TSG-RAN Meeting #18 *New-Orleans, USA, 0*3 - 06 December 2002

Title: CRs (Release '99 and Rel-4/Rel-5 category A) to TS 25.306

Source: TSG-RAN WG2

Agenda item: 7.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Versio	Versio
R2-023245	agreed	25.306	052	1	R99	UE capability for RLC window size	F	3.6.0	3.7.0
R2-023246	agreed	25.306	053	1	Rel-4	UE capability for RLC window size	A	4.5.0	4.6.0
R2-023247	agreed	25.306	054	1	Rel-5	UE capability for RLC window size	А	5.2.0	5.3.0

3GPP TSG-RAN WG2 #33 Sophia Antipolis, France, 12nd-15th November 2002

R2-023245

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Proposed chang	le a	affects:	UICC app	s#	ME	X Ra	dio A	ccess Netwo	rk	Core Ne	etwork
Title:	Ж	UE cap	ability for R	LC Window	v Size						
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Source:	Ж	LG Elec	ctronics Inc.	•							
Work item code:	. എ	TEI						Date: ೫	15/1	1/2002	
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		F (C	orrection)					2	(GSM	Phase 2)	
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		be found	in 3GPP <u>TR</u>	<u>21.900</u> .				Rel-5	(Relea		
								Rel-6	(Relea	ase 6)	

Reason for change: ೫	RLC capability was missing of the specification 25.306.
Summary of change: #	The missing RLC capability parameter has been added. - Maximum RLC AM window size
	Isolated Impact change analysis:
	The CR has isolated impact on the RLC capability in UE capability.
	The CR is an alignment of stage 2 to stage 3. Since the stage 3 specification is correct, there is no UE impact
Consequences if # not approved:	There is misalignment between stage 2 and stage 3 specifications.
Clauses affected: #	4.3, 5.1, 5.2.1

Other specs affected:	ж	Y	N X X X	Other core specifications Test specifications O&M Specifications	ж	
Other comments:	ж					

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.

4.3 RLC parameters

Total RLC AM buffer size

This is defined as the maximum total buffer size across all RLC AM entities supported by the UE. UTRAN controls that the UE capability can be fulfilled through the following parameters:

- 1. The number of RLC AM entities configured (no explicit RRC parameter);
- 2. UL PDU size;
- 3. DL PDU size;
- 4. Transmission window size (in number of PDUs);
- 5. Receiving window size (in number of PDUs).

The following criterion must be fulfilled in the configuration:

where *i* is the RLC "entity number".

Maximum number of AM entities

This is defined as the maximum number of RLC AM entities supported by the UE.

Maximum RLC AM Window Size

This is defined as the maximum transmission and receiving window size of RLC AM entities supported by the UE.

5.1 Value ranges

Table 5.1: UE radio access	capability	parameter	value ranges
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		UE radio access capability parameter	Value range
DCP parameters		Support for RFC 2507	Yes/No
Der parameters		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression	512, 1024, 2048, 4096, 8192 bytes
		context space	512, 1024, 2040, 4030, 0132 bytes
RLC parameters		Total RLC AM buffer size	2, 10, 50, 100, 150, 500, 1000 kBytes
		Maximum number of AM entities	3, 4, 5, 6, 8, 16, 30
		Maximum RLC AM window size	2047, 4095
PHY parameters	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
	channel	transport blocks being received at an	7680, 8960, 10240, 20480, 40960,
	parameters in	arbitrary time instant	81920, 163840
	downlink	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		convolutionally coded transport blocks	7680, 8960, 10240, 20480, 40960,
		being received at an arbitrary time	81920, 163840
		instant	
		Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		turbo coded transport blocks being	7680, 8960, 10240, 20480, 40960,
		received at an arbitrary time instant	81920, 163840
		Maximum number of simultaneous	4, 8, 16, 32
		transport channels	
		Maximum number of simultaneous CCTrCH	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks received within TTIs that end	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		within the same 10 ms interval	
		Maximum number of TFC	16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo decoding	Yes/No
	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
	channel	transport blocks being transmitted at	7680, 8960, 10240, 20480, 40960,
	parameters in	an arbitrary time instant	81920, 163840
	uplink	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		convolutionally coded transport blocks	7680, 8960, 10240, 20480, 40960,
		being transmitted at an arbitrary time	81920, 163840
		instant	640 4000 0500 0040 5400 6400
		Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		turbo coded transport blocks being	7680, 8960, 10240, 20480, 40960,
		transmitted at an arbitrary time instant Maximum number of simultaneous	81920, 163840
		transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous	1, 2, 3, 4, 5, 6, 7, 8
		CCTrCH of DCH type (TDD only)	., _, _, ., _, _, ., _
		Maximum total number of transport	2, 4, 8, 16, 32, 48, 64, 96, 128, 256,
		blocks transmitted within TTIs that	512
		start at the same time	
		Maximum number of TFC	4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo encoding	Yes/No
	FDD Physical	Maximum number of DPCH/PDSCH	1, 2, 3, 4, 5, 6, 7, 8
	channel	codes to be simultaneously received	., _, o, i, o, o, i, o
	parameters in	Maximum number of physical channel	600, 1200, 2400, 3600, 4800, 7200,
	downlink	bits received in any 10 ms interval	9600, 14400, 19200, 28800, 38400,
		(DPCH, PDSCH, S-CCPCH)	48000, 57600, 67200, 76800
		Support for SF 512	Yes/No
		Support of PDSCH	Yes/No
		Simultaneous reception of SCCPCH and DPCH	Yes/No
		Simultaneous reception of SCCPCH,	Yes/No
	1	DPCH and PDSCH	1

