TSG RAN Meeting #14 **RP-010782**

Kyoto, Japan, 11 - 14 December 2001

Title: **CRs (R'99 and Rel-4/Rel-5 Category A) to TS 25.133 (1)**

Source: **TSG RAN WG4**

Agenda Item: **8.4.3**

RAN4 Tdoc	Spec	CR	Title	Cat	Phase	Curr Ver	New Ver
R4-011378	25.133	187	S-criteria evaluation in CELL_FACH state	F	Rel99	3.7.0	3.8.0
R4-011531	25.133	188	S-criteria evaluation in CELL_FACH state	A	Rel-4	4.2.0	4.3.0
R4-011532	25.133	189	S-criteria evaluation in CELL_FACH state	A	Rel-5	5.0.0	5.1.0
R4-011380	25.133	190	Correction of random access requirements and test case	F	Rel99	3.7.0	3.8.0
R4-011533	25.133	191	Correction of random access requirements and test case	A	Rel-4	4.2.0	4.3.0
R4-011534	25.133	192	Correction of random access requirements and test case	A	Rel-5	5.0.0	5.1.0
R4-011381	25.133	193	Correction of RRC connection re-establishment test case	F	Rel99	3.7.0	3.8.0
R4-011535	25.133	194	Correction of RRC connection re-establishment test case	A	Rel-4	4.2.0	4.3.0
R4-011536	25.133	195	Correction of RRC connection re-establishment test case	A	Rel-5	5.0.0	5.1.0
R4-011382	25.133	196	Correction of reference for UTRAN SIRerror measurement	F	Rel99	3.7.0	3.8.0
R4-011522	25.133	197	Correction of reference for UTRAN SIRerror measurement	A	Rel-4	4.2.0	4.3.0
R4-011523	25.133	198	Correction of reference for UTRAN SIRerror measurement	A	Rel-5	5.0.0	5.1.0
R4-011420	25.133	199	FDD/FDD hard handover test cases	F	Rel99	3.7.0	3.8.0
R4-011537	25.133	200	FDD/FDD hard handover test cases	A	Rel-4	4.2.0	4.3.0
R4-011538	25.133	201	FDD/FDD hard handover test cases	A	Rel-5	5.0.0	5.1.0
R4-011500	25.133	202	UTRAN GSM reselection	F	Rel99	3.7.0	3.8.0
R4-011501	25.133	203	UTRAN GSM reselection	A	Rel-4	4.2.0	4.3.0
R4-011502	25.133	204	UTRAN GSM reselection	A	Rel-5	5.0.0	5.1.0

3GPP TSG RAN WG4 Meeting #20 **R4-011378**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **187** ⌘ ev **-** ⌘ Current version: **3.7.0** ⌘

*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:	⌘	S-criteria evaluation in CELL_FACH state
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-06
Category:	⌘	**F** ***Release:*** ⌘ Rel99

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:	⌘	Currently there are no requirements for S-critera evaluation in CELL_FACH state in 25.133.
Summary of change:	⌘	Addition of a reference to the measurement procedures for CELL_FACH in section 8.4 to make it clear that the measurements used in cell re-selection evaluation shall be performed according to section 8.4. A requirement for the maximum time it shall take for the UE to detect that the S-critera is not fulfilled has been added. In CELL_FACH the averaging period of the measurements used in the cell re-selection evaluation can be controlled by using the Treselection parameter. For S-critera evaluation the paremeter Treselection parameter can not be used to extend the averaging and beacuse of the rather short measurement period for intra-frequency measurements in CELL_FACH (200ms) it is proposed to introduced a requirement on minimum filtering of the measurements used in the S-criteria evaluation. The proposed delay requirement is based on that the additional delay caused by the S-critera detection time shall not affect the minimum value (except the timer value equal to zero seconds) too much for the timers that are started in the UE when out of service area is detected, e.g. T317 (min. value 10 sec.) and in some scenarios depending on the expiry of T305 also T307 (min. value 5 sec.). Isolated Impact Analysis: Addition of a requirement. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	There will be no requirements on how long time it may take for the UE to detect that the S-criteria is not fulfilled and therefore some UEs may continue camping on a non-suitable cell for a long time.

Clauses affected:	⌘	5.5.2

Other specs affected:	⌘		Other core specifications	⌘
		X	Test specifications	34.121
			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.

5.5 Cell Re-selection in CELL_FACH

5.5.1 Introduction

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

5.5.2 Requirements

The Cell reselection delays specified below are applicable when the RRC parameter $T_{reselection}$ is set to 0. Otherwise the Cell reselection delay is increased $T_{reselection}$ s.

The measurements CPICH Ec/Io and CPICH RSCP shall be used for cell reselection in Cell-FACH state to another FDD cell, P-CCPCH RSCP shall be used for re-selection to a TDD 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~~section 9. The measurements used for S-criteria and cell re-selection evaluation in CELL_FACH shall be performed according to section 8.4.

5.5.2.1 Cell re-selection delay

For UTRA FDD 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 the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

For UTRA TDD 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.

For GSM 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 random access in the target cell of the new RAT.

5.5.2.1.1 Intra frequency cell reselection

The cell re-selection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{identify,\,intra} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{identify\_intra}$ is specified in 8.4.2.2.1.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{Measurement\_Period\ Intra} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{Measurement\_Period\ Intra}$ = Specified in 8.4.2.2.2.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

5.5.2.1.2 Inter frequency cell reselection

The cell re-selection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\ inter} = T_{identify,\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ ms$$

.where

$T_{identify,\ ,inter}$ is specified in 8.4.2.3.1.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\ inter} = T_{Measurement\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ ms$$

where

$T_{Measurement\_inter}$ = Specified in 8.4.2.3.2.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

5.5.2.1.3 FDD-TDD cell reselection

The cell re-selection delay in CELL_FACH state in FDD to a TDD cell shall be less than

$$T_{reselection,\ TDD} = T_{identify,\ TDD} + T_{SI} + T_{RA}\ ms$$

where

$T_{identify,\ TDD}$ is specified in 8.4.2.4.1.

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell.

T_{RA} = The additional delay caused by the random access procedure.

