TSG RAN Meeting #23 Phoenix, US, 10 - 12 March 2004

RP-040036

Title CRs (Rel-5 and Rel-6 Category A) to TS25.101

Source TSG RAN WG4

Agenda Item 7.5.5

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title Work			
R4-040075	25.101	327		F	Rel-5	5.9.0	Clarification of frequency error observation period for PRACH preambles	TEI5		
R4-040076	25.101	328		Α	Rel-6	6.3.0	6.3.0 Clarification of frequency error observation period for PRACH preambles			
R4-040100	25.101	332		F	Rel-5	5.9.0	Correction of a typo in section 9.3.2.2. (CQI Testing for UE Capability Categories 11 and 12)	HSDPA-RF		
R4-040129	25.101	333		F	Rel-5	5.9.0	Minimum requirements for UE ACS			
R4-040130	25.101	334		Α	Rel-6	6.3.0	Minimum requirements for UE ACS TEIS			

Munich, Germany 9 - 13 February 2004

									CR-Form-v7
		(CHANG	GE REQU	EST				CR-FOIIII-VI
×	25.1	01 CR	327	жrev	¥	Current vers	ion:	5.9.0	*
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the 光 symbols.									
Proposed change	affects:	UICC	apps#	ME X F	Radio Ad	ccess Networ	k	Core Ne	etwork
Title: #	Clarifi	cation of t	frequency e	rror observatio	n period	for PRACH	orear	mbles	
Source: #	RAN	MC4							
Source: #	KAN	WG4							
Work item code: ₩	TEI5					Date: ૠ	23/	02/2004	
Reason for change	F A B C D Detailed be foun	(correction (correspondant) (correspondant) (continual number of the continual	ds to a corre f feature), modification nodification) ons of the ab TR 21.900. urement interior is inapprope ned to alignent interval ages the UE	ection in an earlie	on period ACH aring define	Use one of 2 e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6 od) defined food PCPCH projection in clause one timeslot	(GSN (Rele (Rele (Rele (Rele (Rele (Rele eam)	ollowing release 1996) ease 1996) ease 1997) ease 1998) ease 1999) ease 4) ease 5) ease 6) quency errobles and not for the	or in eeds to
Summary of chang	1	Engthened Two editor I. In clau 2. Table unhelp error) terms	d to align wi ial changes use 6.3 the v 6.2 is delete of the terms of and AFC (A in the conte	neasurement in th clause 6.8 for are also incorp word later is co ed as it provide f frequency stal automatic Frequent out of the air into n 34.121 at vers	or EVM. corated: rrected to use bility (presency Corrace re-	o be latter. eful information esumably the control) nether equirements.	on an inve of w	nd introduc erse of frec rhich are d reference	luency efined to AFC

Consequences if not approved:

Conformance tests for PRACH or PCPCH preamble modulation quality being considered by T1 could return confusing results. EVM would be measured having had the residual frequency error removed over an interval of 3904 chips but the measurement interval over which this same residual frequency error should be judged is only defined over an interval of one timeslot (2560 chips). It is not possible to perform the two measurements over different intervals since the results can only be considered together. EVM by definition returns frequency

error as a residual result and an independent frequency error measurement carried out over a shorter interval would have no defined limit for the allowable EVM. Note: A longer measurement interval for frequency error makes the 0.1 PPM requirement easier to pass.

Clauses affected:	第 6.3
Other specs affected:	Y N X Other core specifications Test specifications O&M Specifications 34.121
Other comments:	策 Equivalent CRs in other Releases: CR328 cat. A to 25.101 v6.3.0

How to create CRs using this form:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.3 Frequency Error

The UE modulated carrier frequency shall be accurate to within ± 0.1 PPM observed over a period of one timeslot compared to the carrier frequency received from the Node B. For the PRACH and PCPCH preambles the measurement interval is lengthened to 3904 chips (being the 4096 chip nominal preamble period less a 25 μ s transient period allowance at each end of the burst). These signals will have an apparent error due to Node B frequency error and Doppler shift. In the latter case, signals from the Node B must be averaged over sufficient time that errors due to noise or interference are allowed for within the above ± 0.1 PPM figure. The UE shall use the same frequency source for both RF frequency generation and the chip clock.