		UE radio access capability parameter	Value range
		Maximum number of simultaneous S- CCPCH radio links	1 NOTE: Only the value 1 is part of this release of the specification
		Support of dedicated pilots for channel estimation	Yes/No
	FDD Physical channel parameters in uplink	Maximum number of DPDCH bits transmitted per 10 ms Support of PCPCH	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600 Yes/No
	TDD physical channel	Maximum number of timeslots per frame	114
	parameters in downlink	Maximum number of physical channels per frame	1, 2, 3224
		Minimum SF Support of PDSCH Maximum number of physical	16, 1 Yes/No 116
	TDD physical channel	channels per timeslot Maximum Number of timeslots per frame	114
	parameters in uplink	Maximum number of physical channels per timeslot	1, 2
	FDD RF	Minimum SF Support of PUSCH	16, 8, 4, 2, 1 Yes/No
RF parameters	parameters	UE power class	3, 4 NOTE: Only power classes 3 and 4 are part of this release of the specification
		Tx/Rx frequency separation	190 MHz 174.8 MHz to 205.2 MHz 134.8 MHz to 245.2 MHz
RF parameters	TDD RF parameters	UE power class	2, 3 NOTE: Only power classes 2 and 3 are part of this release of the specification
		Radio frequency bands Chip rate capability	a), b), c), a+b), a+c), a+b+c) 3.84, 1.28
Multi-mode related	parameters	Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD
Multi-RAT related		Support of GSM	Yes/No (per GSM frequency band)
		Support of multi-carrier	Yes/No
Security paramete	rs	Support of ciphering algorithm UEA0	Yes
1		Support of ciphering algorithm UEA1	Yes
· · -		Support of integrity protection algorithm UIA1	Yes
UE positioning rela	ated parameters	Standalone location method(s) supported	Yes/No
		Network assisted GPS support	Network based / UE based / Both/ None
		GPS reference time capable	Yes/No
		Support for IPDL Support for OTDOA UE based	Yes/No Yes/No
		method Support for Rx-Tx time difference type 2 measurement	Yes/No
		Support for UE Positioning measurement validity in CELL_PCH and URA_PCH RRC states	Yes/No
Measurement relat	ted capabilities	Need for downlink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
		Need for uplink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
General capabilitie	S	Access Stratum release indicator	R99

5.2.1 Combinations of common UE Radio Access Parameters for UL and DL

NOTE: Measurement-related capabilities are not included in the combinations. These capabilities are independent from the supported RABs.

Table 5.2.1.1: UE radio access capability parameter combinations, parameters common for UL and DL