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

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\ GSM} = T_{identify,\ GSM} + T_{measurement,\ GSM} + T_{BCCH} + T_{RA}\ ms$$

where

$T_{identify,\ GSM}$ is specified in 8.4.2.5.2.1

T_{SI} = The maximum repetition frequency of all relevant system information blocks that needs to be received by the UE to camp on a cell.

$$T_{measurement,GSM} = Max\left\{8 \cdot \frac{N_{carriers}}{N_{GSM\ carrier\ RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms\right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\ carrier\ RSSI}$ is specified in 8.4.2.5.1.

5.5.2.2 Interruption time

The requirements on interruption time below is valid when the signal quality of the serving cell is good enough to allow decoding of the FACH channel during the cell reselection.

5.5.2.2.1 FDD-FDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the preambles on the PRACH for sending the RRC CELL UPDATE message in the target cell.

When intra-frequency cell reselection, or inter-frequency cell reselection when the UE does not need measurement occasion to perform inter-frequency measurements, occurs the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1} = T_{IU}+20+T_{RA}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{RA} = The additional delay caused by the random access procedure.

When inter-frequency cell reselection occurs and the UE needs measurement occasions to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+20+T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

5.5.2.2.2 FDD-TDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the RRC CELL UPDATE message in the target TDD cell.

When a FDD-TDD cell reselection occurs the interruption time shall be less than $T_{interrupt,\ TDD}$

$T_{interrupt,TDD} = 100 + T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

T_{RA} = The additional delay caused by the random access procedure.

5.5.2.2.3 FDD-GSM cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel and the time the UE starts transmit a RACH in the target GSM cell.

When FDD-GSM cell reselection occurs the interruption time shall be less than $T_{interrupt, GSM}$

$T_{interrupt,GSM} = 40 + T_{BCCH} + T_{RA}$ ms

where

T_{BCCH} = the maximum time allowed to read BCCH data from the GSM cell [21].

T_{RA} = The additional delay caused by the random access procedure.

5.5.2.3 Measurement and evaluation of cell selection criteria S of serving cell

The S-criteria detection delay is defined as the time between the occurrence of an event which leads to that the cell selection criteria S for serving cell is not fulfilled and the moment in time when the UE detects that the cell selection criteria S for serving cell is not fulfilled.

The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{Measurement\_Period\ Intra}$.

The S-critera detection delay in CELL_FACH state shall be less than:

$$T_{S\text{-}criteria} = 5 \times T_{Measurement\_Period\ Intra} \text{ ms}$$

where

$T_{Measurement\_Period\ Intra}$ = Specified in 8.4.2.2.2.

3GPP TSG RAN WG4 Meeting #20 **R4-011531**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **188** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☒ Core Network ☐

Title:	⌘	S-criteria evaluation in CELL_FACH state
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-08
Category:	⌘	**A** ***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:	⌘	Currently there are no requirements for S-critera evaluation in CELL FACH state in 25.133.
Summary of change:	⌘	Addition of a reference to the measurement procedures for CELL FACH in section 8.4 to make it clear that the measurements used in cell re-selection evaluation shall be performed according to section 8.4. A requirement for the maximum time it shall take for the UE to detect that the S-critera is not fulfilled has been added. In CELL FACH the averaging period of the measurements used in the cell re-selection evaluation can be controlled by using the Treselection parameter. For S-critera evaluation the paremeter Treselection parameter can not be used to extend the averaging and beacuse of the rather short measurement period for intra-frequency measurements in CELL FACH (200ms) it is proposed to introduced a requirement on minimum filtering of the measurements used in the S-criteria evaluation. The proposed delay requirement is based on that the additional delay caused by the S-critera detection time shall not affect the minimum value (except the timer value equal to zero seconds) too much for the timers that are started in the UE when out of service area is detected, e.g. T317 (min. value 10 sec.) and in some scenarios depending on the expiry of T305 also T307 (min. value 5 sec.). Isolated Impact Analysis: Addition of a requirement. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	There will be no requirements on how long time it may take for the UE to detect that the S-criteria is not fulfilled and therefore some UEs may continue camping on a non-suitable cell for a long time.

Clauses affected:	⌘	5.5.2

Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	34.121
Other comments:	⌘	Corresponding R99 CR in Tdoc R4-011378.		

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.

5.5 Cell Re-selection in CELL_FACH

5.5.1 Introduction

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

5.5.2 Requirements

The Cell reselection delays specified below are applicable when the RRC parameter $T_{reselection}$ is set to 0. Otherwise the Cell reselection delay is increased $T_{reselection}$ s.

The measurements CPICH Ec/Io and CPICH RSCP shall be used for cell reselection in Cell-FACH state to another FDD cell, P-CCPCH RSCP shall be used for re-selection to a TDD 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 section~~chapter~~ 9. The measurements used for S-criteria and cell re-selection evaluation in CELL_FACH shall be performed according to section 8.4.

5.5.2.1 Cell re-selection delay

For UTRA FDD 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 the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

For UTRA TDD 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.

For GSM 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 random access in the target cell of the new RAT.

5.5.2.1.1 Intra frequency cell reselection

The cell re-selection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{identify,\,intra} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{identify\_intra}$ is specified in 8.4.2.2.1.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{Measurement\_Period\ Intra} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{Measurement\_Period\ Intra}$ = Specified in 8.4.2.2.2.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

5.5.2.1.2 Inter frequency cell reselection

The cell re-selection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\ inter} = T_{identify,\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

.where

$T_{identify,\ ,inter}$ is specified in 8.4.2.3.1.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\ inter} = T_{Measurement\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{Measurement\_inter}$ = Specified in 8.4.2.3.2.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

5.5.2.1.3 FDD-TDD cell reselection

The cell re-selection delay in CELL_FACH state in FDD to a TDD cell shall be less than

$$T_{reselection,\ TDD} = T_{identify,\ TDD} + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{identify,\ TDD}$ is specified in 8.4.2.4.1.

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell.

T_{RA} = The additional delay caused by the random access procedure.

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

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\ GSM} = T_{identify,\ GSM} + T_{measurement,\ GSM} + T_{BCCH} + T_{RA}\ \text{ms}$$

where

$T_{identify,\ GSM}$ is specified in 8.4.2.5.2.1

T_{BCCH} = the maximum time allowed to read BCCH data from GSM cell [21].

T_{RA} = the additional delay caused by the random access procedure.

$$T_{measurement,GSM} = Max\left\{8 \cdot \frac{N_{carriers}}{N_{GSM\ carrier\ RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms\right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\ carrier\ RSSI}$ is specified in 8.4.2.5.1.

