RP-030208

TSG RAN Meeting #20 Hämeenlinna, Finland, 3 - 6 June, 2003

TitleCRs (R'99 and Rel-4/Rel-5 Category A) to TS 25.123 on "Applicability of Timer
T-reselection for 2G cell reselection"SourceTSG RAN WG4Agenda Item7.4.3

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-020408	25.123	299		F	Rel-4	4.8.0	Applicability of Timer T-reselection for 2G cell reselection	LCRTDD-RF
R4-020409	25.123	300		Α	Rel-5	5.4.0	Applicability of Timer T-reselection for 2G cell reselection	LCRTDD-RF
R4-020585	25.123	305		F	R99	3.12.0	Applicability of Timer T-reselection for 2G cell reselection	TEI
R4-020586	25.123	306		Α	Rel-4	4.8.0	Applicability of Timer T-reselection for 2G cell reselection	TEI
R4-020587	25.123	307		Α	Rel-5	5.4.0	Applicability of Timer T-reselection for 2G cell reselection	TEI

R4-030408

CHANGE REQUEST						
[¥] 25	.123 CR 299	жrev	ж	Current version	on: 4.8.0	ж
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 affec	t s: UICC apps ೫	ME 🗙 F	Radio A	ccess Network	Core Ne	etwork
Title: ೫ Ap	plicability of Timer T-reseled	tion for 2G	cell res	election		
Source: % RA	NWG4					
Work item code: % LC	RTDD-RF			Date: ೫	27/05/2003	
Category: % F Use Deta be fo	one of the following categories F (correction) A (corresponds to a correction B (addition of feature), C (functional modification of fe D (editorial modification) hiled explanations of the above bund in 3GPP <u>TR 21.900</u> .	: n in an earlie eature) categories c	<i>r release</i> an	Release: % Use <u>one</u> of t 2 (R96 (R97 (R98 (R99 (Rel-4 (Rel-5 (Rel-6 (Rel-4 he following relé (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	eases:
Reason for change: ೫	The timer T reselection is duration of the estimation used for a cell reselection This Cr proposes the exte	used, in the of the cell r towards a 2	current eselection G cell.	version of this on criteria, towa	specification, fo ards a 3G cell an per for the 2G c	or the nd not
	reselection in a mixed 20	bid a biased	situation nment	while the UE i	s considering co	ell
	This correction is in line In all cases, the UE shall met:	with the 25.3	304. The	specification st	tates that: lowing conditio	ns are
	- the new cell is be Treselection.	tter ranked t	han the s	serving cell dur	ing a time inter	val
	- more than 1 second cell.	nd has elapse	ed since	the UE camped	l on the current	serving
	The first condition of the 2 25.123.	5.304 is mi	ssing fo	or the 2G cell r	eselection cas	se in
Summary of change: ೫	- Addition of the sa cell reselection ca GSM case.	ame sentence ase in sub 4.2	e already 2.2.5.2 ir	v used for 3G ce n order to introc	ell reselection, f luce T reselection	or the 2G on for
	- As the wording " made to define th	ranked" is us is procedure	sed into in sub 4	the 25.123, a re .2.2.6.2	terence to the 2	5.304 is

	Isolated impact: This CR has an isolated impact, as this is a correction of a misalignment between specifications.
Consequences if not approved:	* This could lead to a biased situation while the UE is considering cell reselection in a mixed 2G / 3G environment. The current situation could lead to a unfair comparison between technologies from a radio criteria evaluation point of view.
Clauses affected:	¥ 4.2.2.5.2, 4.2.2.6.2
Other specs affected:	Y N % X Other core specifications % X Test specifications X O&M Specifications
Other comments:	# Equivalent CRs in other Releases: CR300 cat. A to 25.123 v5.4.0

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

4.2.2 Requirements

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

4.2.2.1.1 3.84 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S_{rxlev} defined in [18] for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$ (see table 4.1).

If the UE has evaluated in N_{serv} successive measurements that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

4.2.2.1.2 1.28 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S defined in [18] for the serving cell at least every DRX cycle. The UE shall filter the PCCPCH RSCP level of the serving cell using at least 2 measurements, which are taken so that the time difference between the first measurement and the last measurement used for filtering is at least $T_{measureNTDD}/2$ (see table 4.1A).

