code:	⌘	LCS1-UEpos
Date:	⌘	21. May 2001
Category:	⌘	**F**
Release:	⌘	REL-4

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)*

Reason for change:	⌘	Correction to the number of reported values at the mapping definition for UTRAN GPS measurement as the given reported values are incorrect according to the range times the granularity.
Summary of change:	⌘	Correction of reported values in table 9.44
Consequences if not approved:	⌘	Inconsistency to other TS.

Clauses affected:	⌘	9.2.1.9.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ 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. 2001-03 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

9.2.1.9 UTRAN GPS Timing of Cell Frames for UP

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.

Table 9.43

Parameter	Unit	Accuracy [chip]	Conditions
UTRAN GPS timing of Cell Frames for UP	chip	Accuracy Class A: +/- [20000] chip Accuracy Class B: +/- [20] chip Accuracy Class C: +/- [X] chip	Over the full range

9.2.1.9.2 Range/mapping

The reporting range for *UTRAN GPS timing of Cell Frames for UP* is from 0 ... 2322432000000 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 UP < 0,0625	chip
GPS_TIME_00000000000001	0,0625 ≤ UTRAN GPS timing of Cell Frames for UP < 0,1250	chip
GPS_TIME_00000000000002	0,1250 ≤ UTRAN GPS timing of Cell Frames for UP < 0,1875	chip
…	…	…
GPS_TIME_3715891199999737109759999997	2322431999999,8125 ≤ UTRAN GPS timing of Cell Frames for UP < 2322431999999,8750	chip
GPS_TIME_3715891199999837109759999998	2322431999999,8750 ≤ UTRAN GPS timing of Cell Frames for UP < 2322431999999,9375	chip
GPS_TIME_3715891199999937109759999999	2322431999999,9375 ≤ UTRAN GPS timing of Cell Frames for UP < 2322432000000,0000	chip

3GPP TSG RAN WG4 Meeting #17 **R4-010478**

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v

CHANGE REQUEST

⌘ **25.123** **CR** **78** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	LCR UE/UTRAN GPS timing of cell frames for UP
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21. May 2001
Category:	⌘	**F**
Release:	⌘	REL-4

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)*

Reason for change:	⌘	Adding of missing requirements for UE and UTRAN measurements procedures for 1.28 Mpcs TDD Option.
Summary of change:	⌘	Inclusion of accuracy requirements and mapping for 1.28 Mcps TDD option for UE and UTRAN measurements GPS Timing of Cell Frames for UP.
Consequences if not approved:	⌘	Inconsistency to other TS, definition of unwanted requirements

Clauses affected:	⌘	9.1.1.10, 9.2.1.9
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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. 2001-03 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 UP

9.1.1.10.1 Accuracy requirement

9.1.1.10.1.1 3.84 Mcps TDD Option

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 LCS	chip	[ ]	

9.1.1.10.1.2 1.28 Mcps TDD Option

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 9.22A

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

9.1.1.10.2 UE GPS timing of Cell Frames for UP measurement report mapping

9.1.1.10.2.1 3.84 Mcps TDD Option

The reporting range for *UE GPS timing of Cell Frames for UP* is from 0 ... 2322432000000 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 UP < 0,0625	chip
GPS_TIME_00000000000001	0,0625 ≤ UE GPS timing of Cell Frames for UP < 0,1250	chip
GPS_TIME_00000000000002	0,1250 ≤ UE GPS timing of Cell Frames for UP < 0,1875	chip
...	...	...
GPS_TIME_37158911999997	2322431999999,8125 ≤ UE GPS timing of Cell Frames for UP < 2322431999999,8750	chip
GPS_TIME_37158911999998	2322431999999,8750 ≤ UE GPS timing of Cell Frames for UP < 2322431999999,9375	chip
GPS_TIME_37158911999999	2322431999999,9375 ≤ UE GPS timing of Cell Frames for UP < 2322432000000,0000	chip

9.1.1.10.2.2 1.28 Mcps TDD Option

The reporting range for *UE GPS timing of Cell Frames for UP* is from 0 ... 774144000000 chip.

In table 9.23A mapping of the measured quantity is defined.

Table 9.23A

Reported value	Measured quantity value	Unit
GPS_TIME_0000000000000	UE GPS timing of Cell Frames for UP< 0,25	chip
GPS_TIME_0000000000001	0,25 ≤ UE GPS timing of Cell Frames for UP< 0,50	chip
GPS_TIME_0000000000002	0,50 ≤ UE GPS timing of Cell Frames for UP < 0,75	chip
...	...	...
GPS_TIME_3096575999997	774143999999,25 ≤ UE GPS timing of Cell Frames for UP < 774143999999,50	chip
GPS_TIME_3096575999998	774143999999,50 ≤ UE GPS timing of Cell Frames for UP < 774143999999,75	chip
GPS_TIME_3096575999999	774143999999,75 ≤ UE GPS timing of Cell Frames for UP < 774144000000,00	chip

NEXT CHANGED SECTIONS

9.2.1.9 UTRAN GPS Timing of Cell Frames for UP

NOTE: This measurement is used for UP purposes.

The measurement period shall be [1] second.

9.2.1.9.1 Accuracy requirement

9.2.1.9.1.1 3.84 Mcps TDD Option

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.