5.5.2.2 Interruption time

The requirements on interruption time below is valid when the signal quality of the serving cell is good enough to allow decoding of the FACH channel during the cell reselection.

5.5.2.2.1 FDD-FDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the preambles on the PRACH for sending the RRC CELL UPDATE message in the target cell.

When intra-frequency cell reselection, or inter-frequency cell reselection when the UE does not need measurement occasion to perform inter-frequency measurements, occurs the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1} = T_{IU}+20+T_{RA}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{RA} = The additional delay caused by the random access procedure.

When inter-frequency cell reselection occurs and the UE needs measurement occasions to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+20+T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

5.5.2.2.2 FDD-TDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the RRC CELL UPDATE message in the target TDD cell.

When a FDD-TDD cell reselection occurs the interruption time shall be less than $T_{interrupt, TDD}$

$T_{interrupt,TDD} = 100 + T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

T_{RA} = The additional delay caused by the random access procedure.

5.5.2.2.3 FDD-GSM cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel and the time the UE starts transmit a RACH in the target GSM cell.

When FDD-GSM cell reselection occurs the interruption time shall be less than $T_{interrupt, GSM}$

$T_{interrupt,GSM} = 40 + T_{BCCH} + T_{RA}$ ms

where

T_{BCCH} = the maximum time allowed to read BCCH data from the GSM cell [21].

T_{RA} = The additional delay caused by the random access procedure.

5.5.2.3 Measurement and evaluation of cell selection criteria S of serving cell

The S-criteria detection delay is defined as the time between the occurrence of an event which leads to that the cell selection criteria S for serving cell is not fulfilled and the moment in time when the UE detects that the cell selection criteria S for serving cell is not fulfilled.

The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{Measurement\_Period\ Intra}$.

The S-critera detection delay in CELL_FACH state shall be less than:

$$T_{S\text{-}criteria} = 5 \times T_{Measurement\_Period\ Intra} \text{ ms}$$

where

$T_{Measurement\_Period\ Intra}$ = Specified in 8.4.2.2.2.

3GPP TSG RAN WG4 Meeting #20 **R4-011532**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **189** ⌘ ev **-** ⌘ Current version: **5.0.0** ⌘

*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:	⌘	S-criteria evaluation in CELL_FACH state
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-08
Category:	⌘	**A** ***Release:*** ⌘ Rel-5

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	Currently there are no requirements for S-critera evaluation in CELL FACH state in 25.133.
Summary of change:	⌘	Addition of a reference to the measurement procedures for CELL FACH in section 8.4 to make it clear that the measurements used in cell re-selection evaluation shall be performed according to section 8.4. A requirement for the maximum time it shall take for the UE to detect that the S-critera is not fulfilled has been added. In CELL FACH the averaging period of the measurements used in the cell re-selection evaluation can be controlled by using the Treselection parameter. For S-critera evaluation the paremeter Treselection parameter can not be used to extend the averaging and beacuse of the rather short measurement period for intra-frequency measurements in CELL FACH (200ms) it is proposed to introduced a requirement on minimum filtering of the measurements used in the S-criteria evaluation. The proposed delay requirement is based on that the additional delay caused by the S-critera detection time shall not affect the minimum value (except the timer value equal to zero seconds) too much for the timers that are started in the UE when out of service area is detected, e.g. T317 (min. value 10 sec.) and in some scenarios depending on the expiry of T305 also T307 (min. value 5 sec.). Isolated Impact Analysis: Addition of a requirement. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	There will be no requirements on how long time it may take for the UE to detect that the S-criteria is not fulfilled and therefore some UEs may continue camping on a non-suitable cell for a long time.

Clauses affected:	⌘	5.5.2

Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	34.121
Other comments:	⌘	Corresponding R99 CR in Tdoc R4-011378		

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.

5.5 Cell Re-selection in CELL_FACH

5.5.1 Introduction

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

5.5.2 Requirements

The Cell reselection delays specified below are applicable when the RRC parameter $T_{reselection}$ is set to 0. Otherwise the Cell reselection delay is increased $T_{reselection}$ s.

The measurements CPICH Ec/Io and CPICH RSCP shall be used for cell reselection in Cell-FACH state to another FDD cell, P-CCPCH RSCP shall be used for re-selection to a TDD 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 section~~chapter~~ 9. The measurements used for S-criteria and cell re-selection evaluation in CELL_FACH shall be performed according to section 8.4.

5.5.2.1 Cell re-selection delay

For UTRA FDD 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 the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

For UTRA TDD 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.

For GSM 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 random access in the target cell of the new RAT.

5.5.2.1.1 Intra frequency cell reselection

The cell re-selection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{identify,\,intra} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{identify\_intra}$ is specified in 8.4.2.2.1.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{reselection,\,intra} = T_{Measurement\_Period\ Intra} + T_{IU} + 20 + T_{SI} + T_{RA} \text{ ms}$$

where

$T_{Measurement\_Period\ Intra}$ = Specified in 8.4.2.2.2.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

5.5.2.1.2 Inter frequency cell reselection

The cell re-selection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\ inter} = T_{identify,\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

.where

$T_{identify,\ ,inter}$ is specified in 8.4.2.3.1.

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell..

T_{RA} = The additional delay caused by the random access procedure.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection,\ inter} = T_{Measurement\ inter} + T_{IU} + 20 + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{Measurement\_inter}$ = Specified in 8.4.2.3.2.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

5.5.2.1.3 FDD-TDD cell reselection

The cell re-selection delay in CELL_FACH state in FDD to a TDD cell shall be less than

$$T_{reselection,\ TDD} = T_{identify,\ TDD} + T_{SI} + T_{RA}\ \text{ms}$$

where

$T_{identify,\ TDD}$ is specified in 8.4.2.4.1.

T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell.

T_{RA} = The additional delay caused by the random access procedure.

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

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\ GSM} = T_{identify,\ GSM} + T_{measurement,\ GSM} + T_{BCCH} + T_{RA}\ \text{ms}$$

where

$T_{identify,\ GSM}$ is specified in 8.4.2.5.2.1

T_{BCCH} = the maximum time allowed to read BCCH data from GSM cell [21].

T_{RA} = the additional delay caused by the random access procedure.

$$T_{measurement,GSM} = Max\left\{8 \cdot \frac{N_{carriers}}{N_{GSM\ carrier\ RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms\right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\ carrier\ RSSI}$ is specified in 8.4.2.5.1.