Reference combination of UE Radio Access capability parameters common for UL and	32kbps class	64kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class					
DL											
PDCP parameters											
Support for RFC 2507	No	No/Yes NOTE 1	No/Yes NOTE 1	No/Yes NOTE 1	No/Yes NOTE 1	No/Yes NOTE 1					
Support for loss-less SRNS relocation		No/Yes NOTE 1									
Maximum header compression context space		Not a	pplicable for c	onformance te	esting						
RLC parameters											
Total RLC AM buffer size (kbytes)	10	10	50	50	100	500					
Maximum number of AM entities	4	4	5	6	8	8					
Maximum RLC AM window size	<u>2047/4095</u> <u>NOTE 1</u>	<u>2047/4095</u> <u>NOTE 1</u>	<u>2047/4095</u> <u>NOTE 1</u>	2047/4095 NOTE 1	<u>2047/4095</u> <u>NOTE 1</u>	<u>2047/4095</u> <u>NOTE 1</u>					
Multi-mode related parameters		•			•	•					
Support of UTRA FDD/TDD			FDD / FDD- NO								
Multi-RAT related parameters											
Support of GSM	Yes/No NOTE 1										
Support of multi-carrier	Yes/No NOTE 1										
Security parameters			-								
Support of ciphering algorithm UEA0	Yes										
Support of ciphering algorithm UEA1	Yes										
Support of integrity protection algorithm UIA1	Yes										
UE positioning related parameters											
Standalone location method(s) supported			Yes NO								
Network assisted GPS support		Netwo	ork based / UE NO	based / Both/ FE 1	None						
GPS reference time capable			Yes NO								
Support for IPDL			Yes NO								
Support for OTDOA UE based method	Yes/No NOTE 1										
Support for Rx-Tx time difference type 2 measurement	Yes/No NOTE 1										
Support for UE Positioning measurement validity in CELL_PCH and URA_PCH RRC states	Yes/No NOTE 1										
RF parameters for FDD											
UE power class			3 / NO								
Tx/Rx frequency separation RF parameters for TDD				MHz							

Reference combination of UE Radio Access capability parameters common for UL and DL	32kbps class64kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class			
Radio frequency bands	A	A / b / c / a+b / a+c / b+c / a+b+c NOTE 1						
Chip rate capability	1.28 / 3.84 Mchip/s NOTE 1							
UE power class	2 / NO	-						

NOTE 1: Options represent different combinations that should be supported with Conformance Tests.

3GPP TSG-RAN WG2 #33 Sophia Antipolis, France, 12nd-15th November 2002

R2-023246

CHANGE REQUEST											CR-Form-v7
ж	25.	<mark>306</mark> (CR	53	ж rev	1	ж (Current vers	ion: 4.	5.0	ж
For <u>HELP</u> on	using tl	his form	, see bott	tom of this	s page or	look	at the	pop-up text	over the	ж syn	nbols.
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Source:	₭ <mark>LG</mark>	Electron	nics Inc.								
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Reason for change: #	RLC capability was missing of the specification 25.306.						
Commence of the second	The missing DLC conchility recompton has been added						
Summary of change: #							
	- Maximum RLC AM window size						
Consequences if #	RLC capability parameter will not be correctly defined.						
-							
not approved:							
Clauses affected: #	4.3, 5.1, 5.2.1						
	,,						
	YN						
Other specs #	X Other core specifications #						
-							
affected:	X Test specifications						
	X O&M Specifications						
0.1							
Other comments: #							

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4.3 RLC parameters

Total RLC AM buffer size

This is defined as the maximum total buffer size across all RLC AM entities supported by the UE. UTRAN controls that the UE capability can be fulfilled through the following parameters:

- 1. The number of RLC AM entities configured (no explicit RRC parameter);
- 2. UL PDU size;
- 3. DL PDU size;
- 4. Transmission window size (in number of PDUs);
- 5. Receiving window size (in number of PDUs).

The following criterion must be fulfilled in the configuration:

where *i* is the RLC "entity number".

Maximum number of AM entities

This is defined as the maximum number of RLC AM entities supported by the UE.

Maximum RLC AM Window Size

This is defined as the maximum transmission and receiving window size of RLC AM entities supported by the UE.

5.1 Value ranges

Table 5.1: UE radio access	capability	parameter	value ranges
----------------------------	------------	-----------	--------------

