## **RP-020480**

## TSG RAN Meeting #17 Biarritz, France, 3 - 6 September, 2002

# TitleCRs (Rel-4 and Rel-5 Category A) to TS 25.123 (2)SourceTSG RAN WG4Agenda Item7.4.4

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-021180	25.123	269		F	Rel-4	4.5.0	Correction to Test Case for Event 1G triggered reporting of neighbours in AWGN propagation condition for LCR TDD option	LCRTDD-RF
R4-021181	25.123	270		A	Rel-5	5.1.0	Correction to Test Case for Event 1G triggered reporting of neighbours in AWGN propagation condition for LCR TDD option	LCRTDD-RF
R4-021182	25.123	271		F	Rel-4	4.5.0	Correction to RX Timing Deviation for LCR TDD option	LCRTDD-RF
R4-021183	25.123	272		Α	Rel-5	5.1.0	Correction to RX Timing Deviation for LCR TDD option	LCRTDD-RF
R4-021184	25.123	273		F	Rel-4	4.5.0	Correction to the intra frequency measurements for LCR TDD option	LCRTDD-RF
R4-021185	25.123	274		A	Rel-5	5.1.0	Correction to the intra frequency measurements for LCR TDD option	LCRTDD-RF
R4-021186	25.123	275		F	Rel-4	4.5.0	Correction to section 10	LCRTDD-RF
R4-021187	25.123	276		А	Rel-5	5.1.0	Correction to section 10	LCRTDD-RF
R4-021229	25.123	277		F	Rel-4	4.5.0	TDD inter-frequency measurement capability	LCRTDD-RF
R4-021230	25.123	278		А	Rel-5	5.1.0	TDD inter-frequency measurement capability	LCRTDD-RF

## R4-021180

Helsinki, Finland 12 - 16 August 2002

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Consequences if **#** Critical measurement and reporting requirements for Handover preparation in not approved: CELL\_DCH state not tested for.

Isolated Impact Analysis: This CR introduces a test for an already existing requirement, UE measurement procedures in CELL\_DCH state.

Clauses affected:	ж	Α	.8.1	.1		
		Υ	Ν			
Other specs	ж		Χ	Other core specifications	ж	
Affected:		Χ		Test specifications		34.122
			Χ	O&M Specifications		

Other comments:	ж	No such test currently exists in TS34.122
		Equivalent CRs in other Releases: CR270 cat. A to 25.123 v5.1.0

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Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <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.

## A.8 UE Measurements Procedures

## A.8.1 TDD intra frequency measurements

## A.8.1.1 Event 1G triggered reporting in AWGN propagation conditions

## A.8.1.1.1 Test Purpose and Environment

### A.8.1.1.1.1 3.84 Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of events. This test will partly verify the requirements in section 8.1.2 and section 9.1.

The test parameters are given in Table A.8.1.1 and A.8.1.1A below. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

## Table A.8.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition

Para	ameter	Unit	Value	Comment
DCH parame	DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Contro	Power Control		On	
Target quality value on DTCH		BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2, Cell 3	
Final condition	Active cell		Cell 1	
0			0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigg	ler	ms	0	
Threshold us	ed frequency	dBm	-70	Applicable for Event 1G
Filter coefficie	ent		0	
Monitored ce	Monitored cell list size		12 TDD neighbours on Channel 1	
T1		S	6	
T2		S	6	
Т3		S	6	

Parameter	Unit		Cell 1			Cell 2			Cell 3		
		T1	T2	Т3	T1	T2	T3	T1	T2	Т3	
DL timeslot number			0			0		0			
UTRA RF Channel Number			Channel 1			Channel 1		Channel 1			
PCCPCH_Ec/lor	dB		-3			-3			-3		
SCH_Ec/lor	dB		-9			-9		-9			
SCH_t <sub>offset</sub>			0			5			10		
OCNS_Ec/lor	dB		-3,12			-3,12	-	-3,12			
$\hat{I}_{or}/I_{oc}$	dB	7	ę	5	5 7 -Inf			-Inf 7			
PCCPCH RSCP	dBm	-66	-6	68	-68	-66	-Inf	-11	nf	-66	
I <sub>oc</sub>	dBm / 3,84 MHz					-70					
Propagation Condition			AWGN								

## Table A.8.1.1A: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

## A.8.1.1.1.2 1.28 Mcps TDD option

This test will derive that the terminal <u>The purpose of this test is to verify that the UE</u> makes correct reporting of an events. This test will partly verify the requirements in section 8.1A.2 and section 9.1.

The test parameters are given in Table A.8.1.1B and A.8.1.1C below. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A. 8.1A. General test parameters are given in the table A.8.1C below and they are signalled from test device.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, <u>and that</u> P-CCPCH RSCP of the best cell has to shall be reported together with Event 1G reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [16]. The cell specific test parameters are given in Table A.8.1CD below.

The TTI of the uplink DCCH shall be 20ms.

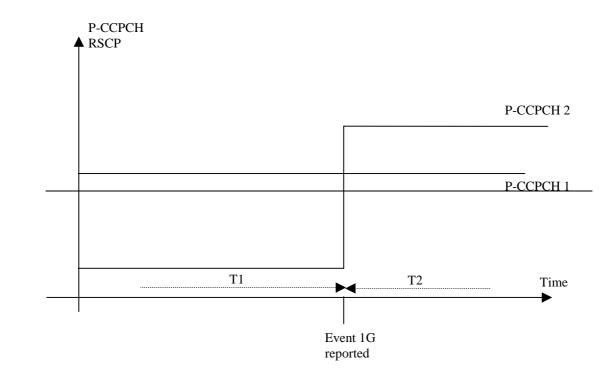


Figure A. 8.1A: Illustration of parameters for handover measurement reporting test case

Table A.8.1BC: General test parameters for correct reporting of intra frequency neighbours Event 1G
triggered reporting in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
<u>Target quality value</u> on DTCH	<u>BLER</u>	<u>0.01</u>	
Active cell		Cell 1	
Neighbour cell		<u>Cell 2, Cell 3</u>	
Threshold used frequency	dB	-71	Absolute P-CCPCH RSCP threshold for event 1G
<u>0</u>	<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		2412 TDD neighbours on Channel 1	Measurement control information is sent before T1 starts.
T1	s	<del>10</del> 6	
T2	S	<del>10<u>6</u></del>	
<u>T3</u>	S	<u>6</u>	

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

Parameter	Unit		Ce	<del>#  1</del>			<del>   2</del>			
Timeslot Number		(	)	Dw	PTS	G	)	DwPTS		
		<del>T1</del>	<del>T2</del>	<b>T1</b>	<del>T2</del>	T1	<del>T2</del>	<del>T1</del>	<del>T2</del>	
UTRA RF Channel Number			Char	nnel 1			Char	nel 1		
PCCPCH_Ec/lor	dB	-	3				3			
DwPCH_Ec/lor	dB			(	)			(	÷	
$\frac{\hat{I}_{or}}{I_{oc}}$	dB	3	3			-Infinity	6			
-I <sub>oc</sub> -	dBm/1. 28 MHz					<del>70</del>				
PCCPCH_RSCP	dBm	<del>-70</del>	<del>-70</del>			-Infinity	<del>-67</del>			
Propagation Condition					-AV	/GN				

#### Table A.8.1.1C: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

Pa	rameter	<u>Unit</u>	<u>Cell 1</u>							<u>Cell 2</u>					<u>Cell 3</u>					
DL	timeslot number		<u>0</u>			DwPTS			<u>0</u>			DwPTS			<u>0</u>			<b>DwPTS</b>		S
			<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>
	RA RF Channel mber		Channe			nel 1	<u>nel 1</u>			Channel 1				<u>Char</u>			nel 1			
PC	CPCH_Ec/lor	<u>dB</u>		<u>-3</u>						<u>-3</u>						<u>-3</u>				
Dv	PCH_Ec/lor	<u>dB</u>					<u>0</u>					<u>0</u>						<u>0</u>		
00	NS_Ec/lor	<u>dB</u>	<u>-3</u>					<u>-3</u>					<u>-3</u>							
$\hat{I}_o$	$r/I_{oc}$	<u>dB</u>	<u>6</u>	<u>4</u>		<u>6</u>	4	<u>1</u>	<u>4</u>	<u>6</u>	<u>-Inf</u>	<u>4</u>	<u>6</u>	<u>-Inf</u>	<u>-1</u>	<u>nf</u>	<u>6</u>	<u>-Ir</u>	<u>nf</u>	<u>6</u>
PC	CPCH RSCP	<u>dBm</u>	<u>-67</u>	-69	<u>9</u>				<u>-69</u>	<u>-67</u>	<u>-Inf</u>				-1	<u>nf</u>	<u>-67</u>			
<u>I</u> _	c	<u>dBm</u> / 1,28 <u>MHz</u>		<u>-70</u>																
	ppagation ndition										<u>AW</u>	<u>GN</u>								

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

### A.8.1.1.2 Test Requirements

#### A.8.1.1.2.1 3.84Mcps TDD option

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 200ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 800ms from the beginning of time period T3.