If the UE has evaluated in N_{serv} consecutive DRX cycles that the serving cell does not fulfil the cell selection criterion S the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

After this 12 s period a UE in Cell_PCH or URA_PCH is considered to be "out of service area" and shall perform actions according to [16].

4.2.2.2 Measurement of intra-frequency cells

4.2.2.2.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every $T_{measureTDD}$ (see table 4.1) for intra-frequency cells that are identified and measured according to the measurement rules. $T_{measureTDD}$ is defined in Table 4.1. The UE shall filter PCCPCH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within $T_{evaluateTDD}$ (see table 4.1), from the moment the intra-frequency cell became at least 2 dB better ranked than the current serving cell, provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the intra frequency cell is better ranked than the serving cell, the UE shall evaluate this intra frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.2.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every $T_{measureNTDD}$ (see table 4.1A) for intra-frequency cells that are identified and measured according to the measurement rules. $T_{measureNTDD}$ is defined in Table 4.1A. The UE shall filter

PCCPCH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureNTDD}/2$.

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within $T_{evaluateNTDD}$ (see table 4.1A), from the moment the intra-frequency cell became at least 2 dB better ranked than the current serving cell, provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the intra frequency cell is better ranked than the serving cell, the UE shall evaluate this intra frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3 Measurement of inter-frequency TDD cells

4.2.2.3.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every ($N_{carrier}$ -1) * $T_{measureTDD}$ (see table 4.1) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for TDD cells. The UE shall filter PCCPCH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateTDD}$ from the moment the interfrequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that interfrequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every $(N_{carrier}-1) * T_{measureNTDD}$ (see table 4.1A) for inter-frequency 1.28 Mcps TDD OPTION cells that are identified and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for 1.28 Mcps TDD OPTION cells. The UE shall filter PCCPCH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureNTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateNTDD}$ from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3A 1.28 Mcps TDD to 3.84 Mcps TDD cell re-selection

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The ranking of the low and high chip rate TDD cells shall be made according to the cell reselection criteria specified in [18].

The UE shall measure PCCPCH RSCP at least every $N_{TDDcarrier} * T_{measureTDD}$ (see table 4.1A) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for 3.84 Mcps TDD cells. The UE shall filter PCCPCH RSCP measurements of each measured high chip rate TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that a high chip rate TDD cell has become better ranked than the serving cell within $N_{TDDcarrier} * T_{evaluateTDD}$ from the moment the inter-frequency cell became at least 3 better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency 3.84Mcps TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency 3.84Mcps TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3B 3.84 Mcps TDD to 1.28 Mcps TDD cell re-selection

This requirement in this section only applies to UEs supporting both 3.84 Mcps TDD and 1.28Mcps TDD.

The UE shall measure PCCPCH RSCP at least every $N_{carrierNTDD} * T_{measureNTDD}$ (see table 4.1A) for inter-frequency 1.28 Mcps TDD OPTION cells that are identified and measured according to the measurement rules. The parameter $N_{carrierNTDD}$ is the number of carriers used for 1.28 Mcps TDD cells. The UE shall filter PCCPCH RSCP measurements of each measured 1.28 Mcps TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureNTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that a 1.28 Mcps TDD cell has become better ranked than the serving cell within $N_{carrierNTDD} * T_{evaluateNTDD}$ from the moment the inter-frequency cell became at least 3 better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency 1.28 Mcps TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency 1.28 Mcps TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.4 Measurement of inter-frequency FDD cells

4.2.2.4.1 3.84 Mcps option

The UE shall measure the CPICH RSCP and CPICH Ec/Io of each FDD neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureFDD}$ (see table 4.1). The UE shall filter CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$...

The filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within $N_{carrierFDD} * T_{evaluateFDD}$ from the moment the interfrequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that interfrequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. The parameter $N_{carrierFDD}$ is the number of carriers used for FDD cells.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in [18]. If FDD cell has been ranked as the best cell and IE cell_selection_and_reselection-quality_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell reselection.

4.2.2.4.2 1.28 Mcps option

This requirement only applies to 1.28 Mcps UEs supporting both 1.28 Mcps TDD OPTION and FDD.

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The UE shall measure the CPICH RSCP and CPICH Ec/Io at least every $N_{carrierFDD} * T_{measureFDD}$ (see table 4.1A) for inter-frequency FDD cells that are identified and measured according to the measurement rules. The UE shall filter CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$.