		UE radio access capability parameter	Value range
DCP parameters		Support for RFC 2507	Yes/No
Der parameters		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression	512, 1024, 2048, 4096, 8192 bytes
		context space	512, 1024, 2040, 4030, 0132 bytes
RLC parameters		Total RLC AM buffer size	2, 10, 50, 100, 150, 500, 1000 kBytes
		Maximum number of AM entities	3, 4, 5, 6, 8, 16, 30
		Maximum RLC AM window size	2047, 4095
PHY parameters	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
	channel	transport blocks being received at an	7680, 8960, 10240, 20480, 40960,
	parameters in	arbitrary time instant	81920, 163840
	downlink	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		convolutionally coded transport blocks	7680, 8960, 10240, 20480, 40960,
		being received at an arbitrary time	81920, 163840
		instant	
		Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		turbo coded transport blocks being	7680, 8960, 10240, 20480, 40960,
		received at an arbitrary time instant	81920, 163840
		Maximum number of simultaneous	4, 8, 16, 32
		transport channels	
		Maximum number of simultaneous CCTrCH	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks received within TTIs that end	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		within the same 10 ms interval	
		Maximum number of TFC	16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo decoding	Yes/No
	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
	channel	transport blocks being transmitted at	7680, 8960, 10240, 20480, 40960,
	parameters in	an arbitrary time instant	81920, 163840
	uplink	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		convolutionally coded transport blocks	7680, 8960, 10240, 20480, 40960,
		being transmitted at an arbitrary time	81920, 163840
		instant Maximum sum of number of bits of all	640 4000 0500 0040 5400 6400
			640, 1280, 2560, 3840, 5120, 6400,
		turbo coded transport blocks being	7680, 8960, 10240, 20480, 40960,
		transmitted at an arbitrary time instant Maximum number of simultaneous	81920, 163840
		transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous	1, 2, 3, 4, 5, 6, 7, 8
		CCTrCH of DCH type (TDD only)	., _, _, ., _, _, ., _
		Maximum total number of transport	2, 4, 8, 16, 32, 48, 64, 96, 128, 256,
		blocks transmitted within TTIs that	512
		start at the same time	
		Maximum number of TFC	4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo encoding	Yes/No
	FDD Physical	Maximum number of DPCH/PDSCH	1, 2, 3, 4, 5, 6, 7, 8
	channel	codes to be simultaneously received	., _, o, i, o, o, i, o
	parameters in	Maximum number of physical channel	600, 1200, 2400, 3600, 4800, 7200,
	downlink	bits received in any 10 ms interval	9600, 14400, 19200, 28800, 38400,
		(DPCH, PDSCH, S-CCPCH)	48000, 57600, 67200, 76800
		Support for SF 512	Yes/No
		Support of PDSCH	Yes/No
		Simultaneous reception of SCCPCH and DPCH	Yes/No
		Simultaneous reception of SCCPCH,	Yes/No
	1	DPCH and PDSCH	1

		UE radio access capability parameter	Value range
		Maximum number of simultaneous S- CCPCH radio links	1 NOTE: Only the value 1 is part of this release of the specification
		Support of dedicated pilots for channel estimation	Yes/No
	FDD Physical channel	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600
	parameters in uplink	Support of PCPCH	Yes/No
	TDD physical channel	Maximum number of timeslots per frame	114
	parameters in downlink	Maximum number of physical channels per frame	1, 2, 3224
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Maximum number of physical channels per timeslot	116
	TDD physical channel	Maximum Number of timeslots per frame	114
	parameters in uplink	Maximum number of physical channels per timeslot	1, 2
		Minimum SF	16, 8, 4, 2, 1
		Support of PUSCH	Yes/No
RF parameters	FDD RF	UE power class	3, 4
	parameters		NOTE: Only power classes 3 and 4 are part of this release of the specification
		Tx/Rx frequency separation	190 MHz 174.8 MHz to 205.2 MHz 134.8 MHz to 245.2 MHz
RF parameters	TDD RF parameters	UE power class	2, 3 NOTE: Only power classes 2 and 3 are part of this release of the specification
		Radio frequency bands	a), b), c), a+b), a+c), a+b+c)
		Chip rate capability	3.84, 1.28
Multi-mode relate		Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD
Multi-RAT related	parameters	Support of GSM	Yes/No (per GSM frequency band)
0		Support of multi-carrier	Yes/No
Security parameter	ers	Support of ciphering algorithm UEA0	Yes
		Support of ciphering algorithm UEA1 Support of integrity protection	Yes Yes
		algorithm UIA1	
UE positioning rel	ated parameters	Standalone location method(s) supported	Yes/No
		Network assisted GPS support	Network based / UE based / Both/
			None
		GPS reference time capable	Yes/No
		GPS reference time capable Support for IPDL	Yes/No Yes/No
		GPS reference time capable Support for IPDL Support for OTDOA UE based method	Yes/No Yes/No Yes/No
		GPS reference time capable Support for IPDL Support for OTDOA UE based method Support for Rx-Tx time difference type 2 measurement	Yes/No Yes/No Yes/No
		GPS reference time capable Support for IPDL Support for OTDOA UE based method Support for Rx-Tx time difference type 2 measurement Support for UE Positioning measurement validity in CELL_PCH	Yes/No Yes/No Yes/No
Measurement rela	ated capabilities	GPS reference time capable Support for IPDL Support for OTDOA UE based method Support for Rx-Tx time difference type 2 measurement Support for UE Positioning	Yes/No Yes/No Yes/No Yes/No Yes/No (per frequency band, UTRA
Measurement rela	ated capabilities	GPS reference time capable Support for IPDL Support for OTDOA UE based method Support for Rx-Tx time difference type 2 measurement Support for UE Positioning measurement validity in CELL_PCH and URA_PCH RRC states	Yes/No Yes/No Yes/No Yes/No