Table 9.43

Parameter	Unit	Accuracy [chip]	Conditions
UTRAN GPS timing of Cell Frames for UP	chip	Accuracy Class A: +/- [20000] chip Accuracy Class B: +/- [20] chip Accuracy Class C: +/- [X] chip	Over the full range

9.2.1.9.1.2 1.28 Mcps TDD Option

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.

Table 9.43A

Parameter	Unit	Accuracy [chip]	Conditions
UTRAN GPS timing of Cell Frames for UP	chip	Accuracy Class A: +/- [5000] chip Accuracy Class B: +/- [5] chip Accuracy Class C: +/- [X] chip	Over the full range

9.2.1.9.2 Range/mapping

9.2.1.9.2.1 3.84 Mcps TDD Option

The reporting range for *UTRAN GPS timing of Cell Frames for UP* is from 0 ... 2322432000000 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 UP < 0,0625	chip
GPS_TIME_00000000000001	0,0625 ≤ UTRAN GPS timing of Cell Frames for UP < 0,1250	chip
GPS_TIME_00000000000002	0,1250 ≤ UTRAN GPS timing of Cell Frames for UP < 0,1875	chip
…	…	…
GPS_TIME_37109759999997	2322431999999,8125 ≤ UTRAN GPS timing of Cell Frames for UP < 2322431999999,8750	chip
GPS_TIME_37109759999998	2322431999999,8750 ≤ UTRAN GPS timing of Cell Frames for UP < 2322431999999,9375	chip
GPS_TIME_37109759999999	2322431999999,9375 ≤ UTRAN GPS timing of Cell Frames for UP < 2322432000000,0000	chip

9.2.1.9.2.2 1.28 Mcps TDD Option

The reporting range for *UTRAN GPS timing of Cell Frames for UP* is from 0 ... 774144000000 chip.

In table 9.44A mapping of the measured quantity is defined.

Table 9.44A

Reported value	Measured quantity value	Unit
GPS_TIME_0000000000000	UTRAN GPS timing of Cell Frames for UP < 0,25	chip
GPS_TIME_0000000000001	0,25 ≤ UTRAN GPS timing of Cell Frames for UP < 0,50	chip
GPS_TIME_0000000000002	0,50 ≤ UTRAN GPS timing of Cell Frames for UP < 0,75	chip
…	…	…
GPS_TIME_3096575999997	774143999999,25 ≤ UTRAN GPS timing of Cell Frames for UP < 774143999999,50	chip
GPS_TIME_3096575999998	774143999999,50 ≤ UTRAN GPS timing of Cell Frames for UP <774143999999,75	chip
GPS_TIME_3096575999999	774143999999,75 ≤ UTRAN GPS timing of Cell Frames for UP < 774144000000,00	chip

3GPP TSG RAN WG4 Meeting #17 R4-010807

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.123 CR 85** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	General section 5 corrections for 1.28 Mcps TDD
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	2001-05-21
Category:	⌘	**F**
Release:	⌘	REL-4

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)*

Reason for change:	⌘	Correction of 1.28Mcps TDD/FDD handover requirement. Correction of references.
Summary of change:	⌘	Update of references, clarification of requirements for 1.28Mcps TDD to FDD handover. In addition it includes clarifications in section 5.5 and 5.6.
Consequences if not approved:	⌘	Incorrect requirement for 1.28McpsTDD/FDD handover based on an undefined statement. Wrong references.
Clauses affected:	⌘	5, 5.1, 5.2, 5.3, 5.5, 5.6
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ 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://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.

5 UTRAN Connected Mode Mobility

This section contains the requirements on the mobility procedures in UTRAN connected mode such as handover and cell re-selection.
Requirements related to the measurements in support of the execution of the UTRAN connected mode mobility procedures are specified, currently not necessarily for all UTRAN connected mode states, in section 8 .
The radio links the UE shall use are controlled by UTRAN with RRC signalling.
UE behaviour in response to UTRAN RRC messages is described in TS25.331.
The purpose of Cell reselection in CELL_FACH, CELL_PCH and URA_PCH states is that the UE shall select a better cell according to the cell reselection criteria in TS 25.304~~3~~. CELL_FACH, CELL_PCH and URA_PCH states are described in TS 25.331.
~~The handover process should be implemented in both the UE and UTRAN. The UE measurements and which radio links the UE shall use is controlled by UTRAN with RRC signalling.~~
~~Measurements are specified in TS25.225 and UE behaviour in response to UTRAN RRC messages is described in 3GPP TS 25.331. Further descriptions of the measurement procedures can be found in chapter 8.~~

5.1 TDD/TDD Handover

5.1.1 Introduction

The purpose of TDD/TDD handover is to change the cell of the connection between UE and UTRAN. The handover procedure is initiated from UTRAN with a RRC message that implies a handover, refer to TS25.331.The handover procedure may cause the UE to change its frequency.
For 1.28 Mcps TDD, at the beginning of the measurement process the UE shall find synchronisation to the cell to measure using the synchronisation channel (DwPCH). This is described under 'cell search' in 3GPP RAN TS25.201, TS25.221 TS25.222, TS25.223, TS25.224, TS25.225' if the monitored cell is a 1.28 Mcps TDD cell. For a TDD cell to monitor after this procedure the exact timing of the midamble of the P-CCPCH is known and the measurements can be performed. Depending on the UE implementation and if timing information about the cell to monitor is available, the UE may perform the measurements on the P-CCPCH directly without prior DwPCH synchronisation.

