TSG-RAN Meeting #18 ***RP-020717***

***New-Orleans, USA, 03* - 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	A	5.2.0	5.3.0

3GPP TSG-RAN WG2 #33 ***R2-023245***
Sophia Antipolis, France, 12nd-15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.306** **CR** **52** ⌘ **rev** **1** ⌘ Current version: **3.6.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	UE capability for RLC Window Size
Source:	⌘	LG Electronics Inc.
Work item code:	⌘	TEI
Date:	⌘	15/11/2002
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	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:	⌘	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 http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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:

$$\sum_{i=1}^{\#RLC\_AM\_entities} Transmission\_window\_size \bullet (UL\_AMD\_PDU\_size - AMD\_Header\_size) + \sum_{i=1}^{\#RLC\_AM\_entities} Receiving\_window\_size \bullet (DL\_AMD\_PDU\_size - AMD\_Header\_size) \leq Total\_RLC\_buffer\_size$$

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
PDCP parameters		Support for RFC 2507	Yes/No
		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression context space	512, 1024, 2048, 4096, 8192 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 channel parameters in downlink	Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 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 within the same 10 ms interval	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		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 channel parameters in uplink	Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum number of simultaneous transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks transmitted within TTIs that start at the same time	2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		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 channel parameters in downlink	Maximum number of DPCH/PDSCH codes to be simultaneously received	1, 2, 3, 4, 5, 6, 7, 8
		Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)	600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 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, DPCH and PDSCH	Yes/No

		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	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600
		Support of PCPCH	Yes/No
	TDD physical channel parameters in downlink	Maximum number of timeslots per frame	1..14
		Maximum number of physical channels per frame	1, 2, 3..224
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Maximum number of physical channels per timeslot	1..16
	TDD physical channel parameters in uplink	Maximum Number of timeslots per frame	1..14
		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 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	a), b), c), a+b), a+c), a+b+c)
		Chip rate capability	3.84, 1.28
Multi-mode related parameters		Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD
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

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 DL	32kbps class	64kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class
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 applicable for conformance testing					
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 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1
Multi-mode related parameters						
Support of UTRA FDD/TDD	FDD / FDD+TDD / TDD NOTE 1					
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 NOTE 1					
Network assisted GPS support	Network based / UE based / Both/ None NOTE 1					
GPS reference time capable	Yes/No NOTE 1					
Support for IPDL	Yes/No NOTE 1					
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 / 4 NOTE 1					
Tx/Rx frequency separation	190 MHz					
RF parameters for TDD						

Reference combination of UE Radio Access capability parameters common for UL and DL	**32kbps class**	**64kbps class**	**128 kbps class**	**384 kbps class**	**768 kbps class**	**2048 kbps class**
Radio frequency bands	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 / 3 NOTE 1					

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

3GPP TSG-RAN WG2 #33 ***R2-023246***
Sophia Antipolis, France, 12nd-15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.306** **CR** **53** ⌘ **rev** **1** ⌘ Current version: **4.5.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	UE capability for RLC Window Size
Source:	⌘	LG Electronics Inc.
Work item code:	⌘	TEI
Date:	⌘	15/11/2002
Category:	⌘	**A**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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Use one of the following releases:

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R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	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
Consequences if not approved:	⌘	RLC capability parameter will not be correctly defined.

Clauses affected:	⌘	4.3, 5.1, 5.2.1

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

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:

$$\sum_{i=1}^{\#RLC\_AM\_entities} Transmission\_window\_size \bullet (UL\_AMD\_PDU\_size - AMD\_Header\_size) + \sum_{i=1}^{\#RLC\_AM\_entities} Receiving\_window\_size \bullet (DL\_AMD\_PDU\_size - AMD\_Header\_size) \leq Total\_RLC\_buffer\_size$$