5.2.1 Combinations of common UE Radio Access Parameters for UL and DL

NOTE: Measurement-related capabilities are not included in the combinations. These capabilities are independent from the supported RABs.

Table 5.2.1.1: UE radio access capability parameter combinations, parameters common for UL and DL

Reference combination of UE Radio	32 kbps class	64 kbps class	128 kbps	384 kbps	768 kbps	2048 kbps	
Access capability parameters common for UL and DL	class	class	class	class	class	class	
PDCP parameters							
-	Na	Nalvaa	NaVaa	Nella	Nalvas	Nalla	
Support for RFC 2507	No	No/Yes	No/Yes NOTE 1	No/Yes	No/Yes NOTE 1	No/Yes	
Support for RFC 3095	No/Yes	NOTE 1 No/Yes	No/Yes	NOTE 1 No/Yes	No/Yes	NOTE 1 No/Yes	
Support for RFC 3095	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
Support for loss-less SRNS relocation	NOTET	NOTET	NOTE NO/		NOTET	NOTET	
			NO/				
Maximum header compression context		Not a	applicable for c		estina		
space		Nore			Jourig		
RLC parameters							
Total RLC AM buffer size (kbytes)	10	10	50	50	100	500	
Maximum number of AM entities	4	4	5	6	8	8	
	-		-	-	-	_	
Maximum RLC AM window size	2047/4095	2047/4095	2047/4095	2047/4095	2047/4095	2047/4095	
	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
Multi-mode related parameters		•			•		
Support of UTRA FDD			Yes	/No			
	NOTE 1						
Support of UTRA TDD 3.84 Mcps	Yes/No						
	NOTE 1						
Support of UTRA TDD 1.28 Mcps	Yes/No						
		NOTE 1					
Multi-RAT related parameters							
Support of GSM	Yes/No NOTE 1						
Support of multi-carrier			Yes	/No			
			NOT	「E 1			
Security parameters							
Support of ciphering algorithm UEA0			Ye	es			
Support of ciphering algorithm UEA1			Ye	es			
Support of integrity protection algorithm UIA1			Ye	es			
UE positioning related parameters							
Standalone location method(s)			Yes	/No			
supported			NOT	「E 1			
Network assisted GPS support	Network based / UE based / Both/ None						
			NOT	「E 1			
GPS reference time capable			Yes	/No			
	NOTE 1						
Support for IPDL	Yes/No						
	NOTE 1						
Support for OTDOA UE based method							
			NOT				
Support for Rx-Tx time difference type			Yes				
2 measurement			NOT				
Support for UE Positioning			Yes				
measurement validity in CELL_PCH	NOTE 1						
and URA_PCH RRC states							
	1						
RF parameters for FDD	3/4						
RF parameters for FDD			NOT				

Reference combination of UE Radio Access capability parameters common for UL and DL	32 kbps class	64 kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class
Radio frequency bands		A	/b/c/a+b/a		+C	
UE power class	<u>NOTE 1</u> 2 / 3 NOTE 1					
RF parameters for TDD 1.28 Mcps						
Radio frequency bands	A / b / c / a+b / a+c / b+c/ a+b+c NOTE 1					
UE power class	2/3 NOTE 1					

NOTE 1: Options represent different combinations that should be supported with Conformance Tests.