CPICH RSCP is used as basic measurement quantity for cell ranking, the filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already identified inter-frequency cell has become better ranked than the serving cell within $N_{carrierFDD} * T_{evaluateFDD}$ from the moment the inter-frequency cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. The parameter $N_{carrierFDD}$ is the number of carriers used for FDD cells.

If Treselection timer has a non zero value and the inter-frequency FDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency FDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell_selection_and_reselection-quality_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

4.2.2.5 Measurement of inter-RAT GSM cells

4.2.2.5.1 3.84 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], The UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

4.2.2.5.2 1.28 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1A). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.6 Evaluation of cell reselection criteria

4.2.2.6.1 3.84 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least once every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a better ranked suitable cell unless less than 1 second has elapsed from the moment the UE started camping on the current serving cell.

4.2.2.6.2 1.28 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least every DRX cycle.

Cell reselection shall take place immediately after the UE has found a better ranked suitable cell unless the UE has made cell reselection within the last 1 second.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

R4-030409

CHANGE REQUEST					
[#] 25	.123 CR 300	ж rev	Current vers	^{ion:} 5.4.0 [#]	
For <u>HELP</u> on using	this form, see bottom of this	s page or look at	the pop-up text	over the X symbols.	
Proposed change affec	: ts: UICC apps ೫	ME X Radio	o Access Networ	k Core Network	
Title: % Ap	plicability of Timer T-reseled	ction for 2G cell	reselection		
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4.2.2 Requirements

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If the UE has evaluated in N_{serv} successive measurements that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

4.2.2.1.2 1.28 Mcps TDD option

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If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in [18].

After this 12 s period a UE in Cell_PCH or URA_PCH is considered to be "out of service area" and shall perform actions according to [16].

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4.2.2.2.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every $T_{measureTDD}$ (see table 4.1) for intra-frequency cells that are identified and measured according to the measurement rules. $T_{measureTDD}$ is defined in Table 4.1. The UE shall filter PCCPCH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within $T_{evaluateTDD}$ (see table 4.1), from the moment the intra-frequency cell became at least 2 dB better ranked than the current serving cell, provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the intra frequency cell is better ranked than the serving cell, the UE shall evaluate this intra frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.2.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every $T_{measureNTDD}$ (see table 4.1A) for intra-frequency cells that are identified and measured according to the measurement rules. $T_{measureNTDD}$ is defined in Table 4.1A. The UE shall filter

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If Treselection timer has a non zero value and the intra frequency cell is better ranked than the serving cell, the UE shall evaluate this intra frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3 Measurement of inter-frequency TDD cells

4.2.2.3.1 3.84 Mcps option

The UE shall measure PCCPCH RSCP at least every ($N_{carrier}$ -1) * $T_{measureTDD}$ (see table 4.1) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for TDD cells. The UE shall filter PCCPCH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateTDD}$ from the moment the interfrequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that interfrequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every $(N_{carrier}-1) * T_{measureNTDD}$ (see table 4.1A) for inter-frequency 1.28 Mcps TDD OPTION cells that are identified and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for 1.28 Mcps TDD OPTION cells. The UE shall filter PCCPCH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureNTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateNTDD}$ from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3A 1.28 Mcps TDD to 3.84 Mcps TDD cell re-selection

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The ranking of the low and high chip rate TDD cells shall be made according to the cell reselection criteria specified in [18].

The UE shall measure PCCPCH RSCP at least every $N_{TDDcarrier} * T_{measureTDD}$ (see table 4.1A) for inter-frequency cells that are identified and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for 3.84 Mcps TDD cells. The UE shall filter PCCPCH RSCP measurements of each measured high chip rate TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that a high chip rate TDD cell has become better ranked than the serving cell within $N_{TDDcarrier} * T_{evaluateTDD}$ from the moment the inter-frequency cell became at least 3 better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency 3.84Mcps TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency 3.84Mcps TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3B 3.84 Mcps TDD to 1.28 Mcps TDD cell re-selection

This requirement in this section only applies to UEs supporting both 3.84 Mcps TDD and 1.28Mcps TDD.

