TSG RAN Meeting #14 Kyoto, Japan, 11 - 14 December 2001

RP-010782

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	Α	Rel-4	4.2.0	4.3.0
R4-011532	25.133	189	S-criteria evaluation in CELL_FACH state	Α	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	Α	Rel-4	4.2.0	4.3.0
R4-011534	25.133	192	Correction of random access requirements and test case	Α	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	Α	Rel-4	4.2.0	4.3.0
R4-011536	25.133	195	Correction of RRC connection re-establishment test case	Α	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	Α	Rel-4	4.2.0	4.3.0
R4-011523	25.133	198	Correction of reference for UTRAN SIRerror measurement	Α	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	Α	Rel-4	4.2.0	4.3.0
R4-011538	25.133	201	FDD/FDD hard handover test cases	Α	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	Α	Rel-4	4.2.0	4.3.0
R4-011502	25.133	204	UTRAN GSM reselection	Α	Rel-5	5.0.0	5.1.0

REL-5 (Release 5)

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be found in 3GPP TR 21.900.

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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 Scritera is not fulfilled has been added.

In CELL_FACH the averaging period of the measurements used in the cell reselection evaluation can be controlled by using the Treselection parameter. For Scritera 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.

Other specs affected:	Other core specifications Test specifications O&M Specifications		¥ 34.121			
Other comments:	æ					

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 \$\mathbb{X}\$ 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 ehaptersection 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

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

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

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

where

 $T_{\text{Measurement_Period Intra}} = Specified in 8.4.2.2.2.$

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

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

.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

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

where

 $T_{\text{Measurement inter}}$ = 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

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

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

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

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

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 $T_{interrupt2}$

$$T_{interrupt2} = T_{IU} + 20 + T_{sI} + T_{RA} \text{ ms}$$

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 Tinterrupt, TDD

$$T_{interrupt,TDD} = 100 + T_{si} + T_{RA} \text{ ms}$$

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

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

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:

$$\underline{T_{S-criteria}} = 5 \times T_{Measurement_Period\ Intra} \underline{ms}$$

$$\underline{where}$$

T_{Measurement Period Intra} = Specified in 8.4.2.2.2.

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> A requirement for the maximum time it shall take for the UE to detect that the Scritera is not fulfilled has been added.

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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: 第 5.5.2

Other specs affected:	ж	Other core specifications # Test specifications O&M Specifications	34.121
			
Other comments:	æ	Corresponding R99 CR in Tdoc R4	-011378.

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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

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

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

$$T_{\rm reselection,\,intra} = T_{\rm Measurement_Period\,Intra} + T_{\rm IU} + 20 + T_{\rm SI} + T_{\rm RA} \ \, {\rm ms}$$

where

 $T_{\text{Measurement_Period Intra}} = Specified in 8.4.2.2.2.$

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

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

.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

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

where

 $T_{\text{Measurement inter}}$ = 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

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

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

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

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

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 $T_{interrupt2}$

$$T_{interrupt2} = T_{IU} + 20 + T_{sI} + T_{RA} \text{ ms}$$

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 Tinterrupt, TDD

$$T_{interrupt,TDD} = 100 + T_{si} + T_{RA} \text{ ms}$$

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

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

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:

$$\underline{T_{S-criteria}} = 5 \times T_{Measurement_Period\ Intra} \underline{ms}$$

$$\underline{where}$$

$$\underline{T_{Measurement_Period\ Intra}} = Specified\ in\ 8.4.2.2.2.$$

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Title:	Ж	S-criteria	evalua	ation in CE	ELL_F	AC	H sta	ate					
Source:	ж	RAN WG	4										
Work item code:	ж									Date: ₩	20	01-11-08	
Category:	¥									Release: #			
		B (add C (fun	rection, respon dition of ctional torial m	ds to a confiction feature), modification on softhe a	rection on of fe) above (n in a eatui	re)		elease	Use <u>one</u> of 2 e) R96 R97 R98 R99 REL-4 REL-5	(GSI (Rela (Rela (Rela (Rela	ollowing rei M Phase 2) ease 1996) ease 1997) ease 1999) ease 4) ease 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 Scritera is not fulfilled has been added.