3GPP TSG-RAN WG2 #33 Sophia Antipolis, France, 12nd-15th November 2002

R2-023247

									CR-Form-v7		
H		<mark>25.306</mark> CR	54	жre	ev	1	ж	Current vers	ion:	5.2.0	ж
For <u>HELP</u> on	us	ing this form, see l	bottom of thi	s pag	e or l	look	at th	e pop-up text	over	the X syr	nbols.
Proposed chang	e ai	f fects: UICC ap	ps#	MI	EX	Rac	A oil	ccess Networ	k 📃	Core Ne	etwork
Title:	ж	UE capability for I	RLC Window	v Size							
Source:	ж	LG Electronics Ind	С.								
Work item code:	ж	TEI						<i>Date:</i>	15/1	11/2002	
Category:	[A Use <u>one</u> of the follow F (correction) A (corresponds B (addition of fe C (functional m D (editorial mod Detailed explanations be found in 3GPP <u>TF</u>	to a correction eature), odification of dification) s of the above	on in a feature	e)		elease	Release: ₩ Use <u>one</u> of 2 ≈) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	the fol (GSM (Relea (Relea (Relea (Relea (Relea		pases:

Reason for change: अ	RLC capability was missing of the specification 25.306.
Summary of change: भ्र	The missing RLC capability parameter has been added Maximum RLC AM window size
Consequences if 🛛 🕷	RLC capability parameter will not be correctly defined.
not approved:	
Clauses affected: %	4.3, 5.1, 5.2.1
Other specs ж affected:	Y N X Other core specifications # X Test specifications # X O&M Specifications #
Other comments: #	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <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.

4.3 RLC and MAC-hs parameters

Total RLC AM and MAC-hs buffer size

When HS-DSCH is not configured this is defined as the maximum total buffer size across all RLC AM entities supported by the UE. When HS-DSCH is configured this is defined as the maximum total buffer size across all MAC-hs reordering entities and all RLC AM entities supported by the UE. UTRAN controls that the UE capability can be fulfilled through the following parameters:

- 1. The number of RLC AM entities configured (no explicit RRC parameter);
- 2. UL PDU size;
- 3. DL PDU size;
- 4. Transmission window size (in number of PDUs);
- 5. Receiving window size (in number of PDUs);
- 6. MAC-hs reordering buffer size.

The following criterion must be fulfilled in the configuration at all times:

```
\begin{aligned}
&\#\text{RLC} \_ AM\_ en \text{ tities} \\
&\sum_{i=1} & \text{Transm } i \ s \ s \ i \ o \ n\_window \ \_ \ size_i & (UL\_AMD\_PDU\_ \ size_i & - \ AMD\_Header\_size \ ) + \\
&\#\text{RLC}\_AM\_ en \text{ tities} \\
&\sum_{i=1} & \text{Receiving} \ \_ \ window \ \_ \ size_i & (DL\_AMD\_PDU\_ \ size_i & - \ AMD\_Header\_size \ ) + \\
&\#MAC-hs\_reordering\_entities \\
&\sum_{j=1} & MAC - hs\_reordering\_entity\_buffer\_size_j \\
&\leq & \text{Total\_buffer\_size}
\end{aligned}
```

where *i* is the RLC "entity number".

Maximum number of AM entities

This is defined as the maximum number of RLC AM entities supported by the UE.

Maximum RLC AM Window Size

This is defined as the maximum transmission and receiving window size of RLC AM entities supported by the UE.