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

The rate of events correctly reported during repeated tests shall be at least 90%.

#### A.8.1.1.2.2 1.28Mcps TDD option

The UE shall send one Event 1G triggered measurement report <u>for cell 2</u>, with a measurement reporting delay less than [800] 200ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 800ms from the beginning of time period T3.

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

The rate of correct-events correctly reported observed during repeated tests shall be at least 90%.

## R4-021181

Helsinki, Finland 12 - 16 August 2002

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Isolated Impact Analysis:

This CR introduces a test for an already existing requirement, UE measurement
procedures in CELL_DCH state.

Clauses affected:	ж	Α	.8.1	.1		
		Υ	Ν			
Other specs	ж		Χ	Other core specifications	ж	
Affected:			Χ	Test specifications		
			Χ	O&M Specifications		

Other comments:		No such test currently exists in TS34.122
		Equivalent CRs in other Releases: CR269 cat. F to 25.123 v4.5.0

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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.8 UE Measurements Procedures

## A.8.1 TDD intra frequency measurements

## A.8.1.1 Event 1G triggered reporting in AWGN propagation conditions

## A.8.1.1.1 Test Purpose and Environment

### A.8.1.1.1.1 3.84 Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of events. This test will partly verify the requirements in section 8.1.2 and section 9.1.

The test parameters are given in Table A.8.1.1 and A.8.1.1A below. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

## Table A.8.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition

Para	meter	Unit	Value	Comment
DCH paramet	ers		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality DTCH	Target quality value on DTCH		0.01	
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2, Cell 3	
Final condition	Active cell		Cell 1	
0		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigg	er	ms	0	
Threshold use	ed frequency	dBm	-70	Applicable for Event 1G
Filter coefficie	ent		0	
Monitored cel	Monitored cell list size		12 TDD neighbours on Channel 1	
T1	T1		6	
T2		S	6	
T3		S	6	

Parameter	Unit		Cell 1			Cell 2			Cell 3		
		T1	T2	Т3	T1	T2	T3	T1	T2	Т3	
DL timeslot number			0			0		0			
UTRA RF Channel Number		Channel 1				Channel 1		Channel 1			
PCCPCH_Ec/lor	dB		-3			-3			-3		
SCH_Ec/lor	dB	-9				-9		-9			
SCH_t <sub>offset</sub>		0				5		10			
OCNS_Ec/lor	dB		-3,12			-3,12	-	-3,12			
$\hat{I}_{or}/I_{oc}$	dB	7	ę	5	5	7	-Inf	-1	nf	7	
PCCPCH RSCP	dBm	-66	-6	68	-68	-66	-Inf	-11	nf	-66	
I <sub>oc</sub>	dBm / 3,84 MHz	-70									
Propagation Condition			AWGN								

## Table A.8.1.1A: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

## A.8.1.1.1.2 1.28 Mcps TDD option

This test will derive that the terminal <u>The purpose of this test is to verify that the UE</u> makes correct reporting of an events. This test will partly verify the requirements in section 8.1A.2 and section 9.1.

The test parameters are given in Table A.8.1.1B and A.8.1.1C below. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event" as illustrated in Figure A. 8.1A. General test parameters are given in the table A.8.1C below and they are signalled from test device.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, <u>and that</u> P-CCPCH RSCP of the best cell has to shall be reported together with Event 1G reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [16]. The cell specific test parameters are given in Table A.8.1CD below.

The TTI of the uplink DCCH shall be 20ms.

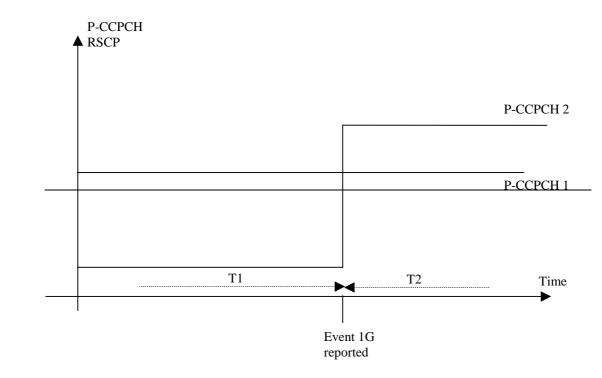


Figure A. 8.1A: Illustration of parameters for handover measurement reporting test case

Table A.8.1 <u>BC</u> : General test parameters for correct reporting of intra frequency neighbours Event 1G
triggered reporting in AWGN propagation condition

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
Target quality value on DTCH	BLER	<u>0.01</u>	
Active cell		Cell 1	
Neighbour cell		<u>Cell 2, Cell 3</u>	
Threshold used dB		-71	Absolute P-CCPCH RSCP threshold for event 1G
<u>0</u>	<u>dB</u>	<u>0</u>	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		2412 TDD neighbours on Channel 1	Measurement control information is sent before T1 starts.
T1	S	<del>10</del> 6	
T2	S	<del>10</del> <u>6</u>	
<u>T3</u>	S	<u>6</u>	

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

Parameter	Unit		Ce	<del>#  1</del>		Cell 2					
Timeslot Number		(	)	Dw	PTS	G	)	DwPTS			
		<del>T1</del>	<del>T2</del>	<b>T1</b>	<del>T2</del>	T1	<del>T2</del>	<del>T1</del>	<del>T2</del>		
UTRA RF Channel Number			Char	nnel 1		Channel 1					
PCCPCH_Ec/lor	dB	-	3				3				
DwPCH_Ec/lor	dB	θ					θ				
$\frac{\hat{I}_{or}}{I_{oc}}$	dB	3	3			-Infinity	6				
-I <sub>oc</sub> -	dBm/1. 28 MHz	-70									
PCCPCH_RSCP	dBm	<del>-70</del>	<del>-70</del>			-Infinity	<del>-67</del>				
Propagation Condition					-AV	/GN					

#### Table A.8.1.1C: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

Pa	rameter	<u>Unit</u>		<u>Cell 1</u>				<u>Cell 2</u>					<u>Cell 3</u>							
DL	timeslot number			<u>0</u>		D	<b>DwPTS</b>		<u>0</u>			DwPTS			<u>0</u>		<b>DwPTS</b>			
			<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>
	RA RF Channel mber		Channel 1			Channel 1				Channel 1										
PC	CPCH_Ec/lor	<u>dB</u>		<u>-3</u>				<u>-3</u>						<u>-3</u>						
Dw	PCH_Ec/lor	<u>dB</u>				<u>0</u>						<u>0</u>					<u>0</u>			
00	NS_Ec/lor	<u>dB</u>		<u>-3</u>					<u>-3</u>						<u>-3</u>					
$\hat{I}_o$	r/I <sub>oc</sub>	<u>dB</u>	<u>6</u>	<u>4</u>	<u>.</u>	<u>6</u>	4	<u>1</u>	<u>4</u>	<u>6</u>	<u>-Inf</u>	<u>4</u>	<u>6</u>	<u>-Inf</u>	<u>-lı</u>	<u>nf</u>	<u>6</u>	<u>-Ir</u>	<u>nf</u>	<u>6</u>
PC	CPCH RSCP	<u>dBm</u>	<u>-67</u>	-6	<u>9</u>				<u>-69</u>	<u>-69</u> <u>-67</u> <u>-Inf</u>				<u>-lı</u>	nf	<u>-67</u>				
<u>I</u> <sub>o</sub>	c	<u>dBm</u> / 1,28 <u>MHz</u>		<u>-70</u>																
	pagation ndition										<u>AW</u>	GN								

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

## A.8.1.1.2 Test Requirements

#### A.8.1.1.2.1 3.84Mcps TDD option

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 200ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 800ms from the beginning of time period T3.