5.5.2.2 Interruption time

The requirements on interruption time below is valid when the signal quality of the serving cell is good enough to allow decoding of the FACH channel during the cell reselection.

5.5.2.2.1 FDD-FDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the preambles on the PRACH for sending the RRC CELL UPDATE message in the target cell.

When intra-frequency cell reselection, or inter-frequency cell reselection when the UE does not need measurement occasion to perform inter-frequency measurements, occurs the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1} = T_{IU}+20+T_{RA}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{RA} = The additional delay caused by the random access procedure.

When inter-frequency cell reselection occurs and the UE needs measurement occasions to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+20+T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

5.5.2.2.2 FDD-TDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the RRC CELL UPDATE message in the target TDD cell.

When a FDD-TDD cell reselection occurs the interruption time shall be less than $T_{interrupt, TDD}$

$T_{interrupt,TDD} = 100 + T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

T_{RA} = The additional delay caused by the random access procedure.

5.5.2.2.3 FDD-GSM cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel and the time the UE starts transmit a RACH in the target GSM cell.

When FDD-GSM cell reselection occurs the interruption time shall be less than $T_{interrupt, GSM}$

$T_{interrupt,GSM} = 40 + T_{BCCH} + T_{RA}$ ms

where

T_{BCCH} = the maximum time allowed to read BCCH data from the GSM cell [21].

T_{RA} = The additional delay caused by the random access procedure.

5.5.2.3 Measurement and evaluation of cell selection criteria S of serving cell

The S-criteria detection delay is defined as the time between the occurrence of an event which leads to that the cell selection criteria S for serving cell is not fulfilled and the moment in time when the UE detects that the cell selection criteria S for serving cell is not fulfilled.

The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements used for cell selection criteria S evaluation of the serving cell over at least 3 measurement periods $T_{Measurement\_Period\ Intra}$.

The S-critera detection delay in CELL_FACH state shall be less than:

$$T_{S\text{-}criteria} = 5 \times T_{Measurement\_Period\ Intra} \text{ ms}$$

where

$T_{Measurement\_Period\ Intra}$ = Specified in 8.4.2.2.2.

3GPP TSG RAN WG4 Meeting #20 **R4-011380**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **190** ⌘ ev **-** ⌘ Current version: **3.7.0** ⌘

*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:	⌘	Correction of random access requirements and test case
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-10-26
Category:	⌘	**F** ***Release:*** ⌘ Rel99

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 requirement on the UE behaviour when reaching maximum transmitt power during random access preample power ramping is not complete.
Summary of change:	⌘	Addition of reference in section 6.3.2.4 and in section A.6.2.2.4 to the existing requirements on maximum UE TX power stated in section 6.5. Clarification of the requirement on maximum UE TX power in section 6.5 when the UE output power is outside the range covered by the UE transmitted power measurement. For that case the existing requirement on output power setting for the open loop power control in 25.101 section 6.4.1 applies. The requirements on open loop power control in 25.101 specifies requirements on the ability of the UE transmitter to sets its output power to a specific value. Isolated Impact Analysis: The CR clarifies possible ambiguities. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	The requirements on UE maximum transmitted power during preample ramping will not be complete and therefore the UE may use higher power than allowed during preamble power ramping.

Clauses affected:	⌘	6.3.2.4, 6.5, A.6.2.2.4		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	34.121
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.

6.3.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN.

The absolute power of any preamble shall not exceed the maximum allowed UL TX power with more than specified in section 6.5. ~~+/- [] dB (or +/- [] dB in extreme conditions).~~

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

A.6.2.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN. No ACK/NACK shall be sent by UTRAN during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than the tolerance given in section 6.5.~~+/- [] dB (or +/- [] dB in extreme conditions).~~

3GPP TSG RAN WG4 Meeting #20 **R4-011533**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **191** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of random access requirements and test case
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-08
Category:	⌘	**A** ***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 requirement on the UE behaviour when reaching maximum transmitt power during random access preample power ramping is not complete.
Summary of change:	⌘	Addition of reference in section 6.3.2.4 and in section A.6.2.2.4 to the existing requirements on maximum UE TX power stated in section 6.5. Clarification of the requirement on maximum UE TX power in section 6.5 when the UE output power is outside the range covered by the UE transmitted power measurement. For that case the existing requirement on output power setting for the open loop power control in 25.101 section 6.4.1 applies. The requirements on open loop power control in 25.101 specifies requirements on the ability of the UE transmitter to sets its output power to a specific value. Isolated Impact Analysis: The CR clarifies possible ambiguities. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	The requirements on UE maximum transmitted power during preample ramping will not be complete and therefore the UE may use higher power than allowed during preamble power ramping.

Clauses affected:	⌘	6.3.2.4, 6.5, A.6.2.2.4		
Other specs affected:	⌘	☐ Other core specifications **X** Test specifications ☐ O&M Specifications	⌘	34.121
Other comments:	⌘	Corresponding R99 CR in Tdoc R4-011380		

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.

6.3.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN.

The absolute power of any preamble shall not exceed the maximum allowed UL TX power with more than specified in section 6.5. ~~+/- [] dB (or +/- [] dB in extreme conditions).~~

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

A.6.2.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN. No ACK/NACK shall be sent by UTRAN during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than the tolerance given in section 6.5.~~+/- [] dB (or +/- [] dB in extreme conditions).~~

3GPP TSG RAN WG4 Meeting #20 **R4-011534**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **192** ⌘ ev **-** ⌘ Current version: **5.0.0** ⌘

*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:	⌘	Correction of random access requirements and test case
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-08
Category:	⌘	**A** ***Release:*** ⌘ Rel-5

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The requirement on the UE behaviour when reaching maximum transmitt power during random access preample power ramping is not complete.
Summary of change:	⌘	Addition of reference in section 6.3.2.4 and in section A.6.2.2.4 to the existing requirements on maximum UE TX power stated in section 6.5. Clarification of the requirement on maximum UE TX power in section 6.5 when the UE output power is outside the range covered by the UE transmitted power measurement. For that case the existing requirement on output power setting for the open loop power control in 25.101 section 6.4.1 applies. The requirements on open loop power control in 25.101 specifies requirements on the ability of the UE transmitter to sets its output power to a specific value. Isolated Impact Analysis: The CR clarifies possible ambiguities. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	The requirements on UE maximum transmitted power during preample ramping will not be complete and therefore the UE may use higher power than allowed during preamble power ramping.