In CELL_FACH the averaging period of the measurements used in the cell reselection evaluation can be controlled by using the Treselection parameter. For Scritera 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.

Other specs affected:	ж	Other core specifications # Test specifications O&M Specifications	34.121
			
Other comments:	æ	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 \$\mathbb{X}\$ 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

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

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

$$T_{\rm reselection,\,intra} = T_{\rm Measurement_Period\,Intra} + T_{\rm IU} + 20 + T_{\rm SI} + T_{\rm RA} \ \, {\rm ms}$$

where

 $T_{\text{Measurement_Period Intra}} = Specified in 8.4.2.2.2.$

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

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

.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

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

where

 $T_{\text{Measurement inter}}$ = 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

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

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

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

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

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 $T_{interrupt2}$

$$T_{interrupt2} = T_{IU} + 20 + T_{sI} + T_{RA} \text{ ms}$$

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 Tinterrupt, TDD

$$T_{interrupt,TDD} = 100 + T_{si} + T_{RA} \text{ ms}$$

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

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

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:

$$\underline{T_{S\text{-criteria}}} = 5 \times T_{\text{Measurement_Period Intra}} \underline{\text{ms}}$$

$$\underline{\text{where}}$$

$$\underline{T_{\text{Measurement_Period Intra}}} = \underline{Specified in 8.4.2.2.2.}$$

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

	CHANGE REQUEST	лт-v -4
*	25.133 CR 190 # ev - # Current version: 3.7.0 #	
For <u>HELP</u> or	using this form, see bottom of this page or look at the pop-up text over the % symbols	S.
Proposed chang	affects: # (U)SIM ME/UE Radio Access Network Core Network Core Network Core Network Core Network Radio Access Network Radio	k
Title:	Correction of random access requirements and test case	
Source:	RAN WG4	
Work item code:	Date :	
Category:	F 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. Release: Release: Release: Release 199 Release: Release 1996) Release 1997) Release 1998) Release 1999) Release 4) REL-5 (Release 5)	<i>:</i>
Reason for chan	The requirement on the UE behaviour when reaching maximum transmitt powduring random access preample power ramping is not complete.	ver
Summary of cha	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 UE output power is outside the range covered by the UE transmitted power measurement. For that case the existing requirement on output power setting the open loop power control in 25.101 section 6.4.1 applies. The requirements open loop power control in 25.101 specifies requirements on the ability of the Utransmitter to sets its output power to a specific value. Isolated Impact Analysis: The CR clarifies possible ambiguities. Would not affer implementations behaving like indicated in the CR, would affect implementation that do not behave like indicated in the CR.	for on JE
Consequences i not approved:	The requirements on UE maximum transmitted power during preample rampin will not be complete and therefore the UE may use higher power than allowed during preamble power ramping.	g
Clauses affected	第 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	X	

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked \(\mathcal{H} \) 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).

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

	CHANGE REQUEST
ж	25.133 CR 191
For <u>HELP</u> on ι	using this form, see bottom of this page or look at the pop-up text over the % symbols.
Proposed change	affects: # (U)SIM
Title:	Correction of random access requirements and test case
Source: #	RAN WG4
Work item code: ₩	Date: 第 2001-11-08
Reason for change Summary of change	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) P (editorial modification) C (the above categories can be found in 3GPP TR 21.900.
	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. <u>Isolated Impact Analysis:</u> 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:	第 6.3.2.4, 6.5, A.6.2.2.4
Other specs affected:	X Test specifications O&M Specifications O&M Specifications
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 \(\mathcal{H} \) 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).