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

The rate of events correctly reported during repeated tests shall be at least 90%.

#### A.8.1.1.2.2 1.28Mcps TDD option

The UE shall send one Event 1G triggered measurement report <u>for cell 2</u>, with a measurement reporting delay less than [800] 200ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 800ms from the beginning of time period T3.

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

The rate of correct-events correctly reported observed during repeated tests shall be at least 90%.

## R4-021182

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For <u>HELP</u> on u	sing t	his fori	m, see b	ottom of	f this pag	ge or l	look á	at the	e pop-up tex	t over	the ¥ sy	mbols.
Proposed change	affect	t <b>s:</b> L	JICC app	os#	N	1E X	Rad	io Ac	cess Netwo	ork 📃	Core No	etwork
Title:         %         Correction to RX Timing Deviation for LCR TDD option												
Source: % RAN WG4												
Work item code: %	LCF	RTDD-	RF						Date: 8	€ <mark>21/</mark>	/ <mark>08/2002</mark>	
Category: ೫	Detai	F (corr A (corr B (add C (fund D (edite iled exp	ection) responds ition of fe ctional mo orial mod	odification ification) of the ab	ection in a	re)			2	of the fo (GSN (Rele (Rele (Rele (Rele (Rele	I-4 M Phase 2) ease 1996) ease 1997) ease 1998) ease 1999) ease 4) ease 5) ease 6)	
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How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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.
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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.

### 9.2.1.6 RX Timing Deviation

The measurement period shall be 100 ms.

#### 9.2.1.6.1 Accuracy requirements

9.2.1.6.1.1 3.84 Mcps TDD option

#### Table 9.41: RX Timing Deviation accuracy

Parameter	Unit	Accuracy [chip]	Conditions
			Range [chips]
RX Timing Deviation	chip	+/- 0,5	-256,, 256

9.2.1.6.1.2 1.28 Mcps TDD option

#### Table 9.41A: RX Timing Deviation accuracy

Demonster	l lucit	Accuracy [abin]	Conditions		
Parameter	Unit	Accuracy [chip]	Range [chips]		
RX Timing Deviation	Chips period	+/- 0.125	<del>0<u>-16,</u>, 16</del>		

#### 9.2.1.6.2 Range/mapping

1

#### 9.2.1.6.2.1 3.84 Mcps TDD option

The reporting range for RX Timing Deviation is from -255,9375 ... 255,9375 chips.

In table 9.42 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

#### Table 9.42

Reported value	Measured quantity value	Unit
RX_TIME_DEV_0000	RX Timing Deviation < -255,9375	chip
RX_TIME_DEV_0001	-255,9375≤ RX Timing Deviation < 255,875	chip
RX_TIME_DEV_0002	-255,875≤ RX Timing Deviation < -255,8125	chip
RX_TIME_DEV_4096	000,00≤ RX Timing Deviation <0,0625	chip
RX_TIME_DEV_8189	255,8125 ≤ RX Timing Deviation < 255,875	chip
RX_TIME_DEV_8190	255,875≤ RX Timing Deviation < 255,9375	chip
RX_TIME_DEV_8191	255,9375 ≤ RX Timing Deviation	chip

NOTE: This measurement may be used for timing advance calculation or location services.

#### 9.2.1.6.2.2 1.28 Mcps TDD option

The reporting range for *RX Timing Deviation* is from <u>0-16</u> .... 16 chips.

In table 9.42A mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

İ

Reported value	Measured quantity value	Unit
RX_TIME_DEV_000	0	chip
RX_TIME_DEV_001	<del>0,0625 _15,9375</del> ≤ RX Timing Deviation < <del>0,125_15,875</del>	chip
RX_TIME_DEV_002	<del>0,125 _15,875 </del> ≤ RX Timing Deviation < <del>0,1875_15,8125</del>	chip
RX_TIME_DEV_ <del>253</del> 509	$15,8125 \le RX$ Timing Deviation < $15,875$	chip
RX_TIME_DEV_ <del>25</del> 4 <u>510</u>	$15,875 \le RX$ Timing Deviation < $15,9375$	chip
RX_TIME_DEV_ <del>255</del> 511	15,9375 ≤ RX Timing Deviation	chip

#### Table 9.42A

NOTE: This measurement can be used for timing advance (synchronisation shift) calculation for uplink synchronisation or location services.

## R4-021183

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	CHANGE REQUEST										
ж	25.	<mark>123</mark>	CR <mark>27</mark>	2	жrev		ж	Current ve	rsion:	5.1.0	ж
For <u><b>HELP</b></u> on using this form, see bottom of this page or look at the pop-up text over the $#$ symbols.											
Proposed change a	affect	t <b>s:</b> U	ICC apps	ж <u>–</u>	ME X	Rac	dio A	ccess Netwo	ork	Core Ne	etwork
Title: #	Cor	rection	to RX Ti	ming Devi	ation for L	CR T	DD o	option			
Source: #	RAI	<mark>N WG4</mark>									
Work item code: ℜ	LCF	RTDD-I	٦F					Date:	€ <mark>21</mark>	/08/2002	
Category: ⊮	Detai	F (corre A (corre B (addi C (func D (edito led expl	ection) esponds to tion of fea tional moc prial modifi	<i>lification of</i> <i>cation)</i> of the above	on in an ea feature)		elease	2	of the fo (GSI (Rela (Rela (Rela (Rela (Rela	el-5 ollowing rele M Phase 2) ease 1996) ease 1997) ease 1998) ease 1999) ease 4) ease 5) ease 6)	
Reason for change	9: X	Devia	tion can l		e or posit	ve. T		porting range			os for <i>RX</i>
Summary of chang	<b>је:</b> Ж			eporting ra ange of re				Deviation to 511].	[-16, 7	16] chips.	
Consequences if not approved:		smalle Isolate The c	r than it s d Impac hange wo	hould be. <u>t Analysis</u> ould not af	<u>s:</u> fect imple	menta	ation	ill be error v s behaving nave like inc	like in	dicated in	the CR,
Clauses affected:	ж	9.2.1.	6								
Other specs Affected:	æ	X	Test spe	re specific cifications ecification		ж	TS2	5.433			
Other comments:	ж	[0,511	I].	_		_		[0, 255]. It s at. F to 25.1		_	ed to

How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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.
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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.

### 9.2.1.6 RX Timing Deviation

The measurement period shall be 100 ms.

#### 9.2.1.6.1 Accuracy requirements

9.2.1.6.1.1 3.84 Mcps TDD option

#### Table 9.41: RX Timing Deviation accuracy

Parameter	Unit	Accuracy [chip]	Conditions
			Range [chips]
RX Timing Deviation	chip	+/- 0,5	-256,, 256

9.2.1.6.1.2 1.28 Mcps TDD option

#### Table 9.41A: RX Timing Deviation accuracy

Deveryor	l lucit	Accuracy [abin]	Conditions	
Parameter	Unit	Accuracy [chip]	Range [chips]	
RX Timing Deviation	Chips period	+/- 0.125	<del>0<u>-16,</u>, 16</del>	

#### 9.2.1.6.2 Range/mapping

1

#### 9.2.1.6.2.1 3.84 Mcps TDD option

The reporting range for RX Timing Deviation is from -255,9375 ... 255,9375 chips.