Table 6.2: Frequency Error

AFC	Frequency stability
ON	within ± 0.1 PPM

Munich, Germany 9 - 13 February 2004											
			(CHANGE	RE	QUE	ST				CR-Form-v7
*	25.	101	CR	328	жre	ev	¥	Current vers	sion:	6.3.0	X
For <u>HELP</u> on u	ising t	his for	m, see	bottom of this	s page	or look a	at the	e pop-up text	over	the # sy	mbols.
Proposed change	affect	<i>is:</i> (JICC a	apps#	ME	X Rac	dio Ad	ccess Netwo	rk	Core No	etwork
Title: ∺	Cla	rification	on of f	requency error	r obse	rvation p	eriod	for PRACH	prea	mbles	
Source: #	RAI	N WG	4								
Work item code: ∺	TE	5						Date: ℜ	23	/02/2004	
Category: ж	Α							Release: %	Re	l-6	
	Use d	F (corr A (corr B (add C (fund D (edia led exp	rection) respondition of ctional torial m planatic	ds to a correction feature), modification) ons of the above TR 21.900.	n in ar feature)	elease	Use <u>one</u> of 2	the for (GSI) (Release (Releas		
Reason for change	¥ €	claus be le meas disac	se 6.3 ingther sureme	rement intervalis inappropriate inappropriate ined to align with ent interval for ges the UE giverval.	e for the EVM.	he PRAC existing The exis	CH ar defin sting	nd PCPCH printing ition in claus one timeslot	ream e 6.8 mea	bles and r for the surement	needs to interval
Summary of chang	уе: Ж	lengt	hened	ncy error meas to align with c	clause	6.8 for E	VM.	r the PRACH	l prea	amble is	

1. In clause 6.3 the word later is corrected to be latter.

Consequences if not approved:

 ★ Conformance tests for PRACH or PCPCH preamble modulation quality being considered by T1 could return confusing results. EVM would be measured having had the residual frequency error removed over an interval of 3904 chips but the measurement interval over which this same residual frequency error should be judged is only defined over an interval of one timeslot (2560 chips). It is not possible to perform the two measurements over different intervals since the results can only be considered together. EVM by definition returns frequency

2. Table 6.2 is deleted as it provides no useful information and introduces the unhelpful terms of frequency stability (presumably the inverse of frequency error) and AFC (Automatic Frequency Control) nether of which are defined terms in the context of the air interface requirements. The reference to AFC was removed from 34.121 at version 3.9.0 due to it causing confusion there. error as a residual result and an independent frequency error measurement carried out over a shorter interval would have no defined limit for the allowable EVM. Note: A longer measurement interval for frequency error makes the 0.1 PPM requirement easier to pass.

Clauses affected:	第 6.3
Other specs affected:	Y N X Other core specifications Test specifications O&M Specifications 34.121
Other comments:	器 Equivalent CRs in other Releases: CR327 cat. F to 25.101 v5.9.0

How to create CRs using this form:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.3 Frequency Error

The UE modulated carrier frequency shall be accurate to within ± 0.1 PPM observed over a period of one timeslot compared to the carrier frequency received from the Node B. For the PRACH and PCPCH preambles the measurement interval is lengthened to 3904 chips (being the 4096 chip nominal preamble period less a 25 μ s transient period allowance at each end of the burst). These signals will have an apparent error due to Node B frequency error and Doppler shift. In the latter case, signals from the Node B must be averaged over sufficient time that errors due to noise or interference are allowed for within the above ± 0.1 PPM figure. The UE shall use the same frequency source for both RF frequency generation and the chip clock.