5.1.2 Requirements

5.1.2.1 TDD/TDD Handover delay

5.1.2.1.1 3.84 Mcps TDD option

Procedure delay for all procedures, that can command a hard handover, are specified in TS25.331 section 11.5.
When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.
If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.
where:
$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.1.

5.1.2.1.2 1.28 Mcps TDD option

Procedure delay for all procedures, that can command a ~~hard~~ handover, are specified in TS25.331.
When the UE receives a RRC message that implies a handover, with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command,,the UE shall start transmission $D_{handover}$ seconds from the end of the last TTI containing the RRC command.
If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.
where:

$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.1.2.2.2.

5.1.2.2 Interruption time

5.1.2.2.1 3.84 Mcps TDD option

The interruption time i.e. the time between the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH, shall be less than the value in table 5.1 for intra-frequency handover and TDD/TDD inter-frequency handover ... There is different requirement on the interruption time depending on if the cell is known or not.
A cell shall be regarded as known by the UE if

- it has been measured during the last 5 seconds or
- a dedicated connection existed between the UE and the cell during the last 5 seconds.

Table 5.1 TDD/TDD handover – interruption time

TDD/TDD handover case	Maximum delay [ms]	
	One Known Cell in HO command	One Unknown Cell in HO command
Intra-frequency	40	350
Inter-frequency	40	350

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation, which can be up to one frame (10ms). And the time that can elapse till the appearance of the slot in which the new uplink DPCH shall be transmitted , which can be up to one frame (10ms).
The requirement in Table 5.1 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

5.1.2.2.2 1.28 Mcps TDD option

The interruption time i.e. the time between the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH, shall be less than the value in table 5.1A. There is different requirement on the interruption time depending on if the cell is known or not.
A cell shall be regarded as known by the UE if
it has been measured during the last 5 seconds or
a dedicated connection existed between the UE and the cell during the last 5 seconds.

Table 5.1A: TDD/ TDD handover – interruption time

cell in the handover command message	Maximum delay [ms]	
	Known Cell	Unknown Cell
1	[40]	[350]

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation. And the time that can elapse till the appearance of the DwPTS in which the new uplink SYNC1 shall be transmitted ,or in case of high chip rate TDD the new uplink DPCH, shall be transmitted , which can be up to one frame (10ms).
The requirement in Table 5.1A for the cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

5.2 TDD/FDD Handover

5.2.1 Introduction

The purpose of TDD/FDD handover is to change the mode between FDD and TDD.
The handover procedure is initiated from UTRAN with a handover command message , refer to TS25.331. The handover procedure causes the UE to change its frequency.

5.2.2 Requirements

These requirements shall apply only to TDD/FDD UE.
The requirements do not apply if FDD macro-diversity is used.

5.2.2.1 Handover delay

5.2.2.1.1 3.84 Mcps TDD option

Procedure delay for all procedures, that can command a hard handover, are specified in [TS25.331 section 11.5].
When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.
If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH at the designated activation time.
where:
$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2 plus the time required for any kind of baseband or RF reconfiguration due to the change of the UTRAN mode.

5.2.2.1.2 1.28 Mcps TDD option

When the UE receives a RRC message that implies a handover, with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.
If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH at the designated activation time.
where:
$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2 ~~plus the time required for any kind of baseband or RF reconfiguration due to the change of the UTRAN mode~~.

5.2.2.2 Interruption time

5.2.2.2.1 3.84 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DTCH and the time the UE starts transmission of the new uplink DPCCH . The interruption time shall be less than the value in table 5.2.
There is different requirement on the interruption time depending on if the cell is known or not.
The definition of known cell can be found in section 5.1.2.2.

Table 5.2 TDD/FDD interruption time

cell present in the handover command message	Maximum delay [ms]	
	Known Cell	Unknown cell
1	[100]	[350]

The interruption time includes the interruption uncertainty when changing the timing from the old TDD to the new FDD cell, which can be up to one frame (10ms) and the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2 into account.
The requirement in Table 5.2 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

5.2.2.2.2 1.28 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH, shall be less than the value in table 5.2A
There is different requirement on the depending on if the cell is known or not.

Table 5.2A: 1.28 Mcps TDD/FDD interruption time

cell in the handover command message	Maximum update delay [ms]	
	Known Cell	Unknown Cell
1	[100]	[350]

The interruption time includes the interruption uncertainty when changing the timing from the old 1.28 Mcps TDD OPTION to the new FDD cell, which can be up to one frame (10ms) and the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2 ~~into account~~.
The requirement in Table 5.2A for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

5.3 TDD/GSM Handover

~~In the early days of UMTS deployment it can be anticipated that the service area will not be as contiguous and extensive as existing second generation systems. It is also anticipated that UMTS network will be an overlay on the 2nd generation network and utilize the latter, in the minimum case, as a fall back to ensure continuity of service and maintain a good QoS as perceived by the user.~~

5.3.1 Introduction

The purpose of inter-RAT handover from UTRAN TDD to GSM is to transfer a connection between the UE and UTRAN TDD to GSM. The handover procedure is initiated from UTRAN with a RRC message (HANDOVER FROM UTRAN COMMAND). The procedure is described in TS25.331 section 8.3.7.