In table 9.42 mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

#### Table 9.42

Reported value	Measured quantity value	Unit
RX_TIME_DEV_0000	RX Timing Deviation < -255,9375	chip
RX_TIME_DEV_0001	-255,9375≤ RX Timing Deviation < 255,875	chip
RX_TIME_DEV_0002	-255,875≤ RX Timing Deviation < -255,8125	chip
RX_TIME_DEV_4096	000,00≤ RX Timing Deviation <0,0625	chip
RX_TIME_DEV_8189	255,8125 ≤ RX Timing Deviation < 255,875	chip
RX_TIME_DEV_8190	255,875≤ RX Timing Deviation < 255,9375	chip
RX_TIME_DEV_8191	255,9375 ≤ RX Timing Deviation	chip

NOTE: This measurement may be used for timing advance calculation or location services.

#### 9.2.1.6.2.2 1.28 Mcps TDD option

The reporting range for *RX Timing Deviation* is from <u>0-16</u> .... 16 chips.

In table 9.42A mapping of the measured quantity is defined. Signalling range may be larger than the guaranteed accuracy range.

İ

Reported value	Measured quantity value	Unit
RX_TIME_DEV_000	0	chip
RX_TIME_DEV_001	<del>0,0625 _15,9375</del> ≤ RX Timing Deviation < <del>0,125_15,875</del>	chip
RX_TIME_DEV_002	<del>0,125 _15,875 </del> ≤ RX Timing Deviation < <del>0,1875_15,8125</del>	chip
RX_TIME_DEV_ <del>253</del> 509	$15,8125 \le RX$ Timing Deviation < $15,875$	chip
RX_TIME_DEV_ <del>25</del> 4 <u>510</u>	$15,875 \le RX$ Timing Deviation < $15,9375$	chip
RX_TIME_DEV_ <del>255</del> 511	15,9375 ≤ RX Timing Deviation	chip

#### Table 9.42A

NOTE: This measurement can be used for timing advance (synchronisation shift) calculation for uplink synchronisation or location services.

## R4-021184

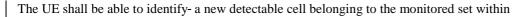
## Helsinki, Finland 12 - 16 August 2002

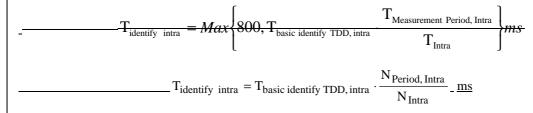
	CHANGE REQUEST							
ж	<b>25.123</b> CR <b>273 # rev #</b> Current version: <b>4.5.0 #</b>							
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the % symbols.							
Proposed change a	ffects: UICC apps# ME X Radio Access Network Core Network							
Title: ೫	Correction to the intra frequency measurements for LCR TDD option							
Source: ೫	RAN WG4							
Work item code: #	LCRTDD-RF Date: # 21/08/2002							
Category: ₩	FRelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99C (release 1999)Defended explanations of the above categories canRel-4C (Release 4)Defended in 3GPP TR 21.900.Rel-6Rel-6Rel-6Rel-6							
Reason for change	<ul> <li>For the 1.28Mcps TDD option, all cells using the same frequency are synchronised in the timeslot level. PCCPCH is always located in Ts0. The measurement is performed in the special periods of TS0, DwPCH and Main Guard Period. Other timeslots need not to be taken into account for intra- frequency measurements. They can be used for other purposes without degrading intra-frquency measurement performance.</li> </ul>							
Summary of chang	<b>Changing the formula for calculating the T<sub>identify intra</sub>, Y<sub>measurement intra</sub> for P-CCPCH RSCP measurements and the definition of the variables.</b>							
Consequences if not approved:	* The calculation of T <sub>identify intra</sub> and Y <sub>measurement intra</sub> is clarified/corrected. <u>Isolated Impact Analysis:</u> The Change does not affect the function.							
Clauses affected:	<b>%</b> 8.1A.2.2.1, 8.1A.2.2.2, 8.4A.2.2.1, 8.4A.2.2.2							
Other specs Affected:	Y       N         X       Other core specifications       #         X       Test specifications       #         X       O&M Specifications       TS34.122							
Other comments:	# Equivalent CRs in other Releases: CR274 cat. A to 25.123 v5.1.0							

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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 cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB and DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

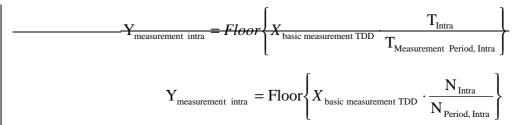
The UE shall be able to identify a new detectable cell not belonging to the monitored set within

$$T_{identify detected set} = 30s$$

when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

#### 8.1A.2.2.2 UE P-CCPCH RSCP measurement capability

In the CELL\_DCH state the measurement period for intra frequency P-CCPCH RSCP measurements is 200 ms. When no inter frequency measurement is scheduled<u>all TS0</u>, DwPTS and main guard periods<u>guard periods</u> in the measurement period <u>are scheduled for intra frequency measurements</u>, the UE shall be capable of performing P-CCPCH RSCP measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network have to be performed during periods of TS0, DwPTS or main guard period, the UE shall be capable of performing P-CCPCH RSCP measurement intra is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than  $Y_{measurement intra}$  cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from UE physical layer to higher layers may be decreased.



whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}} = 6$  (cells)

T<sub>Measurement\_Period, Intra</sub> =200 ms. The measurement period for Intra frequency P-CCPCH RSCP measurements.

<u>N<sub>Period,Intra:</sub> = 40 Number of subframes in T<sub>Measurement\_Period, Intra.</u></u></sub>

 This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing. It is assumed for the requirement that the slot allocation allows measurement windows to be of minimum duration necessary to perform the measurements.

<u>N<sub>intra</sub>:</u> This is the minimum number of sub-frame in that the period of TS0, DwPTS and main guard period is available for intra frequency measurements, during the measurement period.

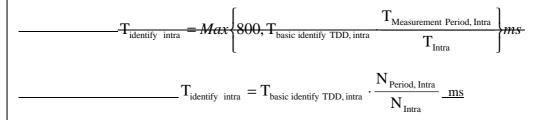
 $T_{basic\_identify\_TDD, intra} = 800$  ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1A.2.6).

The UE shall furthermore be capable of performing P-CCPCH measurements for at least 1 detected intra-frequency cell, in the detected set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 10 s. The measurement accuracy for all measured cells shall be as specified in the section

## < Next changed section >

#### 8.4A.2.2.1 Identification of a new cell

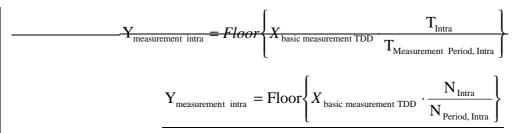
The UE shall be able to identify- a new detectable cell belonging to the monitored set within



A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB.

#### 8.4A.2.2.2 UE P-CCPCH RSCP measurement capability

In the CELL\_FACH state the measurement period for intra frequency P-CCPCH RSCP measurements is 200 ms. When no inter frequency measurement is scheduledall TS0, DwPTS and main guard period in the measurement period are scheduled for intra frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting thse measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements-are required by the network have to be performed during periods of TS0, DwPTS and main guard period, the UE shall be capable of performing P-CCPCH RSCP measurements for at least Y<sub>measurement intra</sub> cells, where Y<sub>measurement intra</sub> is defined in the following equation.. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than Y<sub>measurement intra</sub> cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from UE physical layer to higher layers may be decreased.



whereby function Floor(x) takes the integer part of x.