Table 6.2: Frequency Error

AFC	Frequency stability
ON	within ± 0.1 PPM

3GPP TSG RAN WG4 (Radio) Meeting #30

R4-040100

Munich, Germany 9 - 13 February 2004

		CHAI	NGE REQ	JEST			CR-Form-v7
ж	25.101	CR 332	≋rev	# (Current versi	on: 5.9.0	X
For <u>HELP</u> on u	sing this fo	orm, see bottom	of this page or I	ook at the	pop-up text (over the ℋ syi	mbols.
Proposed change a	affects:	UICC apps器	ME X	Radio Ac	cess Networl	k Core Ne	etwork
Title: ∺	Correction and 12)	on of a typo in s	ection 9.3.2.2. (0	CQI Testin	g for UE Cap	pability Catego	ories 11
Source: #	RAN WO	G4					
Work item code: 光	HSDPA-	RF			Date: ∺	23/02/2004	
Category: ₩	F (cc A (cc B (ac C (fu D (ec Detailed e	ldition of feature) nctional modification ditorial modification	orrection in an earl tion of feature) on) above categories	ier release)	Use <u>one</u> of t 2 R96 R97 R98 R99 Rel-4 Rel-5	Rel-5 the following relation (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	
	00 4 4			(00LT	UE .		
Reason for change			to section 9.3.2.2 eeds to be correc		sting for UE C	Capability Cate	egories
Summary of chang			naximum BLER ly intended value		CQI median +	3 is changed	from
Consequences if not approved:	ж <mark>The</mark>	CQI test specifi	cation for UE cap	ability cat	egories 11 a	nd 12 will be i	ncorrect
Clauses affected:	ж <u>9.3</u>	2.2					
Other specs Affected:	第	Other core sp Test specification	ations	¥			
Other comments:	#						

How to create CRs using this form:

- 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 $\underline{\text{ftp://ftp.3gpp.org/specs/}}$ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.3.2.2 Minimum Requirement – UE capability categories 11,12

For the parameters specified in Table 9.27, the requirements are specified in terms of BLERs at particular reported CQIs when a fixed transport format given by CQI median as shown in Table 9.28. The BLER at a particular reported CQI is obtained by associating a particular CQI reference measurement period with HS-PDSCH subframe overlapping with the end of this CQI reference measurement period and calculating the fraction of erroneous HS-PDSCH subframes.

Table 9.27: Test Parameters for CQI test in fading: categories 11-12

Parameter	Unit	Test 1	Test 2			
$HS ext{-}PDSCHE_c/I_{or}$ (*)	dB	-8	-4			
\hat{I}_{or}/I_{oc}	dB	0	5			
I_{oc}	dBm/3.84 MHz	-6	60			
Phase reference	-	P-CF	PICH			
HS-SCCH_1 E_c/I_{or}	dB	-8	3.5			
$DPCH\ E_c/I_{or}$	dB	-	6			
Maximum number of H-ARQ transmission	-	,	1			
Number of HS-SCCH set to be monitored	-	1				
CQI feedback cycle	ms 2					
CQI repetition factor	-	1				
"XOOXOOX" to incorporate inter-TTI=3 UEs, where "X" indicates TTI in which HS-PDSCH is allocated to the UE, and "O" indicates DTX						
Propagation Channel		Cas	se 8			
Note1: Measurement power offset "Γ" is configured by RRC accordingly and as defined in [7] Note2: TF for HS-PDSCH is configured according to the reported						

Table 9.28: Minimum requirement for CQI test in fading for categories 11-12

CQI maping table described in TS25.214

CQI statistics. TF based on median CQI is used. Other physical channel parameters are configured according to the

Reported CQI	Maximum BLER					
Reported CQI	Test 1	Test 2				
CQI median	60%	60%				
CQI median + 3	15%	15% 60%				