Clauses affected:	⌘	6.3.2.4, 6.5, A.6.2.2.4		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	34.121
Other comments:	⌘	Correspodning R99 CR in Tdoc R4-011380.		

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.

6.3.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN.

The absolute power of any preamble shall not exceed the maximum allowed UL TX power with more than specified in section 6.5. ~~+/- [] dB (or +/- [] dB in extreme conditions).~~

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

For each measurement period, the UE shall with the use of the UE transmitted power measurement, estimate if it has reached the Maximum allowed UL TX Power or not. With tolerances as defined for the UE transmitted power measurement accuracy (section 9.1.6.1), the UE output power shall not exceed the Maximum allowed UL TX Power, as set by the UTRAN.

For UE output powers that are outside the range covered by the UE transmitted power measurement the UE output power shall not exceed the Maximum allowed UL TX Power with more than the tolerances specified for the Open loop power control in TS 25.101 section 6.4.1.

A.6.2.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN. No ACK/NACK shall be sent by UTRAN during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than the tolerance given in section 6.5.~~+/ [] dB (or +/- [] dB in extreme conditions).~~

3GPP TSG RAN WG4 Meeting #20 R4-011381

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **193** ⌘ ev **-** ⌘ Current version: **3.7.0** ⌘

*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: ⌘	Correction of RRC connection re-establishment test case	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 2001-10-26
Category: ⌘	**F**	***Release:*** ⌘ Rel99

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 general requirement for RRC connection re-establishment has been changed.
Summary of change: ⌘	Addition of 40ms delay in the test requirement to consider the additional delay casued by the random access procedure. Isolated Impact Analysis: Correction of the test case, does not affect the function or the requirement.
Consequences if not approved: ⌘	The requirement in the test case will no be inline with the core requirement.

Clauses affected: ⌘	A.6.1.2		
Other specs affected: ⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	34.121
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.6.1.2 Test Requirements

Test 1

RRC re-establishment delay shall be less than 1673~~3~~0 ms.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

Test 2

RRC re-establishment delay shall be less than 3973~~3~~0 ms.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

3GPP TSG RAN WG4 Meeting #20 R4-011535

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **194** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of RRC connection re-establishment test case
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-02
Category:	⌘	**A** ***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 general requirement for RRC connection re-establishment has been changed.
Summary of change:	⌘	Addition of 40ms delay in the test requirement to consider the additional delay casued by the random access procedure. Isolated Impact Analysis: Correction of the test case, does not affect the function or the requirement.
Consequences if not approved:	⌘	The requirement in the test case will no be inline with the core requirement.

Clauses affected:	⌘	A.6.1.2		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	34.121
Other comments:	⌘	Corresponding R99 CR in Tdoc R4-011381		

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.6.1.2 Test Requirements

Test 1

RRC re-establishment delay shall be less than 1673~~0~~0 ms.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

Test 2

RRC re-establishment delay shall be less than 3973~~0~~0 ms.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

3GPP TSG RAN WG4 Meeting #20 R4-011536

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **195** ⌘ ev **-** ⌘ Current version: **5.0.0** ⌘

*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:	⌘	Correction of RRC connection re-establishment test case
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-02
Category:	⌘	**A** ***Release:*** ⌘ Rel-5

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The general requirement for RRC connection re-establishment has been changed.
Summary of change:	⌘	Addition of 40ms delay in the test requirement to consider the additional delay casued by the random access procedure. Isolated Impact Analysis: Correction of the test case, does not affect the function or the requirement.
Consequences if not approved:	⌘	The requirement in the test case will no be inline with the core requirement.

Clauses affected:	⌘	A.6.1.2		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	34.121
Other comments:	⌘	Corresponding R99 CR in Tdoc R4-011381		

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.6.1.2 Test Requirements

Test 1

RRC re-establishment delay shall be less than 1673~~0~~0 ms.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

Test 2

RRC re-establishment delay shall be less than 3973~~0~~0 ms.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

3GPP TSG RAN WG4 Meeting #20 R4-011382

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **196** ⌘ ev **-** ⌘ Current version: **3.7.0** ⌘

*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:	⌘	Correction of reference for UTRAN SIRerror measurement
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-10-26
Category:	⌘	**F** ***Release:*** ⌘ Rel99

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:	⌘	Incorrect reference in 25.133 section 9.2.3.
Summary of change:	⌘	Correction of reference in section 9.2.3.
Consequences if not approved:	⌘	The requirement for the SIRerror measurement will not be correct. Isolated Impact Analysis: Modification is correction of reference.

Clauses affected:	⌘	9.2.3
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.

9.2.3 SIR_{error}

The measurement period shall be 80 ms.

NOTE: The measurement period is the same as for the SIR measurement in section 9~~8~~.2.2. SIR_{error} is calculated from SIR and SIR_{target}, see TS 25.215.

9.2.3.1 Accuracy requirement

Table 9.40

Parameter	Accuracy	Range
SIR_{error}	± 3 dB	The accuracy requirement for SIR_{error} is valid for SIR within the guaranteed accuarcy range specified in section 9~~8~~.2.2.

NOTE: The accuracy requirement for SIR_{error} is the same as for the SIR measurement specified in section 9~~8~~.2.2. SIR_{error} is calculated from SIR and SIR_{target}, see TS 25.215.

3GPP TSG RAN WG4 Meeting #20 R4-011522

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **197** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of reference for UTRAN SIRerror measurement
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-02
Category:	⌘	**A** ***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:	⌘	Incorrect reference in 25.133 section 9.2.3.
Summary of change:	⌘	The requirement for the SIRerror measurement will not be correct. Isolated Impact Analysis: Modification is correction of reference.
Consequences if not approved:	⌘	The requirement for the SIRerror measurement will not be correct.

Clauses affected:	⌘	9.2.3
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	Corresponding R99 CR in Tdoc R4-011382

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.

9.2.3 SIR_{error}

The measurement period shall be 80 ms.

NOTE: The measurement period is the same as for the SIR measurement in section ~~8~~9.2.2. SIR_{error} is calculated from SIR and SIR_{target}, see TS 25.215.

9.2.3.1 Accuracy requirement

Table 9.40

Parameter	Accuracy	Range
SIR_{error}	± 3 dB	The accuracy requirement for SIR_{error} is valid for SIR within the guaranteed accuarcy range specified in section ~~8~~9.2.2.