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

	CHANGE REQUEST
æ	25.133 CR 192
For <u>HELP</u> on	using this form, see bottom of this page or look at the pop-up text over the % symbols.
Proposed change	e affects: 第 (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: 3	Date : # 2001-11-08
Reason for chang	during random access preample power ramping is not complete. 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 th 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:	第 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:	# Corresponding R00 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:

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- 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).

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

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For <u>HELP</u> o	n using	this forr	n, see botto	om of this	page or	look	at the	e pop-up tex	t over	the ₩ sy	mbols.
Proposed chang	ge affec	ts: #	(U)SIM	ME/	UE X	Rad	io Ac	cess Netwo	rk	Core No	etwork
Title:	ж Co	rrection	of RRC co	nnection	re-estab	lishm	ent te	est case			
Source:	₩ RA	N WG4									
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Consequences not approved:	if ૠ	The re	quirement i	n the test	case wi	ll no b	oe inl	ine with the	core re	equireme	nt.
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Other specs affected:	ж	X Te	ner core spo st specifica M Specifica	tions	ns #		.121				
Other comment	s: #										

How to create CRs using this form:

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- 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 $16\underline{7}$ 30 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 39<u>7</u>30 ms.

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

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

			CHA	ANGE	RE	QUE	EST	-			CR-Form-v4
*	25	.133	CR 194		¥ e≀	-	ж	Current ve	rsion:	4.2.0	ж
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Proposed chang	e affec	ts: #	(U)SIM	ME.	/UE X	Rad	dio A	ccess Netwo	ork	Core N	etwork
Title:	ж Co	rrection	of RRC co	nnection	re-esta	blishn	nent t	est case			
Source:	ж <mark>R</mark> A	N WG	1								
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Consequences in not approved:	f #	The re	quirement i	n the test	t case v	vill no	be in	line with the	core r	equireme	nt.
Clauses affected	l: #	A.6.1	2								
Other specs affected:	** **	Ot X Te	her core spest specifica	tions	ns	₩ 34	4.121				
Other comments	: X	Corre	esponding R	99 CR in	Tdoc	34-01	1381				

How to create CRs using this form:

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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 $16\underline{7}$ 30 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 39<u>7</u>30 ms.

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

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

	CHANGE REQUEST
×	25.133 CR 195 # ev - # Current version: 5.0.0 #
For <u>HELP</u> on t	using this form, see bottom of this page or look at the pop-up text over the % symbols.
Proposed change	affects: 第 (U)SIM ME/UE X Radio Access Network Core Network
Title:	Correction of RRC connection re-establishment test case
Source: #	RAN WG4
Work item code: ₩	Date: # 2001-11-02
Reason for change	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) D (editorial modification) Petailed explanations of the above categories can be found in 3GPP TR 21.900. Release 1990 Release 1996 Release 1997 Release 1997 Release 1998 Release 1998) Release 1998) Release 1999) Release 1999) Release 1999) Release 1999) Release 5)
Consequences if not approved:	# The requirement in the test case will no be inline with the core requirement.
Clauses affected:	第 A.6.1.2
Other specs affected:	X Other core specifications X Test specifications O&M Specifications
Other comments:	# Corresponding R99 CR in Tdoc R4-011381

How to create CRs using this form:

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- 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 $16\underline{7}$ 30 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 39<u>7</u>30 ms.

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

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

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Proposed change	Proposed change affects:													
Title:	Co	rrectio	n of ref	ference	for UT	RAN	SIR	error	mea	suren	nent			
Source:	RA	N WG	4											
Work item code: ₩	8									ı	Date:	200	1-10-26	
Reason for chang	Deta be fo e: 器	F (con A (cor B (add C (fun D (edi ailed expound in	rection) respondition of ctional i torial m planatio 3GPP	ds to a co f feature), modification odifications of the TR 21.90	orrection, tion of fon) e above	n in a cateo	gorie:	s can		Us e)	e <u>one</u> of 2 R96 R97 R98 R99 REL-4 REL-5	the fol (GSM (Relea (Relea (Relea (Relea (Relea	99 Ilowing re I Phase 2 ase 1996 ase 1998 ase 1999 ase 4) ase 5)	r) r) r)
Summary of change Consequences if not approved:				f referer					reme	nt wil	I not be	corre	ct.	
		Isolate	ed Imp	act Ana	lysis: N	/lodif	icatio	on is	corre	ection	of refer	ence.		
Clauses affected:	ж	9.2.3	3											
Other specs affected:	ж	Te	est spe	ore speci ecificatio ecificati	ns	ns	ж							
Other comments:	ж													