Table 5.1: UE radio access capability parameter value ranges
--

		UE radio access capability parameter	Value range
PDCP parameters		Support for RFC 2507	Yes/No
-DOF parameters		Support for RFC 3095	Yes/No
		Support for RFC 3095 context	Yes/No
		relocation	
		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression context space	512, 1024, 2048, 4096, 8192 bytes
RLC and MAC-hs parameters		Total RLC AM and MAC-hs buffer size	2, 10, 50, 100, 150, 500, 1000 kBytes
		Maximum number of AM entities	3, 4, 5, 6, 8, 16, 30
		Maximum RLC AM window size	2047, 4095
PHY parameters	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
-iii parameters	channel		7680, 8960, 10240, 20480, 40960,
		transport blocks being received at an	81920, 163840
	parameters in downlink	arbitrary time instant	
	downiink	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		convolutionally coded transport blocks	7680, 8960, 10240, 20480, 40960,
		being received at an arbitrary time	81920, 163840
		instant	
		Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		turbo coded transport blocks being	7680, 8960, 10240, 20480, 40960,
		received at an arbitrary time instant	81920, 163840
		Maximum number of simultaneous transport channels	4, 8, 16, 32
		Maximum number of simultaneous CCTrCH	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks received within TTIs that end	4, 8, 16, 32, 48, 64, 96, 128, 256, 51
		within the same 10 ms interval	
		Maximum number of TFC	16, 32, 48, 64, 96, 128, 256, 512,
			1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo decoding	Yes/No
	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
	channel	transport blocks being transmitted at	7680, 8960, 10240, 20480, 40960,
	parameters in	an arbitrary time instant	81920, 163840
	uplink	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
	upinin	convolutionally coded transport blocks	7680, 8960, 10240, 20480, 40960,
		being transmitted at an arbitrary time	81920, 163840
		instant Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
		turbo coded transport blocks being	7680, 8960, 10240, 20480, 40960,
		transmitted at an arbitrary time instant	81920, 163840
		Maximum number of simultaneous	2, 4, 8, 16, 32
		transport channels	2, 1 , 0, 10, 02
		Maximum number of simultaneous	1, 2, 3, 4, 5, 6, 7, 8
		CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 3, 0, 7, 0
		Maximum total number of transport	2, 4, 8, 16, 32, 48, 64, 96, 128, 256,
		blocks transmitted within TTIs that	512 512 512 512 512 512 512 512 512 512
		start at the same time	
		Maximum number of TFC	4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo encoding	Yes/No
	FDD Physical	Maximum number of DPCH/PDSCH	1, 2, 3, 4, 5, 6, 7, 8
	channel	codes to be simultaneously received	· · · · · · · · · · ·
	parameters in	Maximum number of physical channel	600, 1200, 2400, 3600, 4800, 7200,
	downlink	bits received in any 10 ms interval	9600, 14400, 19200, 28800, 38400,
		(DPCH, PDSCH, S-CCPCH)	48000, 57600, 67200, 76800
		Support for SF 512	Yes/No
		Support of PDSCH	Yes/No

		UE radio access capability parameter	Value range
		Support of HS-PDSCH	Yes/No
		Simultaneous reception of SCCPCH and DPCH	Yes/No
		Simultaneous reception of SCCPCH, DPCH and PDSCH	Yes/No
		Maximum number of simultaneous S- CCPCH radio links	1 NOTE: Only the value 1 is part of this release of the specification
		Support of dedicated pilots for channel estimation	Yes
	FDD Physical channel	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600
	parameters in uplink	Support of PCPCH	Yes/No
	TDD 3.84 Mcps physical channel	Maximum number of timeslots per frame	114
	parameters in downlink	Maximum number of physical channels per frame	1, 2, 3224
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Support of HS-PDSCH	Yes/No
		Maximum number of physical channels per timeslot	116
	TDD 3.84 Mcps physical channel	Maximum Number of timeslots per frame	114
	parameters in uplink	Maximum number of physical channels per timeslot	1, 2
		Minimum SF	16, 8, 4, 2, 1
		Support of PUSCH	Yes/No
	TDD 1.28 Mcps physical channel	Maximum number of timeslots per subframe	16
	parameters in downlink	Maximum number of physical channels per subframe	1, 2, 3,, 96
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Support of HS-PDSCH	Yes/No
		Maximum number of physical channels per timeslot	116
	TDD 1.28 Mcps	Support 8PSK Maximum number of timeslots per	Yes/No 16
	physical channel parameters in	subframe Maximum number of physical	1, 2
	uplink	channels per timeslot	
		Minimum SF	16, 8, 4, 2, 1
		Support of 8PSK	Yes/No
DE poromatore	FDD RF	Support of PUSCH	Yes/No
RF parameters	parameters	UE power class	3, 4 NOTE: Only power classes 3 and 4 are part of this release of the specification
		Tx/Rx frequency separation	190 MHz 174.8 MHz to 205.2 MHz 134.8 MHz to 245.2 MHz
RF parameters	TDD 3.84 Mcps RF parameters	UE power class	2, 3 NOTE: Only power classes 2 and 3 are part of this release of the specification
		Radio frequency bands	a), b), c), a+b), a+c), b+c), a+b+c)
	TDD 1.28 Mcps	UE power class	2, 3
	RF parameters	Radio frequency bands	a), b), c), a+b), a+c), b+c), a+b+c)
Multi-mode related		Support of UTRA FDD	Yes/No
	•	Support of UTRA TDD 3.84 Mcps	Yes/No
			103/110