NOTE: The accuracy requirement for SIR_{error} is the same as for the SIR measurement specified in section ~~8~~9.2.2. SIR_{error} is calculated from SIR and SIR_{target}, see TS 25.215.

3GPP TSG RAN WG4 Meeting #20 R4-011523

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **198** ⌘ ev **-** ⌘ Current version: **5.0.0** ⌘

*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:	⌘	Correction of reference for UTRAN SIRerror measurement
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-02
Category:	⌘	**A** ***Release:*** ⌘ Rel-5

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	Incorrect reference in 25.133 section 9.2.3.
Summary of change:	⌘	The requirement for the SIRerror measurement will not be correct. Isolated Impact Analysis: Modification is correction of reference.
Consequences if not approved:	⌘	The requirement for the SIRerror measurement will not be correct.

Clauses affected:	⌘	9.2.3
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	Corresponding R99 CR in Tdoc R4-011382

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.

9.2.3 SIR_{error}

The measurement period shall be 80 ms.

NOTE: The measurement period is the same as for the SIR measurement in section ~~8~~9.2.2. SIR_{error} is calculated from SIR and SIR_{target}, see TS 25.215.

9.2.3.1 Accuracy requirement

Table 9.40

Parameter	Accuracy	Range
SIR_{error}	± 3 dB	The accuracy requirement for SIR_{error} is valid for SIR within the guaranteed accuarcy range specified in section ~~8~~9.2.2.

NOTE: The accuracy requirement for SIR_{error} is the same as for the SIR measurement specified in section ~~8~~9.2.2. SIR_{error} is calculated from SIR and SIR_{target}, see TS 25.215.

3GPP TSG RAN WG4 Meeting #20 **R4-011420**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133 CR 199** ⌘ ev ⌘ Current version: **3.7.0** ⌘

*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 ☐ Core Network ☐

Title:	⌘	FDD/FDD hard handover test cases
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-08
Category:	⌘	**F** ***Release:*** ⌘ Rel99

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 FDD/FDD hard handover test cases are ambiguous. Hence,T1RF may not able to create the complete test cases so that they are aligned with the general performance requirements.

Summary of change: ⌘ 1) It is clarified when a Physical Channel reconfiguration message should be sent in the FDD/FDD hard handover test cases.

If UTRAN starts transmitting a Physical channel reconfiguration at the beginning of a certain time instance, the message is not yet available for the UE at the beginning of that time instance. The general requirements of Section 5.2.2.1 says as follows " *$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.*"

The section 13.5.1 of TS25.331, which defines RRC procedures delays, says as follows:

"*N1 = upper limit on the time required to execute modifications in UE after the reception of a UTRAN -> UE message has been completed. Where applicable (e.g. the physical layer transmission is impacted), the changes shall be adopted in the beginning of the next TTI starting after N1. N1 is specified as a multiple of 10 ms.*"

N1 for Physical channel reconfiguration is defined to be 8, which corresponds 80 ms.

2) Tinterrupt2 is corrected to be 100ms in the inter-frequency hard handover test case.

Page: 1
If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time is required to be less than Tinterrupt2. In this test case Tinterrupt2 becomes T_{IU}+40+50*1,

		where T_{IU} =10ms. Isolated Impact Analysis: The CR only corrects test cases to be aligned with the general requirements and therefore it does not have impact on implementation.
Consequences if not approved:	⌘	The test cases are not fully aligned with the general performance requirements and the tests may be ambiguous for T1 RF.

Clauses affected:	⌘	A.5.2.1.1, A.5.2.2.1 and A.5.2.2.2		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	34.121
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.5 UTRAN Connected Mode Mobility

A.5.1 FDD/FDD Soft Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.1.2.1 and 5.1.2.2 exists.

A.5.2 FDD/FDD Hard Handover

A.5.2.1 Handover to intra-frequency cell

A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	5	
T3		s	5	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note1	N/A	N/A	Note1
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0	6.97		-Infinity	5.97	
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}							

A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct handovers observed during repeated tests shall be at least 90%.

A.5.2.2 Handover to inter-frequency cell

A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL_DCH state in the dual carrier case reported in section 5.2.2.1.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.5.0B and A.5.0C below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time at beginning of T2 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T2. The RRC procedure delay is defined [16].

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range		dB	4	Applicable for event 1A
Hysteresis		dB	0	
W			1	Applicable for event 1A
W non-used frequency			1	Applicable for event 2C
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	10	
T2		s	5	

TableA.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note1		N/A	Note1
OCNS		Note 2		-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0	0	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-13	-13	-14	-14
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 100~~90~~ ms from the beginning of time period T2.

The rate of correct handovers observed during repeated tests shall be at least 90%.

3GPP TSG RAN WG4 Meeting #20 **R4-011537**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **200** ⌘ ev ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	FDD/FDD hard handover test cases
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-15
Category:	⌘ **A**	***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 FDD/FDD hard handover test cases are ambiguous. Hence,T1RF may not able to create the complete test cases so that they are aligned with the general performance requirements.

Summary of change: ⌘ 1) It is clarified when a Physical Channel reconfiguration message should be sent in the FDD/FDD hard handover test cases.

If UTRAN starts transmitting a Physical channel reconfiguration at the beginning of a certain time instance, the message is not yet available for the UE at the beginning of that time instance. The general requirements of Section 5.2.2.1 says as follows " *$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.*"

The section 13.5.1 of TS25.331, which defines RRC procedures delays, says as follows:

"*N1 = upper limit on the time required to execute modifications in UE after the reception of a UTRAN -> UE message has been completed. Where applicable (e.g. the physical layer transmission is impacted), the changes shall be adopted in the beginning of the next TTI starting after N1. N1 is specified as a multiple of 10 ms.*"

N1 for Physical channel reconfiguration is defined to be 8, which corresponds 80 ms.

2) Tinterrupt2 is corrected to be 100ms in the inter-frequency hard handover test case.

Page: 1
If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time is required to be less than Tinterrupt2. In this test case Tinterrupt2 becomes T_{IU}+40+50*1,

		where T_{IU} =10ms.
Consequences if not approved:	⌘	The test cases are not fully aligned with the general performance requirements and the tests may be ambiguous for T1 RF.

Clauses affected:	⌘	A.5.2.1.1, A.5.2.2.1 and A.5.2.2.2		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	34.121
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.5 UTRAN Connected Mode Mobility

A.5.1 FDD/FDD Soft Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.1.2.1 and 5.1.2.2 exists.