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:

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- 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 98.2.2. 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 98.2.2.

NOTE: The accuracy requirement for SIR_{error} is the same as for the SIR measurement specified in section 98.2.2. SIR_{error} is calculated from SIR and SIR_{target} , see TS 25.215.

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	CHANGE REQUEST
ж	25.133 CR 197
For <u>HELP</u> on u	using this form, see bottom of this page or look at the pop-up text over the \ symbols.
Proposed change	affects: 第 (U)SIM ME/UE Radio Access Network X Core Network
Title: #	Correction of reference for UTRAN SIRerror measurement
Source: #	RAN WG4
Work item code: ₩	Date: # 2001-11-02
Category: 第	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. Release: # Rel-4 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	e: % Incorrect reference in 25.133 section 9.2.3.
Summary of chang	The requirement for the SIRerror measurement will not be correct. Isolated Impact Analysis: Modification is correction of reference.
Consequences if not approved:	光 The requirement for the SIRerror measurement will not be correct.
Clauses affected:	第 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 \(\mathbb{H} \) 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.

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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 \$9.2.2. 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 89.2.2.

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

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	CHANGE REQUEST	orm-v4
*	25.133 CR 198	
For <u>HELP</u> on u	ring this form, see bottom of this page or look at the pop-up text over the 業 symbols	S.
Proposed change	ffects: 第 (U)SIM ME/UE Radio Access Network X Core Network	k
Title: #	Correction of reference for UTRAN SIRerror measurement	
Source: #	RAN WG4	
Work item code: ₩	Date: # 2001-11-02	
Category: अ	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. Release: # Rel-5 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 chang	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:	Contractions Test specifications O&M Specifications	
Other comments:	Corresponding R99 CR in Tdoc R4-011382	

How to create CRs using this form:

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- 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.

l

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 $\frac{\$9}{.}2.2$. 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 89.2.2.

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

3GPP TSG RAN WG4 Meeting #20

ms.

case.

R4-011420

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

	CHANGE REQUEST					
*	25.133 CR 199 # ev # Current version: 3.7.0 #					
For <u>HELP</u> on	using this form, see bottom of this page or look at the pop-up text over the X symbols.					
Proposed change affects:						
Title:	FDD/FDD hard handover test cases					
Source:	RAN WG4					
Work item code:	Date: 第 2001-11-08					
Category:	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) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900. Release: # Rel99 Use one of the following releases: (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 chang	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 char	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 " <i>D</i> _{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					

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

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:	Cother core specifications Test specifications O&M Specifications 34.121
Other comments:	x

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:

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 - 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

Para	ameter	Unit	Value	Comment
DCH parame	eters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Contro	ol		On	
Target quality	y value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbourin g cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting rai	nge	dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting de threshold	Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigg	ger	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	Unit Cell 1			Cell 2				
	Ī	T1	T2	Т3	T1	T2	T3		
CPICH_Ec/lor	dB		-10	•		-10			
PCCPCH_Ec/lor	dB		-12			-12			
SCH_Ec/lor	dB		-12			-12			
PICH_Ec/lor	dB		-15			-15			
DPCH_Ec/lor	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	-1	14		
Propagation Condition		AWGN							