5.3.2 Requirements

These requirements shall apply only to TDD/GSM UE.
This clause presents some of the important aspects of GSM handover required to be performed by the UE. ~~For the full specifications reference should be made the GSM Technical Specifications.~~
The underlying requirement is to ensure continuity of service to the UMTS user. The handover requirements for 3G to GSM should be comparable to GSM to GSM handover requirements.

5.3.2.1 Handover delay

5.3.2.1.1 3.84 Mcps TDD option

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND with the activation time "now" or earlier than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 05.10) on the new channel of the new RAT within the value in Table 5.3 from the last TTI containing the RRC command. If the access is delayed to an indicated activation time later than the value in Table 5.3 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 05.10) on the channel of the new RAT at the designated activation time.
The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

Table 5.3: TDD/GSM handover –handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

5.3.2.1.2 1.28 Mcps TDD option

When the UE receives a RRC HANDOVER COMMAND with the activation time "now" or earlier than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UEit shall be ready to transmit (as specified in GSM 45.010) on the new channel within the new RAT within the value in Table 5.3A from the last TTI containing the RRC command, If the access is delayed to an indicated activation time later than the value in Table 5.3A from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 45.010) on the channel of the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

Table 5.3.A: 1.28 Mcps TDD/GSM handover –handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

5.3.2.2 Interruption time

5.3.2.2.1 3.84 Mcps TDD option

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than the value in Table 5.4. The requirement in Table 5.4 for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.

Table 5.4: TDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

5.3.2.2.2 1.28 Mcps TDD option

The interruption time, i.e. the time between the end of last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than the value in Table 5.4A. The requirement in Table 5.4A for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.

Table 5.4A: TDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

NEXT CHANGED SECTION

5.5 Cell Re-selection in Cell_PCH

5.5.1 Introduction

When a Cell Re-selection process is triggered according to 25.331, the UE shall evaluate the cell re-selection criteria specified in TS 25.304~~3~~, based on radio measurements, and if a better cell is found that cell is selected.

5.5.2 Requirements

5.5.2.1 3.84 Mcps option

Requirements for cell re-selection in Cell_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1, according to TS25.331.

5.5.2.2 1.28 Mcps option

Requirements for cell re-selection in Cell_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1A, according to TS25.331.
~~Same requirements as for cell re-selection in idle mode shall apply.~~

5.6 Cell Re-selection in URA_PCH

5.6.1 Introduction

When a Cell Re-selection process is triggered according to 25.331, the UE shall evaluate the cell re-selection criteria specified in TS 25.304~~3~~, based on radio measurements, and if a better cell is found that cell is selected.

5.6.2 Requirements

5.6.2.1 3.84 Mcps option

Requirements for cell re-selection in URA_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1, according to TS25.331.

5.6.2.2 1.28 Mcps option

Requirements for cell re-selection in URA_PCH state are the same as for cell re-selection in idle mode, see section 4.2. The UE shall support all DRX cycle lengths in table 4.1A, according to TS25.331.
~~Same requirements as for cell re-selection in idle mode shall apply.~~

3GPP TSG RAN WG4 Meeting #17 **R4-010805**

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.123 CR 86** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Correction of re-selection requirements in cell_FACH state for 1.28 Mcps
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	2001-05-21
Category:	⌘	**F**
Release:	⌘	REL-4

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)

Reason for change:	⌘	The current requirement is only valid for 3.84Mcps TDD.
Summary of change:	⌘	A new subsection is introduced for 1.28Mcps TDD option for cell re-selection requirements in Cell-FACH state.
Consequences if not approved:	⌘	Incorrect requirement.

Clauses affected:	⌘	5.4
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ 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://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.

5.4 Cell Re-selection in Cell_FACH

5.4.1 Introduction

When a Cell Re-selection process is triggered according to 25.331, the UE shall evaluate the cell re-selection criteria specified in TS 25.304~~3~~, based on radio measurements, and if a better cell is found that cell is selected.

5.4.2 Requirements for 3.84Mcps TDD option

The UE shall measure all cells that are in the monitored set signalled by the network it has capability for.
The measurements on inter-frequency and inter-RAT cells shall be performed during the idle timeslots. In addition in case of TDD inter-frequency cells measurement occasions according to TS25.331 section 8.5.11 may be used. The use of the measurement occasions for inter-frequency TDD cells is indicated if the P-CCPCH of the target cell is in prallel with the own FACH slot.
If several TDD cells require the measurement occasions the time shall be equaly shared between these cells.

5.4.2.1 Measurements

The UE measurement capability according to section 8.1.2.1 shall apply.
A UE shall measure all cells indicated in the measurement control information it has capability for at least
-once every 5 seconds in case of UTRAN cells

$T_{Measurement,period\_UTRAN} = 5\,\text{sec}$

- once every 2,5seconds in case of GSM cells.

$T_{Measurement,period\_GSM} = 2.5\,\text{sec}$

NOTE: This shall only apply for inter-frequency TDD cells if sufficient measurement occasions according to TS25.331 are provided for the cells this is required for.

The same requirements one the signal level and quality measure indicating a cell re-selection for the intra-frequency, inter-frequency and inter-RAT case as in idle mode shall apply.
The times required for the identification of a cell according to section 8 shall also apply.