A.5.2 FDD/FDD Hard Handover

A.5.2.1 Handover to intra-frequency cell

A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	5	
T3		s	5	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note1	N/A	N/A	Note1
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0	6.97		-Infinity	5.97	
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}							

A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct handovers observed during repeated tests shall be at least 90%.

A.5.2.2 Handover to inter-frequency cell

A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL_DCH state in the dual carrier case reported in section 5.2.2.1.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.5.0B and A.5.0C below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time at beginning of T2 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T2. The RRC procedure delay is defined [16].

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range		dB	4	Applicable for event 1A
Hysteresis		dB	0	
W			1	Applicable for event 1A
W non-used frequency			1	Applicable for event 2C
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	10	
T2		s	5	

TableA.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note1		N/A	Note1
OCNS		Note 2		-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0	0	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-13	-13	-14	-14
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 100~~90~~ ms from the beginning of time period T2.

The rate of correct handovers observed during repeated tests shall be at least 90%.

3GPP TSG RAN WG4 Meeting #20 **R4-011538**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133 CR 201** ⌘ ev ⌘ Current version: **5.0.0** ⌘

*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 ☐ Core Network ☐

Title:	⌘	FDD/FDD hard handover test cases
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 2001-11-15
Category:	⌘ **A**	***Release:*** ⌘ Rel-5

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

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change: ⌘ The FDD/FDD hard handover test cases are ambiguous. Hence,T1RF may not able to create the complete test cases so that they are aligned with the general performance requirements.

Summary of change: ⌘ 1) It is clarified when a Physical Channel reconfiguration message should be sent in the FDD/FDD hard handover test cases.

If UTRAN starts transmitting a Physical channel reconfiguration at the beginning of a certain time instance, the message is not yet available for the UE at the beginning of that time instance. The general requirements of Section 5.2.2.1 says as follows " *$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.*"

The section 13.5.1 of TS25.331, which defines RRC procedures delays, says as follows:

"*N1 = upper limit on the time required to execute modifications in UE after the reception of a UTRAN -> UE message has been completed. Where applicable (e.g. the physical layer transmission is impacted), the changes shall be adopted in the beginning of the next TTI starting after N1. N1 is specified as a multiple of 10 ms.*"

N1 for Physical channel reconfiguration is defined to be 8, which corresponds 80 ms.

2) Tinterrupt2 is corrected to be 100ms in the inter-frequency hard handover test case.

Page: 1
If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time is required to be less than Tinterrupt2. In this test case Tinterrupt2 becomes T_{IU}+40+50*1,

		where T_{IU} =10ms.
Consequences if not approved:	⌘	The test cases are not fully aligned with the general performance requirements and the tests may be ambiguous for T1 RF.

Clauses affected:	⌘	A.5.2.1.1, A.5.2.2.1 and A.5.2.2.2		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	34.121
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.5 UTRAN Connected Mode Mobility

A.5.1 FDD/FDD Soft Handover

NOTE: This section is included for consistency with numbering with section 5; currently no test covering requirements in sections 5.1.2.1 and 5.1.2.2 exists.

A.5.2 FDD/FDD Hard Handover

A.5.2.1 Handover to intra-frequency cell

A.5.2.1.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL_DCH state in the single carrier case reported in section 5.2.2.1.

The test parameters are given in Table A.5.0 and A.5.0A below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined [16].

Table A.5.0: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbouring cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	5	
T2		s	5	
T3		s	5	

Table A.5.0A: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	dB	-10			-10		
PCCPCH_Ec/Ior	dB	-12			-12		
SCH_Ec/Ior	dB	-12			-12		
PICH_Ec/Ior	dB	-15			-15		
DPCH_Ec/Ior	dB	Note1	Note1	Note1	N/A	N/A	Note1
OCNS		Note2	Note2	Note2	-0.941	-0.941	Note2
$\hat{I}_{or}/I_{oc}$	dB	0	6.97		-Infinity	5.97	
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/Io	dB	-13			-Infinity	-14	
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}							

A.5.2.1.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct handovers observed during repeated tests shall be at least 90%.

A.5.2.2 Handover to inter-frequency cell

A.5.2.2.1 Test Purpose and Environment

The purpose of this test is to verify the requirement for the hard handover delay in CELL_DCH state in the dual carrier case reported in section 5.2.2.1.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.5.0B and A.5.0C below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration with activation time at beginning of T2 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T2. The RRC procedure delay is defined [16].

Table A.5.0B: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 1	As specified in TS 25.101 section A.5.
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold non used frequency		dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range		dB	4	Applicable for event 1A
Hysteresis		dB	0	
W			1	Applicable for event 1A
W non-used frequency			1	Applicable for event 2C
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		s	10	
T2		s	5	

TableA.5.0C: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	Note1		N/A	Note1
OCNS		Note 2		-0.941	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0	0	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70			
CPICH_Ec/Io	dB	-13	-13	-14	-14
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.					

A.5.2.2.2 Test Requirements

The UE shall start to transmit the UL DPCCH to Cell 2 less than 100~~90~~ ms from the beginning of time period T2.

The rate of correct handovers observed during repeated tests shall be at least 90%.

3GPP TSG RAN WG4 Meeting #20 **R4-011500**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **202** ⌘ ev **-** ⌘ Current version: **3.7.0** ⌘

*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 ☐ Core Network ☐

Title:	⌘	UTRAN-GSM CELL RESELECTION
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 07 September 2001
Category:	⌘ **F**	***Release:*** ⌘ Rel99

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:	⌘	No requirement are specified for UE(s) which do not require measurement occasions.
Summary of change:	⌘	In section 8 Measurement in CELL FACH state is specified two cases - Measurement occasions provided by the UTRAN - No measurement occasions are provided by the UTRAN However the parameters for $T_{identify,\ GSM}$ and $T_{measurement,\ GSM}$ are only specified when measurement occasions by the UTRAN are provided This document proposed the requirement for both these values Isolation impact analysis Would not affect implementations behaving like indicated in the CR, would affect implementation supported the correct functionality otherwise
Consequences if not approved:	⌘	Non uniform behaviour and performance for the UE in CELL FACH mode

Clauses affected:	⌘	5.5.2.1.4
Other specs affected:	⌘	☐ Other core specifications ⌘ TS34.121 ☐ 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.

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\,GSM} = T_{identify,\,GSM} + T_{measurement,\,GSM} + T_{BCCH} + T_{RA} \text{ ms}$$

where

a) For UE requiring measurement occasions.