	UE radio access capability	Value range
	parameter	
Multi-RAT related parameters	Support of GSM	Yes/No (per GSM frequency band)
	Support of multi-carrier	Yes/No
Security parameters	Support of ciphering algorithm UEA0	Yes
	Support of ciphering algorithm UEA1	Yes
	Support of integrity protection algorithm UIA1	Yes
UE positioning related parameters	Standalone location method(s) supported	Yes/No
	Network assisted GPS support	Network based / UE based / Both/ None
	GPS reference time capable	Yes/No
	Support for IPDL	Yes/No
	Support for OTDOA UE based method	Yes/No
	Support for Rx-Tx time difference type 2 measurement	Yes/No
	Support for UE Positioning measurement validity in CELL_PCH and URA_PCH RRC states	Yes/No
Measurement related capabilities	Need for downlink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
	Need for uplink compressed mode	Yes/No (per frequency band, UTRA mode and RAT)
General capabilities	Access Stratum release indicator	R99, REL-4
DL capabilities with simultaneous HS- DSCH	DL capability with simultaneous HS- DSCH configuration	32 kbps, 64 kbps, 128 kbps, 384 kbps

5.2.1 Combinations of common UE Radio Access Parameters for UL and DL

NOTE: Measurement-related capabilities are not included in the combinations. These capabilities are independent from the supported RABs.

Table 5.2.1.1: UE radio access capability parameter combinations, parameters common for UL and DL

Reference combination of UE Radio Access capability parameters	32 kbps class	64 kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class			
common for UL and DL									
PDCP parameters									
Support for RFC 2507	No	No/Yes	No/Yes	No/Yes	No/Yes	No/Yes			
		NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1			
Support for RFC 3095	No/Yes	No/Yes	No/Yes	No/Yes	No/Yes	No/Yes			
	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1			
Support for RFC 3095 context			No/	Yes					
relocation		NOTE 1							
Support for loss-less SRNS relocation			No/	Yes					
			NO	「E 1					
Maximum header compression context		Not a	applicable for c	onformance te	esting				
space					C C				
RLC parameters									
Total RLC AM buffer size (kbytes)	10	10	50	50	100	500			
Maximum number of AM entities	4	4	5	6	8	8			
	•			J J	, J	Ĭ			
Maximum RLC AM window size	2047/4095	2047/4095	2047/4095	2047/4095	2047/4095	2047/4095			
Maximum rec Ain window size	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1			
Multi-mode related parameters									
Support of OTRA FDD	Yes/No								
	NOTE 1								
Support of UTRA TDD 3.84 Mcps	Yes/No								
	NOTE 1								
Support of UTRA TDD 1.28 Mcps	Yes/No								
	NOTE 1								
Multi-RAT related parameters									
Support of GSM	Yes/No								
			NO						
Support of multi-carrier	Yes/No								
			NO	FE 1					
Security parameters									
Support of ciphering algorithm UEA0			Ye	es					
Support of ciphering algorithm UEA1			Ye	es					
Support of integrity protection			Y	es					
algorithm UIA1									
UE positioning related parameters									
Standalone location method(s)			Yes	/No					
supported			NO						
Network assisted GPS support		Netwo	ork based / UE		None				
Network assisted Or O support		Netwo	NO ⁻		NONE				
GPS reference time capable									
GFS Telefence line capable	Yes/No								
Support for IDDI	NOTE 1								
Support for IPDL	Yes/No								
	NOTE 1								
Support for OTDOA UE based method									
	NOTE 1								
2 measurement			NO	「E 1					
Support for Rx-Tx time difference type 2 measurement Support for UE Positioning			NO ⁻ Yes	ГЕ 1 /No					
2 measurement Support for UE Positioning measurement validity in CELL_PCH			NO	ГЕ 1 /No					
2 measurement Support for UE Positioning measurement validity in CELL_PCH and URA_PCH RRC states			NO ⁻ Yes	ГЕ 1 /No					
2 measurement Support for UE Positioning measurement validity in CELL_PCH			NO ⁻ Yes	ГЕ 1 /No					
2 measurement Support for UE Positioning measurement validity in CELL_PCH and URA_PCH RRC states			NO ⁻ Yes	ΓΕ 1 /Νο ΓΕ 1					

Reference combination of UE Radio Access capability parameters common for UL and DL	32 kbps class	64 kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class	
Tx/Rx frequency separation	190 MHz						
RF parameters for TDD 3.84 Mcps	5						
Radio frequency bands	A / b / c / a+b / a+c / b+c / a+b+c NOTE 1						
UE power class	2 / 3 NOTE 1						
RF parameters for TDD 1.28 Mcps							
Radio frequency bands	A / b / c / a+b / a+c / b+c/ a+b+c NOTE 1						
UE power class			= -	/ 3 TE 1			

NOTE 1: Options represent different combinations that should be supported with Conformance Tests.