R4-040129

3GPP TSG RAN WG4 (Radio) Meeting #30

Munich, Germany 9 - 13 February 2004

				(CHAN	GE	REQ	UE	ST					CR-Form-v7
*		25.	101	CR	333		⊭rev		¥	Current	versi	on:	5.9.0	¥
For <u>HEl</u>	For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the \mathbb{H} symbols.											mbols.		
Proposed (change a	affect	s: (JICC a	ipps# <mark> </mark>]	MEX	Rad	dio Ad	ccess Ne	etworl	k	Core Ne	etwork
Title:	*	Min	imum	Requi	rements f	or UE	Adjacer	nt Cha	annel	l Selectiv	vity			
Source:	ж	RAI	۱ WG	4										
Work item	code: ૠ	TEI	5							Dat	' e : ૠ	23/	02/2004	
Category:	**	Detai	F (corn A (corn B (add C (fun D (edi led exp	rection) respond dition of ctional torial m blanatic	owing cates ds to a con- feature), modification, odification, ins of the a FR 21.900.	rection on of fe) above o	in an ea ature)		elease	2	ne of t 6 (7 (8 (9 (1-4 (he fo (GSM (Rele (Rele (Rele (Rele (Rele	5 Ilowing rela 1 Phase 2) ase 1996) ase 1997) ase 1999) ase 4) ase 5) ase 6)	
Reason for	change		suffici ACS ronly a Today interfecturrer have a Makin	ent as require at a single an AC erer level an imple an imple an imple at the C	rameters it is state ment is to gle adjace CS require rel of -520 defined. act on co core requi nigher adj	d toda oday n ent cha ement IBm. T Insuffi verago iremer	ny. ot writte annel in of 33dE The UE b icient AC e and ca nts more	n as terfer is or ochaviors can be ca	gene er po nly tea vior fo pabil y. eral a	ral requing int. sted with or interferity with head	remein an a rer lev nigher	nts s idjace vels a r inte	ince it is t ent chanr above -52 rferer leve	ested nel 2dBm is els may
Summary o	of chang	je: Ж	Test	param	eter for a	djacer	nt chann	el se	lectiv	ity is add	ded.			
Consequer not approv		X		ctivity	pacity and requirement									
0/	f 41 -	0.0	7 5 4											
Clauses aft Other spec Affected:		¥ ¥	7.5.1 Y N X X	Other Test	r core spe specificati Specifica	ions	tions	¥	34.1	21				
Other com	ments:	¥	Equi	valent	CRs in ot	her Re	eleases:	CR3	34 ca	at. A to 2	25.101	l v6.3	3.0	

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked \$\mathbb{X}\$ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.5 Adjacent Channel Selectivity (ACS)

Adjacent Channel Selectivity (ACS) is a measure of a receiver's ability to receive a W-CDMA signal at its assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel. ACS is the ratio of the receive filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

7.5.1 Minimum requirement

The ACS shall be better than the value indicated in Table 7.4 for the test parameters specified in Table 7.5 where the BER shall not exceed 0.001.

The UE shall fulfil the minimum requirement specified in Table 7.4 for all values of an adjacent channel interferer up to –25 dBm.

<u>However it is not possible to directly measure the ACS, instead the lower and upper range of test parameters are chosen in Table 7.5 where the BER shall not exceed 0.001.</u>

Table 7.4: Adjacent Channel Selectivity

Power Class	Unit	ACS
3	dB	33
4	dB	33

Table 7.5: Test parameters for Adjacent Channel Selectivity

Parameter	Unit	Level Case 1	Case 2	
DPCH_Ec	dBm/3.84 MHz	<refsens> + 14 dB-103</refsens>	<refsens> + 41 dB</refsens>	
Î _{or}	dBm/3.84 MHz	<refî<sub>or> + 14 dB-92.7</refî<sub>	REFÎ _{or} > + 41 dB	
I _{oac} mean power (modulated)	dBm	-52	<u>-25</u>	
F _{uw} (offset)	MHz	+5 or -5	<u>+5 or -5</u>	
UE transmitted mean	dem The state of		20 (for Power class 3)	
power	UDIII	18 (for Power class 4)	18 (for Power class 4)	

NOTE: The I_{oac} (modulated) signal consists of the common channels needed for tests as specified in Table C.7 and 16 dedicated data channels as specified in Table C.6.