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 param	eters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Conti	rol		On	
Target quali	ty value on	BLER	0.01	
Compressed	d mode		A.22 set 1	As specified in TS 25.101 section A.5.
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold no frequency	on used	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting ra	inge	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 de threshold	eactivation		0	Applicable for event 1A
Time to Trig	ger	ms	0	
Filter coeffic	ient		0	
T1		S	10	
T2		S	5	

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

Parameter	Unit	Cell 1		Ce	ell 2	
	-	T1	T1 T2		T2	
UTRA RF Channel Number		Char	Channel 1		nnel 2	
CPICH_Ec/lor	dB		10	-	10	
PCCPCH_Ec/lor	dB		12	-	12	
SCH_Ec/lor	dB		12	-12		
PICH_Ec/lor	dB		15	-15		
DPCH_Ec/lor	dB	No	te1	N/A	Note1	
OCNS		No	te 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/lo	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

A.5.2.2.2 **Test Requirements**

The UE shall start to transmit the UL DPCCH to Cell 2 less than 10090 ms from the beginning of time period T2.

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

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

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Proposed	l change	affec	ts: ૠ	(U)	SIM	ME	UE 2	K F	Radi	o Ac	ces	s Net	work		Cor	e Ne	twork
Title:	Ж	FD	D/FDD	hard	handove	er test o	cases										
Source:	ж	R/	N WG	4													
Work iten	n code: ₩											Date	e: #	200)1-11	-15	
Category	<i>:</i> #	Use	F (corr A (corr B (add C (fund D (edit ailed exp	rection) respon lition of ctional torial m blanatic	owing cat) ds to a co f feature), modificatio ons of the TR 21.90	correction tion of fe on) above	n in an eature)		lease	Ü	lease lse <u>on</u> 2 R96 R97 R98 R99 REL	<u>e</u> of t	(GSN (Rele (Rele (Rele (Rele (Rele	I-4 Illowin I Phase Pase 1 Pase 1 Pase 4 Pase 5	se 2) 996) 997) 998) 999)	ases:
Reason fo	or chang	e: ¥	able to	crea	DD hard te the co e require	mplete	test										
Summary	of chan	ge: ₩			ed when						nfig	uratio	n m	essa	ge sh	ould	be sent
			of a co	ertain f	arts tran time inst f that tim D _{handover}	ance, t e insta	he me	essa The o	ge is gene	not eral r	yet equi	availa reme	able ents o	for th	ne UE ction	at th 5.2.2	ne 1.1 says

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 $T_{IU}+40+50*1$,

	whereT _{IU} =10ms.					
Consequences if	The test cases are not fully aligned with the general performance requirements					
not approved:	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	Step 1 When core specifications Here is a second contained to the second					
affected:	Test specifications O&M Specifications 34.121					
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Other comments:	$oldsymbol{lpha}$					

How to create CRs using this form:

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 - 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

Para	meter	Unit	Value	Comment
DCH paramete	ers		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Contro			On	
Target quality DTCH	value on	BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbourin g cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range	ge	dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
W			1	Applicable for event 1A and 1B
Reporting dea threshold	Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigge	Time to Trigger		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	Unit Cell 1			Cell 2			
		T1	T2	T3	T1	T2	T3	
CPICH_Ec/lor	dB		-10			-10		
PCCPCH_Ec/lor	dB		-12			-12		
SCH_Ec/lor	dB		-12			-12		
PICH_Ec/lor	dB		-15			-15		
DPCH_Ec/lor	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	6.9	97	-Infinity	5.	97	
I_{oc}	dBm/ 3.84 MHz			-7	70			
CPICH_Ec/lo	dB		-13		-Infinity	-1	4	
Propagation Condition		AWGN						

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I...