5.4.2.2 Cell re-selection delay

When the UE is camped in Cell_FACH state on one of the cells, the UE shall be capable of re-selecting a new cell according the cell re-selection criteria.

5.4.2.2.1 Intra-frequency cell re-selection

The cell re-selection delay in CELL_FACH state for intra frequency cells shall be less than:

$$T_{reselection,intra} = T_{identify,intra} + T_{Measurement\ period\_UTRAN} + 40ms + T_{SI}$$

where

40ms time required for the synchronisation

$T_{identify\_intra}$ = Specified in 8.1.2.2.1.

$T_{Measurement,period\_UTRAN}$ = Specified in 5.4.2.1

T_{SI} = Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

5.4.2.2.2 Inter-frequency TDD cell re-selection

The cell re-selection delay in CELL_FACH state for inter-frequency TDD cells shall be less than:

$$T_{reselection,TDD,inter} = T_{identify,inter} + T_{Measurement\ period\_UTRAN} + 40ms + T_{SI}$$

where

40ms time required for the synchronisation

$T_{identify\_inter}$ = Specified in 8.1.2.3.1.

$T_{Measurement\ period\_UTRAN}$ = Specified in 5.4.2.1

T_{SI} = Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

NOTE: This requirement shall only apply if sufficient measurement occasions according to TS25.331 section 8.5.11 are available if this is required.

5.4.2.2.3 Inter-frequency FDD cell re-selection

The cell re-selection delay in CELL_FACH state for inter-frequency FDD cells shall be less than:

$$T_{reselection,FDD} = T_{identify,FDD} + T_{Measurement\ period\_UTRAN} + [40ms] + T_{SI}$$

where

[40ms] time required for the synchronisation

$T_{identify,FDD}$ = Specified in 8.1.2.4.2.

$T_{Measurement\ period\_UTRAN}$ = Specified in 5.4.2.1

T_{SI} = Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell.

5.4.2.2.4 Inter-RAT cell re-selection

The cell re-selection delay in CELL_FACH state for inter-RAT cells shall be less than:

$$T_{reselection,GSM} = T_{identify,abort,GSM} + 4 \cdot T_{Measurement\ period\_GSM} + 40ms + T_{SI}$$

where

40ms time required for the synchronisation

$T_{identify,abort,GSM}$ = Specified in 8.1.2.4.

$T_{Measurement,period\_GSM}$ = Specified in 5.4.2.1

T_{SI} = Maximum repetition rate of relevant system info blocks that needs to be received by the UE to camp on a cell.

This requirement assumes radio conditions to be sufficient, so reading of system information can be done without errors.

NOTE: The UE shall measure each GSM cell indicated in the monitored set once every 2,5 seconds.

The UE shall maintain a running average of 4 measurements for each GSM cell.

5.4.2.3 Interruption in FACH message reception Measurements

The UE shall not interrupt the FACH message reception during measurements required for cell re-selection except in TDD inter-frequency measurements during the specified measurement occasions according to TS25.331 section 8.5.11 if FACH messages are transmitted during the defined measurement occasions.

The UE shall not interrupt the FACH message reception during the evaluation process of a cell required for a cell re-selection.

In case the UE reselects a cell in Cell_FACH state the time the UE is not able to receive FACH messages shall be less than:

$T_{FACH\_interrupt} = 50ms + MAX\{T_{rep,reselection}, T_{rep\_FACH\_indication}\} + T_{cell\_update}$

Where:

$T_{FACH\_interrupt}$ Is the time between the UE is not able to listen to FACH messages in the old cell and the point in time the UE listens to the FACH slot/messages in the new cell.

50ms Are required to synchronise to the new cell (40ms) and the time that can elapse till the slot appears containing the FACH messages or the interruption uncertainty when changing the timing from the old TDD to the new FDD cell.

$MAX\{T_{rep,reselection}, T_{rep\_FACH\_indication}\}$ Is the maximum of the repetition period of the system information blocks required for the cell re-selection on the target cell and the system information indicating the position of the FACH slot in case of TDD, or a similar information how to acpuire the FACH messages in case of FDD or GSM.

This requirement assumes sufficient radio conditions so that synchronisation and reading the system information can be done without errors.

5.4.3 Requirements for 1.28Mcps TDD option

P-CCPCH RSCP shall be used for cell reselection in Cell-FACH state to another TDD cell, CPICH RSCP shall be used for re-selection to a FDD cell and GSM carrier RSSI shall be used for cell re-selection to a GSM cell. The accuracies of the measurements used for a cell-reselection in an AWGN environment shall comply with the requirements in chapter 9.

5.4.3.1 Measurements

The UE measurement capability according to section 8.1A shall apply.

5.4.3.2 Cell re-selection delay

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the RRC CELL UPDATE message to the UTRAN.

3GPP TSG RAN WG4 Meeting #17 **R4-010797**

Gothenburg, Sweden 21st - 25th May 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.123** **CR** **87** ⌘ ev **-** ⌘ Current version: **4.0.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	1.28 TDD test cases for TDD and FDD measurements
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	2001-05-21
Category:	⌘	**F**
Release:	⌘	REL-4

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)*

Reason for change:	⌘	Clarification of low chip rate measurement test cases. Correction of test cases.
Summary of change:	⌘	Addition of tables including requirements for general test parameters. Introduction of 1.28Mcps TDD inter-frequency test case. Correction of FDD measurement test case for 1.28Mcps TDD.
Consequences if not approved:	⌘	Missing test cases and parameters in specification for 1.28Mcps TDD and FDD test cases.