$T_{identify,\,GSM}$ is specified in 8.4.2.5.2.1

~~T_{SI} = The maximum repetition frequency of all relevant system information blocks that needs to be received by the UE to camp on a cell.~~

T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21]

$$T_{measurement,\,GSM} = Max\left\{8 \cdot \frac{N_{carriers}}{N_{GSM\ carrier\ RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms\right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\ carrier\ RSSI}$ is specified in 8.4.2.5.1.

b) For UE not requiring measurement occasions

$T_{identify,\,GSM}$ = 150 ms

$T_{measurement,\,GSM}$ = 480 ms

5.5.2.2 Interruption time

The requirements on interruption time below is valid when the signal quality of the serving cell is good enough to allow decoding of the FACH channel during the cell reselection.

5.5.2.2.1 FDD-FDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the preambles on the PRACH for sending the RRC CELL UPDATE message in the target cell.

1) When intra-frequency cell reselection, or inter-frequency cell reselection when the UE does not need measurement occasion to perform inter-frequency measurements, occurs the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1} = T_{IU}+20+T_{RA}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{RA} = The additional delay caused by the random access procedure.

2) When inter-frequency cell reselection occurs and the UE needs measurement occasions to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+20+T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

3GPP TSG RAN WG4 Meeting #20 **R4-011501**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133 CR 203** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network ☐ Core Network ☐

Title:	⌘	UTRAN-GSM CELL RESELECTION
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 07 September 2001
Category:	⌘ **A**	***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:	⌘	No requirement are specified for UE(s) which do not require measurement occasions.
Summary of change:	⌘	In section 8 Measurement in CELL FACH state is specified two cases - Measurement occasions provided by the UTRAN - No measurement occasions are provided by the UTRAN However the parameters for $T_{identify,\ GSM}$ and $T_{measurement,\ GSM}$ are only specified when measurement occasions by the UTRAN are provided This document proposed the requirement for both these values Isolation impact analysis Would not affect implementations behaving like indicated in the CR, would affect implementation supported the correct functionality otherwise
Consequences if not approved:	⌘	Non uniform behaviour and performance for the UE in CELL FACH mode

Clauses affected:	⌘	5.5.2.1.4	
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘ TS34.121
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.

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\,GSM} = T_{identify,\,GSM} + T_{measurement,\,GSM} + T_{BCCH} + T_{RA} \text{ ms}$$

where

a) For UE requiring measurement occasions.

$T_{identify,\,GSM}$ is specified in 8.4.2.5.2.1

~~T_{SI} = The maximum repetition frequency of all relevant system information blocks that needs to be received by the UE to camp on a cell.~~

T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21]

$$T_{measurement,\,GSM} = Max\left\{8 \cdot \frac{N_{carriers}}{N_{GSM\ carrier\ RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms\right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\ carrier\ RSSI}$ is specified in 8.4.2.5.1.

b) For UE not requiring measurement occasions

$T_{identify,\,GSM}$ = 150 ms

$T_{measurement,\,GSM}$ = 480 ms

5.5.2.2 Interruption time

The requirements on interruption time below is valid when the signal quality of the serving cell is good enough to allow decoding of the FACH channel during the cell reselection.

5.5.2.2.1 FDD-FDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the preambles on the PRACH for sending the RRC CELL UPDATE message in the target cell.

1) When intra-frequency cell reselection, or inter-frequency cell reselection when the UE does not need measurement occasion to perform inter-frequency measurements, occurs the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1} = T_{IU}+20+T_{RA}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{RA} = The additional delay caused by the random access procedure.

2) When inter-frequency cell reselection occurs and the UE needs measurement occasions to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+20+T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.

3GPP TSG RAN WG4 Meeting #20 **R4-011502**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **204** ⌘ ev **-** ⌘ Current version: **5.0.0** ⌘

*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 ☐ Core Network ☐

Title:	⌘	UTRAN-GSM CELL RESELECTION
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 07 September 2001
Category:	⌘ **A**	***Release:*** ⌘ Rel-5

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

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	No requirement are specified for UE(s) which do not require measurement occasions.
Summary of change:	⌘	In section 8 Measurement in CELL FACH state is specified two cases - Measurement occasions provided by the UTRAN - No measurement occasions are provided by the UTRAN However the parameters for $T_{identify,\ GSM}$ and $T_{measurement,\ GSM}$ are only specified when measurement occasions by the UTRAN are provided This document proposed the requirement for both these values Isolation impact analysis Would not affect implementations behaving like indicated in the CR, would affect implementation supported the correct functionality otherwise
Consequences if not approved:	⌘	Non uniform behaviour and performance for the UE in CELL FACH mode

Clauses affected:	⌘	5.5.2.1.4		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	TS34.121
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.

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\,GSM} = T_{identify,\,GSM} + T_{measurement,\,GSM} + T_{BCCH} + T_{RA} \text{ ms}$$

where

a) For UE requiring measurement occasions.

$T_{identify,\,GSM}$ is specified in 8.4.2.5.2.1

~~T_{SI} = The maximum repetition frequency of all relevant system information blocks that needs to be received by the UE to camp on a cell.~~

T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21]

$$T_{measurement,\,GSM} = Max\left\{8 \cdot \frac{N_{carriers}}{N_{GSM\ carrier\ RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms\right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\ carrier\ RSSI}$ is specified in 8.4.2.5.1.

b) For UE not requiring measurement occasions

$T_{identify,\,GSM}$ = 150 ms

$T_{measurement,\,GSM}$ = 480 ms

5.5.2.2 Interruption time

The requirements on interruption time below is valid when the signal quality of the serving cell is good enough to allow decoding of the FACH channel during the cell reselection.

5.5.2.2.1 FDD-FDD cell reselection

The interruption time, i.e. the time between the last TTI the UE monitors the FACH channel on the serving cell and the time the UE starts transmit the preambles on the PRACH for sending the RRC CELL UPDATE message in the target cell.

1) When intra-frequency cell reselection, or inter-frequency cell reselection when the UE does not need measurement occasion to perform inter-frequency measurements, occurs the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1} = T_{IU}+20+T_{RA}$ ms

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

T_{RA} = The additional delay caused by the random access procedure.

2) When inter-frequency cell reselection occurs and the UE needs measurement occasions to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+20+T_{SI}+T_{RA}$ ms

where

T_{SI}= the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331.