X<sub>basic measurement TDD</sub> is specified in section 8.1A.2.2.2

T<sub>Measurement\_Period, Intra</sub> is specified in section 8.1A.2.2.2

T<sub>Intra</sub>: is specified in section 8.1A.2.2.2

<u>N<sub>Period, Intra</sub></u>: is specified in section 8.1A.2.2.2

N<sub>Intra</sub>: is specified in section 8.1A.2.2.2

T<sub>basic\_identify\_TDD, intra</sub> is specified in section 8.1A.2.2.2

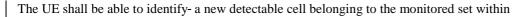
## R4-021185

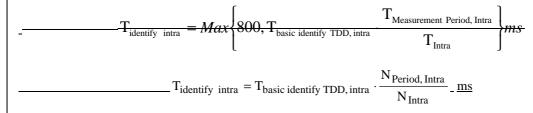
Helsinki, Finland 12 - 16 August 2002

ж	25.	123 CR 27	<mark>74</mark>	rev	Ħ	Current versio	<sup>n:</sup> <b>5.1.0</b>	ж
For <u>HELP</u> on u	ising th	is form, see bo	ottom of this pa	age or loc	ok at the	e pop-up text o	ver the X syr	nbols.
Proposed change						ccess Network		etwork
Title: ೫	Corr	ection to the in	tra frequency	measure	ments f	or LCR TDD or	otion	
Source: ೫	RAN	WG4						
Work item code: भ	LCR	TDD-RF				Date:	21/08/2002	
Category: ¥	F A E C D Detaile	ne of the followir (correction) (corresponds to (addition of fea (functional mod (editorial modif ed explanations) nd in 3GPP <u>TR 2</u>	o a correction in ture), dification of feat ication) of the above cat	ure)		Use <u>one</u> of th 2 (( P) R96 (H R97 (H R98 (H R99 (H Rel-4 (H Rel-5 (H	Rel-5 e following rele GSM Phase 2) Release 1996) Release 1997) Release 1998) Release 1999) Release 4) Release 5) Release 6)	eases:
Reason for change	e: Ж	For the 1.28M synchronised i measurement Guard Period. frequency mea degrading intra	n the timeslot is performed i Other timeslo asurements. T	level. PC n the spe ts need n hey can b	CPCH ecial per not to be be used	is always locat iods of TS0, D taken into acc for other purp	ed in Ts0. Th wPCH and M count for intra	ain
Summary of chang	ge: #	Changing the f	ormula for cal ements and th	culating t te definiti	the T <sub>ider</sub> ion of th	ntify intra, Y <sub>measuren</sub> ne variables.	nent intra for P-C	СРСН
Consequences if not approved:		he calculation solated Impac The Change d	t Analysis:			a is clarified/co	rrected.	
Clauses affected:	ж	8.1A.2.2.1, 8.1	A.2.2.2, 8.4A.	2.2.1, 8.4	4A.2.2.2	2		
Other specs Affected:	*	X Test spe	re specificatio cifications ecifications	ns ¥	ę			
Other comments:	ж	Equivalent CR	s in other Rele	eases: Cl	R273 ca	at. F to 25.123	v4.5.0	

How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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.
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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 cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB and DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

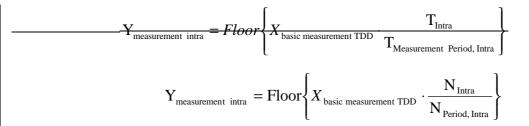
The UE shall be able to identify a new detectable cell not belonging to the monitored set within

$$T_{identify detected set} = 30s$$

when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB. When L3 filtering is used an additional delay can be expected.

#### 8.1A.2.2.2 UE P-CCPCH RSCP measurement capability

In the CELL\_DCH state the measurement period for intra frequency P-CCPCH RSCP measurements is 200 ms. When no inter frequency measurement is scheduled<u>all TS0</u>, DwPTS and main guard periods<u>guard periods</u> in the measurement period <u>are scheduled for intra frequency measurements</u>, the UE shall be capable of performing P-CCPCH RSCP measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network have to be performed during periods of TS0, DwPTS or main guard period, the UE shall be capable of performing P-CCPCH RSCP measurement intra is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than  $Y_{measurement intra}$  cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from UE physical layer to higher layers may be decreased.



whereby function Floor(x) takes the integer part of x.

 $X_{\text{basic measurement TDD}} = 6$  (cells)

T<sub>Measurement\_Period, Intra</sub> =200 ms. The measurement period for Intra frequency P-CCPCH RSCP measurements.

<u>N<sub>Period,Intra:</sub> = 40 Number of subframes in T<sub>Measurement\_Period, Intra.</u></u></sub>

 This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing. It is assumed for the requirement that the slot allocation allows measurement windows to be of minimum duration necessary to perform the measurements.

 N<sub>intra</sub>:
 This is the minimum number of sub-frame in that the period of TS0, DwPTS and main guard period is available for intra frequency measurements, during the measurement period.

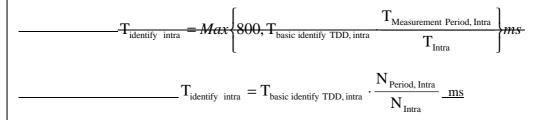
 $T_{basic\_identify\_TDD, intra} = 800$  ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1A.2.6).

The UE shall furthermore be capable of performing P-CCPCH measurements for at least 1 detected intra-frequency cell, in the detected set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 10 s. The measurement accuracy for all measured cells shall be as specified in the section

## < Next changed section >

#### 8.4A.2.2.1 Identification of a new cell

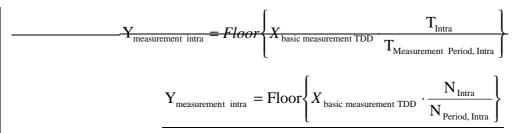
The UE shall be able to identify- a new detectable cell belonging to the monitored set within



A cell shall be considered detectable when P-CCPCH Ec/Io  $\geq$  -8 dB, DwPCH\_Ec/Io  $\geq$  -5 dB.

#### 8.4A.2.2.2 UE P-CCPCH RSCP measurement capability

In the CELL\_FACH state the measurement period for intra frequency P-CCPCH RSCP measurements is 200 ms. When no inter frequency measurement is scheduledall TS0, DwPTS and main guard period in the measurement period are scheduled for intra frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for 6 identified intra-frequency cells of the monitored set and the UE physical layer shall be capable of reporting thse measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements-are required by the network have to be performed during periods of TS0, DwPTS and main guard period, the UE shall be capable of performing P-CCPCH RSCP measurements for at least Y<sub>measurement intra</sub> cells, where Y<sub>measurement intra</sub> is defined in the following equation.. The measurement accuracy for all measured cells shall be as specified in the section 9. If the UE has identified more than Y<sub>measurement intra</sub> cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from UE physical layer to higher layers may be decreased.



whereby function Floor(x) takes the integer part of x.