Clauses affected:	⌘	A.8
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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://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.

A.8 UE Measurements Procedures

A.8.1 TDD intra frequency measurements

A.8.1.1 Event triggered reporting in AWGN propagation conditions

A.8.1.1.1 Test Purpose and Environment

A.8.1.1.1.1 3.84 Mcps TDD option

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A.8-1. The test parameters are shown in Table A.8-1. Hysteresis, absolute Threshold and Time to Trigger values are given in the table below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 1G reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts.

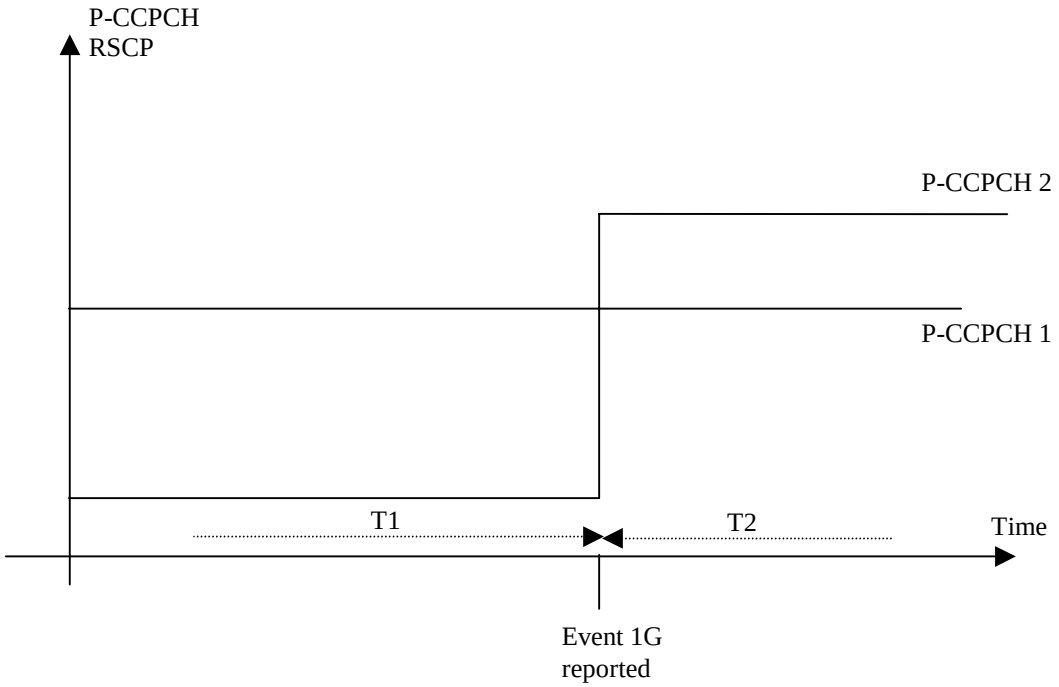

Figure A.8.1: Illustration of parameters for handover measurement reporting test case

Table A.8.1

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior				-3	-3			-3	-3
OCNS		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	3	3	3	3	-Infinity	5	-Infinity	5
I_{oc}	dBm/3.84 MHz	-70							
PCCPCH_RSCP	dB	-70	-70			-Infinity	-68		
Absolute Threshold (SIR)	dB	[ ]							
Hysteresis	dB	[ ]							
Time to Trigger	msec	[ ]							
Propagation Condition		AWGN							

Note: The DPCH of all cells are located in an other timeslot than 0 or 8

A.8.1.1.1.2 1.28 Mcps TDD option

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A. 8.1A. ~~The test parameters are shown in Table A. 8.1A. Hysteresis, absolute Threshold and Time to Trigger values~~ General test parameters are given in the table A.8.1C below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 1G reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The cell specific test parameters are given in Table A.8.1D below.