R4-040130

3GPP TSG RAN WG4 (Radio) Meeting #30

Munich, Germany 9 - 13 February 2004

-												
CHANGE REQUEST												
*		25.10	1 CR 3	34	жrev		¥	Current	version:	6.3.0	H	
For HI			form, see bo		_	_		e pop-up			<i>ymbols.</i> Network	
						_				_ core r	VELVVOIR	
Title:	*	Minimu	ım Requiren	nents for UI	E Adjacer	nt Cha	annel	l Selectiv	rity			
Source:	\mathfrak{X}	RAN W	/G4									
Work iten	n code: ૠ	TEI5						Date	e: ೫ 23	3/02/2004		
Reason fo		F (0 A (i B (i C (i D (i Detailed be found E: # The suf AC onl Too inte cur hav Ma	of the following correction) corresponds to addition of featunctional modifications in 3GPP TR. The Test parametricient as it is a single day an ACS offerer level of the feature of the	o a correction ature), diffication of the above 21.900. The enters for A is stated too ant is today adjacent correquirement of -52dBm. In the concoverage requirement is to a coverage requir	feature) c categorie diacent C day. not writte hannel in nt of 33dE The UE t fficient AC ge and ca	chanren as terfer B is or behave CS ca	gene er po nly tes vior fo pabil y. eral a	Use or 2 2 a) R96 R97 R98 R99 Rel- Rel- electivity ral requir int. sted with or interfer lity with h	(GS) (Re (Re (Re (Re (Re (Re (Re -4 (Re -5 (Re -6 (Re (ACS) irr rements (an adja rer levels	following residuals follow	re not tested innel 52dBm ivels ma	is
Summary	•		est paramete	•				•			. 01	
not appro		Se	etwork capacelectivity requise CR.									
Clauses a	affected:	器 7.	5.1 N									
Other spe Affected:		ж х	Test spe	ore specifications pecifications		*	34.1	21				
Other cor	mments:	₩ F	ruivalent CR	's in other F	Releases:	· CR3	33 ca	at F to 2	5 101 vs	5 9 0		

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked \$\mathbb{X}\$ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.5 Adjacent Channel Selectivity (ACS)

Adjacent Channel Selectivity (ACS) is a measure of a receiver's ability to receive a W-CDMA signal at its assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel. ACS is the ratio of the receive filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

7.5.1 Minimum requirement

The ACS shall be better than the value indicated in Table 7.4 for the test parameters specified in Table 7.5 where the BER shall not exceed 0.001.

The UE shall fulfil the minimum requirement specified in Table 7.4 for all values of an adjacent channel interferer up to –25 dBm.

However it is not possible to directly measure the ACS, instead the lower and upper range of test parameters are chosen in Table 7.5 where the BER shall not exceed 0.001.

Table 7.4: Adjacent Channel Selectivity

Power Class	Unit	ACS
3	dB	33
4	dB	33

Table 7.5: Test parameters for Adjacent Channel Selectivity

Parameter	Unit	Level Case 1	Case 2	
DPCH_Ec	dBm/3.84 MHz	<refsens> + 14 dB-103</refsens>	<refsens> + 41 dB</refsens>	
Î _{or}	dBm/3.84 MHz	<refî<sub>or> + 14 dB-92.7</refî<sub>	<u>REFÎ_{or}> + 41 dB</u>	
I _{oac} mean power (modulated)	dBm	-52	<u>-25</u>	
F _{uw} (offset)	MHz	+5 or -5	<u>+5 or -5</u>	
UE transmitted mean	dBm 20 (for Power class 3)		20 (for Power class 3)	
power	UDIII	18 (for Power class 4)	18 (for Power class 4)	

NOTE: The I_{oac} (modulated) signal consists of the common channels needed for tests as specified in Table C.7 and 16 dedicated data channels as specified in Table C.6.