X<sub>basic measurement TDD</sub> is specified in section 8.1A.2.2.2</sub>

T<sub>Measurement\_Period, Intra</sub> is specified in section 8.1A.2.2.2

T<sub>Intra</sub>: is specified in section 8.1A.2.2.2

<u>N<sub>Period, Intra</sub></u>: is specified in section 8.1A.2.2.2

N<sub>Intra</sub>: is specified in section 8.1A.2.2.2

T<sub>basic\_identify\_TDD, intra</sub> is specified in section 8.1A.2.2.2

## R4-021186

## Helsinki, Finland 12 - 16 August 2002

	CHANGE REQUEST						
ж	<b>25.123</b> CR <b>275 # rev #</b> Current version: <b>4.5.0 #</b>						
For <b>HELP</b> on using this form, see bottom of this page or look at the pop-up text over the <b>#</b> symbols.							
Proposed change	affects: UICC apps# ME X Radio Access Network Core Network						
Title: भ	Correction to section 10						
Source: भ	RAN WG4						
Work item code: भ	LCRTDD-RF Date: # 21/08/2002						
Category: ₩	FRelease: %Rel-4Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D tetailed explanations of the above categories canRel-4be found in 3GPP TR 21.900.Rel-5Release 6)						
Reason for chang	<ul> <li>e: # The PRX<sub>PRACH,des</sub> FIELD_LEV mapping is error. In TS25.221, the FPACH is The Fast Physical Access Channel. TS25.123 should be consistent with that. Received starting position of the UpPCH (UpPCH<sub>POS</sub>), that is the measurement parameter of SYNC-UL Timing Deviation for 1.28 Mcps. In the section 10, the contents resemble that in section 9. the format of form should be same with that in section 9.</li> </ul>						
Summary of chan	<ul> <li>ge: # Correction to an error of the PRX<sub>PRACH,des</sub> FIELD_LEV mapping.</li> <li>Changing the FPACH(Forward Physical Access Channel) in section 10 to FPACH(Fast Physical Access Channel).</li> <li>Deleting the contents of Received starting position of the UpPCH and explaining it is the SYNC-UL Timing Deviation for 1.28 Mcps.</li> <li>Modifying the format of form in section 10 consistent with section 9.</li> </ul>						
Consequences if not approved:	<ul> <li>It may make mapping error of the PRX<sub>PRACH,des</sub> FIELD_LEV. The definition in TS25.123 will be not consistent with TS25.221. that may be make misunderstand.</li> <li><u>Isolated Impact Analysis:</u> Would not affect the implementation behaving like indicated in the CR, the implementation would be affected if not behaving like indicated in the CR.</li> </ul>						
Clauses affected:	%     Section 10						
Ciauses allected:							
Other specs	#     X       Other core specifications     #						

Affected:	[	<ul><li>X Test specifications</li><li>X O&amp;M Specifications</li></ul>	
Other comments:	ж	Fruitelant CDs in other Delegance CD2	
		Equivalent CRs in other Releases: CR2	276 Cat. A to 25.123 V5.1.0

#### 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.

# 10 FPACH physical layer information field definition (1.28 Mcps TDD)

1.28 Mcps TDD introduces the FPACH (Forward-Fast Physical Access CHannel) which carries physical layer information. Two of these information fields are the 'received starting position of the UpPCH' (Uplink Pilot CHannel) and the 'transmit power level command for the RACH message'. Both information fields are directly (received starting position of the UpPCH) or can be indirectly (transmit power level command for the RACH message) derived from measurements but are no measurements themselves.

# 10.1 Received starting position of the UpPCH (UpPCH<sub>POS</sub>) (1.28 Mcps TDD)

The received starting position of the UpPCH (UpPCH<sub>POS</sub>) is derectly derived from measurement, it is equivalent to the received SYNC-UL Timing Deviation for 1.28 Mcps. Its accurecy and range/mapping is defined in section 9.2.1.10. The information field value, UpPCH<sub>POS</sub> -FIELD LEV xxxx, is equivalent to the reported value SYNC UL TIME DEV xxxx.

## 10.1.1 Range/mapping

#### Table 10.1

Range/mapping	UpPCH <sub>POS</sub> -FIELD is given with a resolution of 1/8 chip with the range [0,255.875] chip.
	UpPCH <sub>POS</sub> -FIELD shall be transmitted in the FPACH where:
	UpPCH <sub>POS</sub> -FIELD_LEV_0000: UpPCH <sub>POS</sub> -< 0 chip
	UpPCH <sub>POS</sub> -FIELD_LEV_0001: 0 chip
	UpPCH <sub>POS</sub> -FIELD_LEV_0002: 0.125 chip
	<u> </u>
	<u> </u>
	UpPCH <sub>POS</sub> -FIELD_LEV_2047: 255.875 chip ≤ UpPCH <sub>POS</sub>

## 10.1.2 Accuracy requirements

#### Table 10.2

Demonster	11-11		<b>Conditions</b>
Parameter	Unit	Accuracy	Range [chips]
Received starting position of the UpPCH	chips period	<del>+/- 0.125</del>	<del>0,, 255.875</del>

# 10.2 Transmit Power Level Command for the RACH message (1.28 Mcps TDD)

## 10.2.1 <u>Accuracy requirements</u>Range/mapping

#### Table 10.3

Range/mapping	PRX <sub>PRACH.des</sub> FIELD is given with a resolution of 0.5 dB with the range [-120,-80] dBm.		
	PRX <sub>PRACH.des</sub> -FIELD shall be transmitted in the FPACH where:		
	PRX <sub>PRACH,des</sub> FIELD_LEV_00: PRX <sub>PRACH,des</sub> 120 dBm		
	PRX <sub>PRACH,des</sub> FIELD_LEV_01: -120 dBm ≤ PRX <sub>PRACH,des</sub> < -119.5 dBm		
	$\frac{PRX_{PRACH,des}}{FIELD\_LEV\_02:} -119.5 \text{ dBm} \leq \frac{PRX_{PRACH,des}}{PRX_{PRACH,des}} < -119 \text{ dBm}$		
	<del></del> PRX <sub>PRACH,des</sub> FIELD_LEV_78: -81 dBm ≤ PRX <sub>PRACH,des</sub> -< -80.5 dBm		
	PRX <sub>PRACH,des</sub> FIELD_LEV_79: -80.5 dBm≤ PRX <sub>PRACH,des</sub> <-80 dBm		
	$PRX_{PRACH,des}$ FIELD_LEV_80: -80 dBm $\leq$ $PRX_{PRACH,des}$		

## 10.2.2 Accuracy requirements

Since this is a desired RX power at the node B and this is no measured value and the derivation of this value in the node B is implementation specific, accuracy requirements are not applicable.

## 10.2.2 Range/mapping

 $\frac{PRX_{PRACH,des}}{PRX_{PRACH,des}} \frac{FIELD \text{ is given with a resolution of } 0.5 \text{ dB with the range [-120,-80] dBm.}}{PRX_{PRACH,des}} \frac{FIELD \text{ shall be transmitted in the FPACH.}}{FIELD \text{ shall be transmitted in the FPACH.}}$ 

#### Table 10.1

Information field value	Measured quantity value	Unit
PRX <sub>PRACH,des</sub> FIELD_LEV_00	<u>PRX<sub>PRACH,des</sub> &lt; -120</u>	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_01	$-120 \le PRX_{PRACH, des} < -119.5$	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_02	<u>-119.5 ≤ PRX<sub>PRACH,des</sub> &lt; -119</u>	<u>dBm</u>
<u></u>	<u></u>	<u></u>
PRX <sub>PRACH.des</sub> FIELD_LEV_79	<u>-81 ≤ PRX<sub>PRACH,des</sub> &lt; -80.5</u>	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_80	$-80.5 \le PRX_{PRACH,des} < -80$	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_81	$-80 \le PRX_{PRACH,des}$	<u>dBm</u>

## R4-021187

## Helsinki, Finland 12 - 16 August 2002

	CHANGE REQUEST
ж	<b>25.123</b> CR <b>276 # rev #</b> Current version: <b>5.1.0 #</b>
For <u>HELP</u> on t	using this form, see bottom of this page or look at the pop-up text over the X symbols.
Proposed change	affects: UICC apps# ME X Radio Access Network Core Network
Title: ೫	Correction to section 10
Source: ೫	RAN WG4
Work item code: ೫	B LCRTDD-RF Date: # 21/08/2002
Category: ≇	Release: #       Rel-5         Use one of the following categories:       Use one of the following releases:         F (correction)       2       (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)         D (editorial modification)       R99       (Release 1999)         Detailed explanations of the above categories can be found in 3GPP TR 21.900.       Rel-5       (Release 5)         Rel-6       (Release 6)       Rel-6       Release 6)
Reason for chang	<ul> <li>e: # The PRX<sub>PRACH,des</sub> FIELD_LEV mapping is error. In TS25.221, the FPACH is The Fast Physical Access Channel. TS25.123 should be consistent with that. Received starting position of the UpPCH (UpPCH<sub>POS</sub>), that is the measurement parameter of SYNC-UL Timing Deviation for 1.28 Mcps. In the section 10, the contents resemble that in section 9. the format of form should be same with that in section 9.</li> </ul>
Summary of chan	<b>ge:</b> Correction to an error of the PRX <sub>PRACH,des</sub> FIELD_LEV mapping. Changing the FPACH(Forward Physical Access Channel) in section 10 to FPACH(Fast Physical Access Channel). Deleting the contents of Received starting position of the UpPCH and explaining it is the SYNC-UL Timing Deviation for 1.28 Mcps. Modifying the format of form in section 10 consistent with section 9.
Consequences if not approved:	<ul> <li>It may make mapping error of the PRX<sub>PRACH,des</sub> FIELD_LEV. The definition in TS25.123 will be not consistent with TS25.221. that may be make misunderstand.</li> <li><u>Isolated Impact Analysis:</u> Would not affect the implementation behaving like indicated in the CR, the implementation would be affected if not behaving like indicated in the CR.</li> </ul>
Clauses offented:	
Clauses affected:	
Other specs	Y     N       %     X       Other core specifications     %

Affected:	X Test specifications X O&M Specifications	
Other comments:	Equivalent CRs in other Releases: CR275 cat.	F to 25.123 v4.5.0

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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.