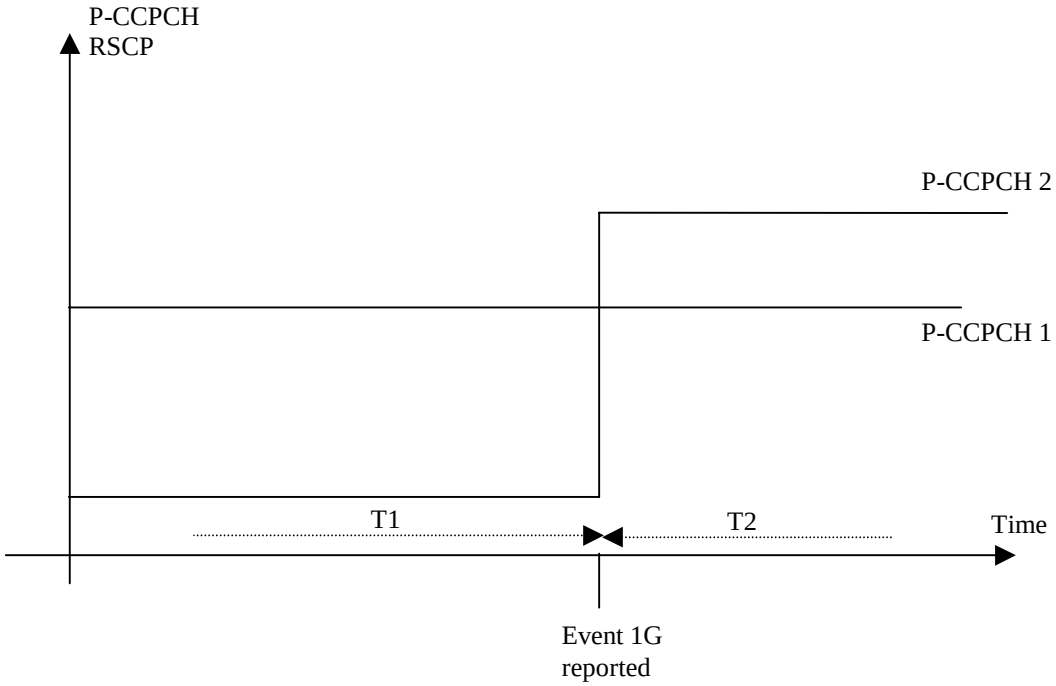

Figure A. 8.1A: Illustration of parameters for handover measurement reporting test case

Table A.8.1C: General test parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
Active cell		Cell 1	
Threshold used frequency	dB	[-71]	Absolute P-CCPCH RSCP threshold for event 1G
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		[24]	Measurement control information is sent before T1 starts.
T1	s	10	
T2	s	10	

Table A. 8.1DA Cell specific parameters for correct reporting of intra frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		DwPTS		0		DwPTS	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 12			
PCCPCH_Ec/Ior	dB	-3				-3			
DwPCH_Ec/Ior	dB			0				0	
$\hat{I}_{or}/I_{oc}$	dB	[3]	[3]			-Infinity	[6]		
I_{oc}	dBm/1.28 MHz	-70							
PCCPCH_RSCP	dBm	[-70]	[-70]			-Infinity	[-67]		
~~Absolute Threshold (SIR)~~	~~dB~~	~~[ ]~~							
~~Hysteresis~~	~~dB~~	~~[ ]~~							
~~Time to Trigger~~	~~msec~~	~~[ ]~~							
Propagation Condition		AWGN							

NOTE: The DPCH of all cells are located in a timeslot other than 0.

A.8.1.1.2 Test Requirements

A.8.1.1.2.1 for 3.84Mcps TDD option

The UE shall send one Event 1G triggered measurement report, with a measurement reporting delay less than [480] ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

A.8.1.1.2.2 for 1.28Mcps TDD option

The UE shall send one Event 1G triggered measurement report, with a measurement reporting delay less than [800] ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

A.8.2 TDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

A.8.2.1.1.1 for 3.84Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.2.

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A.8-2. The test parameters are shown in Table A.8-2. Hysteresis, absolute Threshold and Time to Trigger values are given in the table below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts.

The test parameters are shown in Table A.8.2.

Table A.8.2 Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2		Channel 2	
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior				-3	-3			-3	-3
OCNS		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	3	3	3	3	-Infinity	6	-Infinity	6
I_{oc}	dBm/3.84 MHz	-70							
PCCPCH_RSCP	dB	-70	-70			-Infinity	-67		
Absolute Threshold (SIR)	dB	[ ]							
Hysteresis	dB	[ ]							
Time to Trigger	msec	[ ]							
Propagation Condition		AWGN							

Note: The DPCH of all cells are located in an other timeslot than 0 or 8

A.8.2.1.1.2 for 1.28Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.

This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event". General test parameters are given in the table A.8.2C below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts.

The cell specific test parameters are shown in Table A.8.2D.

Table A.8.2C: General test parameters for correct reporting of TDD inter frequency neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
Active cell		Cell 1	
Threshold non used frequency	dB	[-71]	Absolute P-CCPCH RSCP threshold for event 2C
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		[24] on channel 1 [16] on channel 2	Measurement control information is sent before T1 starts.
T1	s	10	
T2	s	10	

Table A. 8.2D Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		DwPTS		0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3				-3			
DwPCH_Ec/Ior	dB			0				0	
$\hat{I}_{or}/I_{oc}$	dB	[3]	[3]			-Infinity	[6]		
I_{oc}	dBm/1.28 MHz	-70							
PCCPCH_RSCP	dBm	[-70]	[-70]			-Infinity	[-67]		
Propagation Condition		AWGN							

NOTE: The DPCH of all cells are located in a timeslot other than 0.

A.8.2.1.2 Test Requirements

A.8.2.1.2.1 for 3.84Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] s from the beginning of time period T2.

The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

A.8.2.1.2.2 for 1.28Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

A.8.3 FDD measurements

A.8.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

A.8.3.1.1 Test Purpose and Environment

A.8.3.1.1.1 3.84 Mcps TDD option

This test will derive that the terminal makes correct reporting of an event. Cell 1 is current active cell, Cell 2 is a FDD cell. The power level of CPICH Ec/Io of cell 2 and the P-CCPCH RSCP of cell 1 is changed. Hysteresis, Absolute threshold and Time to Trigger values are given in the table below and they are signalled from test device. New measurement control information, which defines neighbour cells etc., is always sent before the handover starts. The number of neighbour cells in the measurement control information is FFS. The test parameters are shown in Table A.8.3.