The UE shall measure PCCPCH RSCP at least every $N_{carrierNTDD} * T_{measureNTDD}$ (see table 4.1A) for inter-frequency 1.28 Mcps TDD OPTION cells that are identified and measured according to the measurement rules. The parameter $N_{carrierNTDD}$ is the number of carriers used for 1.28 Mcps TDD cells. The UE shall filter PCCPCH RSCP measurements of each measured 1.28 Mcps TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureNTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that a 1.28 Mcps TDD cell has become better ranked than the serving cell within $N_{carrierNTDD} * T_{evaluateNTDD}$ from the moment the inter-frequency cell became at least 3 better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency 1.28 Mcps TDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency 1.28 Mcps TDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.4 Measurement of inter-frequency FDD cells

4.2.2.4.1 3.84 Mcps option

The UE shall measure the CPICH RSCP and CPICH Ec/Io of each FDD neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureFDD}$ (see table 4.1). The UE shall filter CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$...

The filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already identified interfrequency cell has become better ranked than the serving cell within $N_{carrierFDD} * T_{evaluateFDD}$ from the moment the interfrequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that interfrequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. The parameter $N_{carrierFDD}$ is the number of carriers used for FDD cells.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in [18]. If FDD cell has been ranked as the best cell and IE cell_selection_and_reselection-quality_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell reselection.

4.2.2.4.2 1.28 Mcps option

This requirement only applies to 1.28 Mcps UEs supporting both 1.28 Mcps TDD OPTION and FDD.

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The UE shall measure the CPICH RSCP and CPICH Ec/Io at least every $N_{carrierFDD} * T_{measureFDD}$ (see table 4.1A) for inter-frequency FDD cells that are identified and measured according to the measurement rules. The UE shall filter CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$.

CPICH RSCP is used as basic measurement quantity for cell ranking, the filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already identified inter-frequency cell has become better ranked than the serving cell within $N_{carrierFDD} * T_{evaluateFDD}$ from the moment the inter-frequency cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. The parameter $N_{carrierFDD}$ is the number of carriers used for FDD cells.

If Treselection timer has a non zero value and the inter-frequency FDD cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency FDD cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell_selection_and_reselection-quality_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

4.2.2.5 Measurement of inter-RAT GSM cells

4.2.2.5.1 3.84 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], The UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

4.2.2.5.2 1.28 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1A). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.6 Evaluation of cell reselection criteria

4.2.2.6.1 3.84 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least once every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a better ranked suitable cell unless less than 1 second has elapsed from the moment the UE started camping on the current serving cell.

4.2.2.6.2 1.28 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least every DRX cycle.

Cell reselection shall take place immediately after the UE has found a better ranked suitable cell unless the UE has made cell reselection within the last 1 second.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

CR-Form-v7 CHANGE REQUEST						
[#] 25	5.123 CR <mark>305</mark>	۶ rev	Current vers	^{ion:} 3.12.0 [#]		
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 affec	cts: UICC apps #	ME <mark>X</mark> Radic	Access Networ	k Core Network		
Title: % Ap	plicability of Timer T-reseled	tion for 2G cell	reselection			
Source: % RA	AN WG4					
Work item code: % TE	El		Date: ೫	27/05/2003		
Category: % F Use Deta be fo	 <u>one</u> of the following categories <i>F</i> (correction) <i>A</i> (corresponds to a correction <i>B</i> (addition of feature), <i>C</i> (functional modification of feature) <i>D</i> (editorial modification) ailed explanations of the above ound in 3GPP <u>TR 21.900</u>. 	:: n in an earlier rele eature) categories can	Release: % Use <u>one</u> of 2 ase) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	R99 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)		
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	Isolated impact: This CR has an isolated impact, as this is a correction of a misalignment between specifications.
Consequences if not approved:	* This could lead to a biased situation while the UE is considering cell reselection in a mixed 2G / 3G environment. The current situation could lead to a unfair comparison between technologies from a radio criteria evaluation point of view.
Clauses affected:	¥ 4.2.2.5, 4.2.2.6
Other specs affected:	Y N % X Other core specifications % X Test specifications X O&M Specifications
Other comments:	Equivalent CRs in other Releases: CR306 cat. A to 25.123 v4.8.0, CR307 cat. A to 25.123 v5.4.0

- 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

4.2.2.5 Measurement of inter-RAT GSM cells

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.6 Evaluation of cell reselection criteria