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

Para	meter	Unit	Value	Comment
DCH param	eters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Cont	rol		On	
Target quali DTCH	ty value on	BLER	0.01	
Compressed	d mode		A.22 set 1	As specified in TS 25.101 section A.5.
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold n frequency	on used	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting ra	inge	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 de threshold	eactivation		0	Applicable for event 1A
Time to Trig	ger	ms	0	
Filter coeffic	ient		0	
T1		S	10	
T2		S	5	

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

Parameter	Unit	Cell 1		Ce	ell 2		
		T1	T2	T1	T2		
UTRA RF Channel Number		Chan	Channel 1		nnel 2		
CPICH_Ec/lor	dB	-1	0		10		
PCCPCH_Ec/lor	dB	-1	2		12		
SCH_Ec/lor	dB	-1	2		-12		
PICH_Ec/lor	dB	-1	5	-15			
DPCH_Ec/lor	dB	No	te1	N/A	Note1		
OCNS		Not	e 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/lo	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

A.5.2.2.2 **Test Requirements**

The UE shall start to transmit the UL DPCCH to Cell 2 less than 10090 ms from the beginning of time period T2.

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

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

	CR-Form-v4 CHANGE REQUEST							
*	25.133 CR 201 # ev # C	Current version: 5.0.0 **						
	using this form, see bottom of this page or look at the p							
Proposed change a	affects: 第 (U)SIM ME/UE X Radio Acce	ess Network Core Network						
Title: %	FDD/FDD hard handover test cases							
Source: #	RAN WG4							
Work item code: ∺		<i>Date:</i> # 2001-11-15						
Category:	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.	Release: # Rel-5 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	e: # The FDD/FDD hard handover test cases are an able to create the complete test cases so that the performance requirements.							
Summary of chang	ge: # 1) It is clarified when a Physical Channel reconf in the FDD/FDD hard handover test cases.	figuration message should be sent						
	If UTRAN starts transmitting a Physical channel of a certain time instance, the message is not you beginning of that time instance. The general rec	et available for the UE at the						

as follows " Dhandover 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

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

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

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,

	whereT _{IU} =10ms.					
Consequences if	The test cases are not fully aligned with the general performance requirements					
not approved:	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	Step 1 When core specifications Here is a second contained to the second					
affected:	Test specifications O&M Specifications 34.121					
	Odivi Opcomoditorio					
Other comments:	$oldsymbol{lpha}$					

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.
 - 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 Contro			On	
Target quality value on DTCH		BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbourin g cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range	Reporting range		3	Applicable for event 1A and 1B
Hysteresis	Hysteresis		0	
W	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/lor	dB		-10			-10	
PCCPCH_Ec/lor	dB	-12			-12		
SCH_Ec/lor	dB	-12			-12		
PICH_Ec/lor	dB	-15				-15	
DPCH_Ec/lor	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	6.9	97	-Infinity	5.	97
I_{oc}	dBm/ 3.84 MHz	-70					
CPICH_Ec/lo	dB	-13			-Infinity	-1	4
Propagation Condition		AWGN					

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I...

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 Cont	rol		On	
Target quality value on DTCH		BLER	0.01	
Compressed	d mode		A.22 set 1	As specified in TS 25.101 section A.5.
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold n frequency	on used	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting ra	ange	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	

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

Parameter	Unit	Cell 1		Ce	ell 2
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2	
CPICH_Ec/lor	dB	-1	0	-10	
PCCPCH_Ec/lor	dB	-12		-12	
SCH_Ec/lor	dB	-12		-12	
PICH_Ec/lor	dB	-1	5	-15	
DPCH_Ec/lor	dB	Note1		N/A	Note1
OCNS		Not	e 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/lo	dB	-13	-13	-14	-14
Propagation Condition			AV	VGN	

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

A.5.2.2.2 **Test Requirements**

The UE shall start to transmit the UL DPCCH to Cell 2 less than 10090 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