Table A.8.3

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		n.a		n.a.	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
CPICH_Ec/Ior	DB	n.a.		n.a.		[ ]		[ ]	
PCCPCH_Ec/Ior	DB	-3	-3			[ ]		[ ]	
SCH_Ec/Ior	DB	-9	-9	-9	-9	[ ]		[ ]	
SCH_t_{offset}		0	0	0	0	n.a.		n.a.	
PICH_Ec/Ior				-3	-3	[ ]		[ ]	
DCH_Ec/Ior	DB	n.a.	n.a.	n.a.	n.a.	[ ]		[ ]	
OCNS	DB	-4,28	-4,28	-4,28	-4,28	[ ]		[ ]	
$\hat{I}_{or}/I_{oc}$	DB	[ ]	[ ]	[ ]	[ ]	[ ]		[ ]	
I_{oc}	dBm/3.84 MHz	-70				-70			
CPICH_Ec/Io		n.a.				[ ]			
PCCPCH_RSCP	DB	[ ]	[ ]	[ ]	[ ]	n.a.		n.a.	
Absolute Threshold (SIR)	DB	[ ]				[ ]			
Hysteresis	DB	[ ]				[ ]			
Time to Trigger	msec	[ ]				[ ]			
Propagation Condition		AWGN				AWGN			

Note: The DPCH of the TDD cell is located in an other timeslot than 0 or 8

A.8.3.1.1.2 1.28 Mcps TDD option

~~The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.2.~~

~~This test will derive that the terminal makes correct reporting of an event Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A. 8.1A. The test parameters are shown in Table A. 8.3A. Hysteresis, absolute Threshold and Time to Trigger values are given in the table below and they are signalled from test device. In the measurement control information it is indicated to the UE that event triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts.~~

~~The test parameters are shown in Table A. 8.3A.~~

This test will derive that the terminal makes correct reporting of an event. Cell 1 is current active cell, Cell 2 is a FDD cell. The power level of CPICH RSCP of cell 2 and the P-CCPCH RSCP of cell 1 is changed. General test parameters

are given in the table A.8.3C below and they are signalled from test device. New measurement control information, which defines neighbour cells etc., is always sent before the handover starts. The test parameters are given in Table A.8.3D below.

Table A.8.3C: General test parameters for Correct reporting of FDD neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
Power Control		On	
Active cell		Cell 1	
Threshold non used frequency	dB	-86	Absolute CPICH RSCP threshold for event 2C
Hysteresis	dB	0	
W non-used frequency		1	Applicable for event 2C
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before T1 starts.
T1	s	10	
T2	s	10	

~~Table A. 8.3A: Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition~~

~~Parameter~~	~~Unit~~	~~Cell 1~~				~~Cell 2~~			
~~Timeslot Number~~		~~0~~		~~DwPTS~~		~~0~~		~~DwPTS~~	
		~~T1~~	~~T2~~	~~T1~~	~~T2~~	~~T1~~	~~T2~~	~~T1~~	~~T2~~
~~UTRA RF Channel Number~~		~~Channel 1~~				~~Channel 2~~			
~~PCCPCH_Ec/Ior~~	~~dB~~	~~-3~~				~~-3~~			
~~DwPCH_Ec/Ior~~	~~dB~~			~~0~~				~~0~~	
$\hat{I}_{or}/I_{oc}$	~~dB~~	~~[3]~~	~~[3]~~			~~-Infinity~~	~~[6]~~		
I_{oc}	~~dBm/1.28 MHz~~	~~-70~~							
~~PCCPCH_RSCP~~	~~dBm~~	~~[-70]~~	~~[-70]~~			~~-Infinity~~	~~[-67]~~		
~~Absolute Threshold (SIR)~~	~~dB~~	~~[ ]~~							
~~Hysteresis~~	~~dB~~	~~[ ]~~							
~~Time to Trigger~~	~~msec~~	~~[ ]~~							
~~Propagation Condition~~		~~AWGN~~							

Table A. 8.3D Cell Specific parameters for Correct reporting of FDD neighbours in AWGN propagation condition:

Parameter	Unit	Cell 1				Cell 2	
Timeslot Number		0		DwPTS		n.a	n.a.
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/Ior	dB	n.a.		n.a.		[-10]	[-10]
PCCPCH_Ec/Ior	dB	-3	-3			[-12]	[-12]
SCH_Ec/Ior	dB					[-12]	[-12]
PICH_Ec/Ior	dB					[-15]	[-15]
DwPCH_Ec/Ior	dB			0	0	n.a.	n.a.
OCNS	dB	[ ]	[ ]			[-0,941]	[-0,941]
$\hat{I}_{or}/I_{oc}$	dB	[3]	[3]	[3]	[3]	[-Infinity]	[-2]
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_RSCP		n.a.				[-Infinity]	[-82]
PCCPCH_RSCP	dB	[-70]	[-70]			n.a.	n.a.
Propagation Condition		AWGN				AWGN	

Note: The DPCH of ~~all~~ cell 1~~s~~ is~~are~~ located in a timeslot other than 0.

A.8.3.1.2 Test Requirements

A.8.3.1.2.1 3.84 Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] seconds from the start of time period T2.

The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

A.8.3.1.2.2 1.28 Mcps TDD option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] s from the beginning of time period T2.

The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.