# 10 FPACH physical layer information field definition (1.28 Mcps TDD)

1.28 Mcps TDD introduces the FPACH (Forward-Fast Physical Access CHannel) which carries physical layer information. Two of these information fields are the 'received starting position of the UpPCH' (Uplink Pilot CHannel) and the 'transmit power level command for the RACH message'. Both information fields are directly (received starting position of the UpPCH) or can be indirectly (transmit power level command for the RACH message) derived from measurements but are no measurements themselves.

# 10.1 Received starting position of the UpPCH (UpPCH<sub>POS</sub>) (1.28 Mcps TDD)

The received starting position of the UpPCH (UpPCH<sub>POS</sub>) is derectly derived from measurement, it is equivalent to the received SYNC-UL Timing Deviation for 1.28 Mcps. Its accurecy and range/mapping is defined in section 9.2.1.10. The information field value, UpPCH<sub>POS</sub> -FIELD LEV xxxx, is equivalent to the reported value SYNC UL TIME DEV xxxx.

## 10.1.1 Range/mapping

#### Table 10.1

Range/mapping	UpPCH <sub>POS</sub> -FIELD is given with a resolution of 1/8 chip with the range [0,255.875] chip.
	UpPCH <sub>POS</sub> -FIELD shall be transmitted in the FPACH where:
	UpPCH <sub>POS</sub> -FIELD_LEV_0000: UpPCH <sub>POS</sub> -< 0 chip
	UpPCH <sub>POS</sub> -FIELD_LEV_0001: 0 chip
	UpPCH <sub>POS</sub> -FIELD_LEV_0002: 0.125 chip
	<u> </u>
	<u> </u>
	UpPCH <sub>POS</sub> -FIELD_LEV_2047: 255.875 chip ≤ UpPCH <sub>POS</sub>

## 10.1.2 Accuracy requirements

#### Table 10.2

Demonster	11-11		<b>Conditions</b>
Parameter	Unit	Accuracy	Range [chips]
Received starting position of the UpPCH	chips period	<del>+/- 0.125</del>	<del>0,, 255.875</del>

# 10.2 Transmit Power Level Command for the RACH message (1.28 Mcps TDD)

## 10.2.1 <u>Accuracy requirements</u>Range/mapping

#### Table 10.3

Range/mapping	PRX <sub>PRACH.des</sub> FIELD is given with a resolution of 0.5 dB with the range [-120,-80] dBm.		
	PRX <sub>PRACH.des</sub> -FIELD shall be transmitted in the FPACH where:		
	PRX <sub>PRACH,des</sub> FIELD_LEV_00: PRX <sub>PRACH,des</sub> 120 dBm		
	PRX <sub>PRACH,des</sub> FIELD_LEV_01: -120 dBm ≤ PRX <sub>PRACH,des</sub> < -119.5 dBm		
	$\frac{PRX_{PRACH,des}}{FIELD\_LEV\_02:} -119.5 \text{ dBm} \leq \frac{PRX_{PRACH,des}}{PRX_{PRACH,des}} < -119 \text{ dBm}$		
	<del></del> PRX <sub>PRACH,des</sub> FIELD_LEV_78: -81 dBm ≤ PRX <sub>PRACH,des</sub> -< -80.5 dBm		
	PRX <sub>PRACH,des</sub> FIELD_LEV_79: -80.5 dBm≤ PRX <sub>PRACH,des</sub> <-80 dBm		
	$PRX_{PRACH,des}$ FIELD_LEV_80: -80 dBm $\leq$ $PRX_{PRACH,des}$		

## 10.2.2 Accuracy requirements

Since this is a desired RX power at the node B and this is no measured value and the derivation of this value in the node B is implementation specific, accuracy requirements are not applicable.

## 10.2.2 Range/mapping

<u>PRX<sub>PRACH,des</sub> FIELD is given with a resolution of 0.5 dB with the range [-120,-80] dBm.</u> <u>PRX<sub>PRACH,des</sub> FIELD shall be transmitted in the FPACH.</u>

#### Table 10.1

Information field value	Measured quantity value	Unit
PRX <sub>PRACH,des</sub> FIELD_LEV_00	<u>PRX<sub>PRACH,des</sub> &lt; -120</u>	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_01	$-120 \le PRX_{PRACH, des} < -119.5$	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_02	<u>-119.5 ≤ PRX<sub>PRACH,des</sub> &lt; -119</u>	<u>dBm</u>
<u></u>	<u></u>	<u></u>
PRX <sub>PRACH.des</sub> FIELD_LEV_79	<u>-81 ≤ PRX<sub>PRACH,des</sub> &lt; -80.5</u>	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_80	$-80.5 \le PRX_{PRACH,des} < -80$	<u>dBm</u>
PRX <sub>PRACH,des</sub> FIELD_LEV_81	$-80 \le PRX_{PRACH,des}$	<u>dBm</u>

## R4-021229

Helsinki, Finland 12 - 16 August 2002

	CHAI	NGE REQUE		CR-Form-v7
æ	25.123 CR 277	ж <b>rev</b>	# Current version: <b>4.5.0</b>	ж
For <u>HELP</u> on u	sing this form, see bottom	n of this page or look	k at the pop-up text over the <b>%</b> sym	bols.
Proposed change	affects: UICC apps೫	ME X Ra	adio Access Network X Core Net	work
Title: ೫	TDD inter-frequency m	neasurement capat	bility	
Source: भ	RAN WG4			
Work item code: अ	LCRTDD-RF		<i>Date:</i> ೫ <mark>21/08/2002</mark>	
Category: ⊮	F Use <u>one</u> of the following car F (correction) A (corresponds to a co B (addition of feature) C (functional modification D (editorial modification Detailed explanations of the be found in 3GPP <u>TR 21.90</u>	orrection in an earlier r , tion of feature) on) a above categories can	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999)	ases:
Reason for change			or TDD monitoring still undefined fo CH and CELL_FACH State for 1.28	
Summary of chang	measuren - '[x] additio	nent capabilities in C	aced by '3 additional carriers' for UE	
Consequences if not approved:	remains undefined Isolated Impact Anal been modified. Would	. Uncertainty about r lysis: UE capabilities of I not affect the implem	nter-frequency carriers to be monitor requirements. on number of carriers to be monitored mentation behaving like indicated in the ng like indicated in the CR.	have
Clauses affected:	<b>೫ <mark>8.1А.2.1, 8.4А.2.1</mark></b>			
Other specs affected:	YN%XXOther core spXTest specificationXO&M Specification	ations		
Other comments:	ж Equivalent CRs in o	other Releases: CR2	278 cat. A to 25.123 v5.1.0	

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.