CHANGE REQUEST					
*	25.133 CR 202 ** ev - ** Current version: 3.7.0 **				
For <u>HELP</u> on usin	ng this form, see bottom of this page or look at the pop-up text over the % symbols.				
Proposed change aff	fects: 第 (U)SIM ME/UE X Radio Access Network Core Network				
Title: 第 □	UTRAN-GSM CELL RESELECTION				
Source: #	RAN WG4				
Work item code: ₩	Date: 8 07 September 2001				
D	Release: # Rel99 Ise 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) Release: # Rel99 Use one of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Retailed explanations of the above categories can efound in 3GPP TR 21.900.				
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 $T_{\underline{\text{Identify, GSM}}}$ and $T_{\underline{\text{measurement, GSM}}}$ are only specified when measurement occasions by the UTRAN are provided This document proposed the requirement for both these values				
	Isolation impact analyisis 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:	第 5.5.2.1.4				
Other specs affected:	# Other core specifications # Test specifications O&M Specifications				
Other comments:	署				

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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

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

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.

 \underline{T}_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21]

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

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

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

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

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}

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

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}

 $T_{interrupt2} = T_{IU} + 20 + T_{sI} + T_{RA} \text{ ms}$

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

CHANGE REQUEST					
* 2	25.133 CR 203 # ev - # Current version: 4.2.0 #				
For <u>HELP</u> on usir	ng this form, see bottom of this page or look at the pop-up text over the % symbols.				
Proposed change aff	fects: 第 (U)SIM ME/UE X Radio Access Network Core Network				
Title: 第 1	UTRAN-GSM CELL RESELECTION				
Source: #	RAN WG4				
Work item code: 第	Date: # 07 September 2001				
D	Release: # Rel-4 Ise 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) Release: # Rel-4 Use one of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Retailed explanations of the above categories can efound in 3GPP TR 21.900.				
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 $T_{\underline{\text{Identify. GSM}}}$ and $T_{\underline{\text{measurement, GSM}}}$ are only specified when measurement occasions by the UTRAN are provided This document proposed the requirement for both these values				
	Isolation impact analyisis 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				
Other comments:	%				

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- 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

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

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.

 \underline{T}_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21]

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

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

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

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

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}

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

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}

 $T_{interrupt2} = T_{IU} + 20 + T_{sI} + T_{RA} \text{ ms}$

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	5.133 CR 204
For <u>HELP</u> on using	this form, see bottom of this page or look at the pop-up text over the ₩ symbols.
Proposed change affect	cts: 第 (U)SIM ME/UE X Radio Access Network Core Network
Title: 第 UT	TRAN-GSM CELL RESELECTION
Source: # RA	AN WG4
Work item code: ₩	Date: 2001 Date: 201 Date: 202 Date: 203 Date: 205 Date: 206 Date: 207 Date: 208 Dat
Deta	Release: \$\mathbb{R} \ \text{Rel-5} \ \text{One} \ of the following categories: Use \ \ \text{one} \ of the following releases: (GSM Phase 2) A \ (corresponds to a correction in an earlier release) R96 (Release 1996) B \ (addition of feature), R97 (Release 1997) C \ (functional modification of feature) R98 (Release 1998) P \ (editorial modification) R99 (Release 1999) (Release 1999) \text{ailed explanations of the above categories can of the above categories can of the lease 5} REL-5 (Release 5) REL-5 (Release 5) \qquad \qquad \qquad
Reason for change: ೫	No requirement are specified for UE(s) which do not require measurement
Treaten for enamger	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 $T_{\underline{\text{Identify. GSM}}}$ and $T_{\underline{\text{measurement, GSM}}}$ are only specified when measurement occasions by the UTRAN are provided This document proposed the requirement for both these values
	Isolation impact analyisis Would not affect implementations behaving like indicated in the CR, would affect implementation supported the correct functionality otherwise
Consequences if 第 not approved:	Non uniform behaviour and performance for the UE in CELL_FACH mode
Clauses affected: #	5.5.2.1.4
Other specs # affected:	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

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

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.

 \underline{T}_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21]

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

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

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

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

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}

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

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}

 $T_{interrupt2} = T_{IU} + 20 + T_{sI} + T_{RA} \text{ ms}$

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.