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least once every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a better ranked suitable cell, unless less than 1 second has elapsed from the moment the UE started camping on the current serving cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

CR-Form-v7 CHANGE REQUEST						
[#] 25	5.123 CR 306	۶ srev	Current versi	on: 4.8.0 [#]		
For <u>HELP</u> on using	this form, see bottom of this	page or look at	the pop-up text of	over the ¥ symbols.		
Proposed change affec	c ts: UICC apps ೫ <mark></mark>	ME X Radio	o Access Network	Core Network		
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Source: % RA	AN WG4					
Work item code: % TE	3		Date: ೫	27/05/2003		
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	Isolated impact: This CR has an isolated impact, as this is a correction of a misalignment
	between specifications.
Consequences if not approved:	* This could lead to a biased situation while the UE is considering cell reselection in a mixed 2G / 3G environment. The current situation could lead to a unfair comparison between technologies from a radio criteria evaluation point of view.
Clauses affected:	# 4.2.2.5.1, 4.2.2.6.1
Other specs affected:	Y N % X Other core specifications % X Test specifications X O&M Specifications
Other comments:	Equivalent CRs in other Releases: CR305 cat. F to 25.123 v3.12.0, CR307 cat. A to 25.123 v5.4.0

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
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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.

4.2.2.5 Measurement of inter-RAT GSM cells

4.2.2.5.1 3.84 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], The UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.5.2 1.28 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1A). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

4.2.2.6 Evaluation of cell reselection criteria

4.2.2.6.1 3.84 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least once every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a better ranked suitable cell unless less than 1 second has elapsed from the moment the UE started camping on the current serving cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

4.2.2.6.2 1.28 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least every DRX cycle.

Cell reselection shall take place immediately after the UE has found a better ranked suitable cell unless the UE has made cell reselection within the last 1 second.

R4-030587

CR-Form-v7 CHANGE REQUEST						
^ж 25	.123 CR 307	жrev	ж	Current versior	^{1:} 5.4.0	ж
For HELP on using this form, see bottom of this page or look at the pop-up text over the X symbols.						
Proposed change affec	e ts: UICC apps ೫ <mark></mark>	ME X Ra	adio Ac	ccess Network	Core Ne	etwork
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Summary of change: ೫	 Addition of the scell reselection of GSM case. As the wording fmade to define the scele of the s	ame sentence ase in sub 4.2. 'ranked" is use his procedure i	already 2.5.2 in ed into t in sub 4.	used for 3G cell order to introdu he 25.133, a refe .2.2.6.2	reselection, for ce T reselection erence to the 2	or the 2G on for 5.304 is

	Isolated impact: This CR has an isolated impact, as this is a correction of a misalignment between specifications
Consequences if	This could lead to a biased situation while the LIE is considering cell reselection
not approved:	in a mixed 2G / 3G environment. The current situation could lead to a unfair comparison between technologies from a radio criteria evaluation point of view.
Clauses affected:	# 4.2.2.5.1, 4.2.2.6.1
Other specs affected:	Y N % X Other core specifications % X Test specifications X O&M Specifications
Other comments:	Equivalent CRs in other Releases: CR305 cat. F to 25.123 v3.12.0, CR306 cat. A to 25.123 v4.8.0

- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
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4.2.2.5 Measurement of inter-RAT GSM cells

4.2.2.5.1 3.84 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], The UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

If Treselection timer has a non zero value and the inter-RAT GSM cell is better ranked than the serving cell, the UE shall evaluate this inter-RAT GSM cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.5.2 1.28 Mcps option

The UE shall measure the signal level of the GSM BCCH carrier of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in [18], at least every $T_{measureGSM}$ (see table 4.1A). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

If GSM measurements are required by the measurement rules in [18], the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in [18]. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

4.2.2.6 Evaluation of cell reselection criteria

4.2.2.6.1 3.84 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least once every DRX cycle.

UE shall perform cell reselection immediately after the UE has found a better ranked suitable cell unless less than 1 second has elapsed from the moment the UE started camping on the current serving cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304.

4.2.2.6.2 1.28 Mcps option

The UE shall evaluate the cell re-selection criteria defined in [18] for the cells, which have new measurement results available, at least every DRX cycle.

Cell reselection shall take place immediately after the UE has found a better ranked suitable cell unless the UE has made cell reselection within the last 1 second.