## 8.1A Measurements in CELL\_DCH State (1.28 Mcps option)

## 8.1A.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL\_DCH state. The requirements are split in TDD intra frequency, TDD inter frequency, FDD and GSM measurements. These measurements may be used by the UTRAN, e.g. for handover decisions. The measurements are defined in TS 25.225, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2A. For the description of the idle intervals see TS 25.225, Annex A.

## 8.1A.2 Requirements

#### 8.1A.2.1 UE Measurement Capability

The UE shall be able to monitor up to

- 32 intra frequency TDD cells, and
- 32 inter frequency cells, including
  - TDD cells distributed on up to  $[x]_3$  additional TDD carriers and
  - Depending on UE capability, FDD cells, distributed on up to 3 FDD carriers, and
  - Depending on UE capability, 32 GSM cells distributed on up to 32 GSM carriers.

Performance requirements for different types of measurements and different number of cells are defined in the following sections.

The requirements in section 9 are applicable for a UE performing measurements according to this section.

The received P-CCPCH  $E_c/I_o$  is defined as

$$\left(\frac{P - CCPCH \_ E_c}{I_o}\right)_{in \ dB} = \left(\frac{P - CCPCH \_ E_c}{I_{or}}\right)_{in \ dB} - \frac{I_o}{(\hat{I}_{or})}_{in \ dB}$$

The received DwPTS  $E_c/I_o$  is defined as

$$\left(\frac{DwPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{DwPCH\_E_c}{I_{or}}\right)_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}_{in\ dB}$$

<next changed section>

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## 8.4A Measurements in CELL\_FACH State (1.28 Mcps option)

## 8.4A.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL\_FACH state. The measurements are defined in TS 25.225, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2. For the description of the idle intervals see TS 25.225, Annex A.

## 8.4A.2 Requirements

### 8.4A.2.1 UE Measurement Capability

The UE shall be able to monitor up to

- 32 intra frequency TDD cells, and
- 32 inter frequency cells, including
  - TDD cells distributed on up to  $[x]_3$  additional TDD carriers and
  - Depending on UE capability, FDD cells, distributed on up to 3 FDD carriers.
- Depending on UE capability, 32 GSM cells distributed on up to 32 GSM carriers.

The requirements in section 9 on P-CCPCH RSCP measurements are applicable for a UE performing measurements according to this section. For inter-frequency FDD, TDD and GSM cell re-selection, measurement occasions as specified in TS 25.331 and, in addition, idle intervals as described in TS 25.225 are used to find and measure on these cells.

It is defined below how the measurements on different systems and modes are performed given the time allocated to that system. The time during the measurement occasions and idle intervals that is allocated to each of the different modes and systems shall be equally shared by the modes which the UE has capability for and that are in the monitored set signalled by the network.

The UE is required to measure periodically once every time period  $T_{meas}$  on each of the modes and systems, FDD interfrequency cells, TDD interfrequency cells and GSM carriers, for which the corresponding parameter  $N_{FDD}, N_{TDD}$  and  $N_{GSM}$  is set to 1, within the measurement time  $T_{meas}$ 

$$T_{meas} = \left[ \left( N_{FDD} + N_{TDD} + N_{GSM} \right) \cdot N_{TTI} \cdot \mathbf{M}_{\mathbf{R}} \mathbf{EP} \cdot 10 \right] \mathbf{ms}$$

where the following parameters are defined:

N <sub>TDD</sub>	= 0 or 1. If there are inter-frequency TDD cells in the neighbour list $N_{TDD}$ =1, otherwise $N_{TDD}$ =0.
N <sub>FDD</sub>	= 0 or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD}=1$ otherwise $N_{FDD}=0$ .
N <sub>GSM</sub>	= 0 or 1. If the UE is capable of GSM and there are GSM cells in the neighbour list, $N_{GSM}=1$ , otherwise $N_{GSM}=0$ .
M_REP	is the Measurement Occasion cycle length in number of frames as specified in TS 25.331.
N <sub>TTI</sub>	is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.

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How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <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.

## 8.1A Measurements in CELL\_DCH State (1.28 Mcps option)

## 8.1A.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL\_DCH state. The requirements are split in TDD intra frequency, TDD inter frequency, FDD and GSM measurements. These measurements may be used by the UTRAN, e.g. for handover decisions. The measurements are defined in TS 25.225, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2A. For the description of the idle intervals see TS 25.225, Annex A.

## 8.1A.2 Requirements

#### 8.1A.2.1 UE Measurement Capability

The UE shall be able to monitor up to

- 32 intra frequency TDD cells, and
- 32 inter frequency cells, including
  - TDD cells distributed on up to  $[x]_3$  additional TDD carriers and
  - Depending on UE capability, FDD cells, distributed on up to 3 FDD carriers, and
  - Depending on UE capability, 32 GSM cells distributed on up to 32 GSM carriers.

Performance requirements for different types of measurements and different number of cells are defined in the following sections.

The requirements in section 9 are applicable for a UE performing measurements according to this section.

The received P-CCPCH  $E_c/I_o$  is defined as

$$\left(\frac{P - CCPCH \_ E_c}{I_o}\right)_{in \ dB} = \left(\frac{P - CCPCH \_ E_c}{I_{or}}\right)_{in \ dB} - \frac{I_o}{(\hat{I}_{or})}_{in \ dB}$$

The received DwPTS  $E_c/I_o$  is defined as

$$\left(\frac{DwPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{DwPCH\_E_c}{I_{or}}\right)_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}_{in\ dB}$$

<next changed section>

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## 8.4A Measurements in CELL\_FACH State (1.28 Mcps option)

## 8.4A.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL\_FACH state. The measurements are defined in TS 25.225, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2. For the description of the idle intervals see TS 25.225, Annex A.

## 8.4A.2 Requirements

### 8.4A.2.1 UE Measurement Capability

The UE shall be able to monitor up to

- 32 intra frequency TDD cells, and
- 32 inter frequency cells, including
  - TDD cells distributed on up to  $[x]_3$  additional TDD carriers and
  - Depending on UE capability, FDD cells, distributed on up to 3 FDD carriers.
- Depending on UE capability, 32 GSM cells distributed on up to 32 GSM carriers.

The requirements in section 9 on P-CCPCH RSCP measurements are applicable for a UE performing measurements according to this section. For inter-frequency FDD, TDD and GSM cell re-selection, measurement occasions as specified in TS 25.331 and, in addition, idle intervals as described in TS 25.225 are used to find and measure on these cells.

It is defined below how the measurements on different systems and modes are performed given the time allocated to that system. The time during the measurement occasions and idle intervals that is allocated to each of the different modes and systems shall be equally shared by the modes which the UE has capability for and that are in the monitored set signalled by the network.

The UE is required to measure periodically once every time period  $T_{meas}$  on each of the modes and systems, FDD interfrequency cells, TDD interfrequency cells and GSM carriers, for which the corresponding parameter  $N_{FDD}, N_{TDD}$  and  $N_{GSM}$  is set to 1, within the measurement time  $T_{meas}$ 

$$T_{meas} = \left[ \left( N_{FDD} + N_{TDD} + N_{GSM} \right) \cdot N_{TTI} \cdot \mathbf{M}_{\mathbf{R}} \mathbf{EP} \cdot 10 \right] \mathbf{ms}$$

where the following parameters are defined:

N <sub>TDD</sub>	= 0 or 1. If there are inter-frequency TDD cells in the neighbour list $N_{TDD}$ =1, otherwise $N_{TDD}$ =0.
N <sub>FDD</sub>	= 0 or 1. If the UE is capable of FDD and there are FDD cells in the neighbour list $N_{FDD}=1$ otherwise $N_{FDD}=0$ .
N <sub>GSM</sub>	= 0 or 1. If the UE is capable of GSM and there are GSM cells in the neighbour list, $N_{GSM}=1$ , otherwise $N_{GSM}=0$ .
M_REP	is the Measurement Occasion cycle length in number of frames as specified in TS 25.331.
N <sub>TTI</sub>	is the number of frames in each measurement occasion, equal to the length of the largest TTI on the SCCPCH monitored by the UE.