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
PDCP parameters		Support for RFC 2507	Yes/No
		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression context space	512, 1024, 2048, 4096, 8192 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 channel parameters in downlink	Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 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 within the same 10 ms interval	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		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 channel parameters in uplink	Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum number of simultaneous transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks transmitted within TTIs that start at the same time	2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		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 channel parameters in downlink	Maximum number of DPCH/PDSCH codes to be simultaneously received	1, 2, 3, 4, 5, 6, 7, 8
		Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)	600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 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, DPCH and PDSCH	Yes/No

		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	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600
		Support of PCPCH	Yes/No
	TDD physical channel parameters in downlink	Maximum number of timeslots per frame	1..14
		Maximum number of physical channels per frame	1, 2, 3..224
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Maximum number of physical channels per timeslot	1..16
	TDD physical channel parameters in uplink	Maximum Number of timeslots per frame	1..14
		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 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	a), b), c), a+b), a+c), a+b+c)
		Chip rate capability	3.84, 1.28
Multi-mode related parameters		Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD
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

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 DL	32 kbps class	64 kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class
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 RFC 3095	No/Yes NOTE 1	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 applicable for conformance testing					
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 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 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 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 NOTE 1					
Network assisted GPS support	Network based / UE based / Both/ None NOTE 1					
GPS reference time capable	Yes/No NOTE 1					
Support for IPDL	Yes/No NOTE 1					
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 / 4 NOTE 1					
Tx/Rx frequency separation	190 MHz					
RF parameters for TDD 3.84 Mcps						

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 / 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	2 / 3 NOTE 1					

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

3GPP TSG-RAN WG2 #33 ***R2-023247***
Sophia Antipolis, France, 12nd-15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.306** **CR** **54** ⌘ **rev** **1** ⌘ Current version: **5.2.0** ⌘

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Source:	⌘	LG Electronics Inc.
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Date:	⌘	15/11/2002
Category:	⌘	**A**
Release:	⌘	REL-5

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Use one of the following releases:

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Reason for change:	⌘	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
Consequences if not approved:	⌘	RLC capability parameter will not be correctly defined.

Clauses affected:	⌘	4.3, 5.1, 5.2.1

		Y	N		
Other specs affected:	⌘		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 http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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:

$$\sum_{i=1}^{\#RLC\_AM\_entities} Transmission\_window\_size_i \bullet (UL\_AMD\_PDU\_size_i - AMD\_Header\_size) + \sum_{i=1}^{\#RLC\_AM\_entities} Receiving\_window\_size_i \bullet (DL\_AMD\_PDU\_size_i - AMD\_Header\_size) + \sum_{j=1}^{\#MAC-hs\_reordering\_entities} MAC-hs\_reordering\_entity\_buffer\_size_j \leq Total\_buffer\_size$$

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
PDCP parameters		Support for RFC 2507	Yes/No
		Support for RFC 3095	Yes/No
		Support for RFC 3095 context relocation	Yes/No
		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 channel parameters in downlink	Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 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 within the same 10 ms interval	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		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 channel parameters in uplink	Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all convolutionally coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum sum of number of bits of all turbo coded transport blocks being transmitted at an arbitrary time instant	640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840
		Maximum number of simultaneous transport channels	2, 4, 8, 16, 32
		Maximum number of simultaneous CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 5, 6, 7, 8
		Maximum total number of transport blocks transmitted within TTIs that start at the same time	2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		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 channel parameters in downlink	Maximum number of DPCH/PDSCH codes to be simultaneously received	1, 2, 3, 4, 5, 6, 7, 8
		Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)	600, 1200, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 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 parameters in uplink	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 9600, 19200, 28800, 38400, 48000, 57600
		Support of PCPCH	Yes/No
	TDD 3.84 Mcps physical channel parameters in downlink	Maximum number of timeslots per frame	1..14
		Maximum number of physical channels per frame	1, 2, 3..224
		Minimum SF	16, 1
		Support of PDSCH	Yes/No
		Support of HS-PDSCH	Yes/No
		Maximum number of physical channels per timeslot	1..16
	TDD 3.84 Mcps physical channel parameters in uplink	Maximum Number of timeslots per frame	1..14
		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 parameters in downlink	Maximum number of timeslots per subframe	1..6
		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	1..16
		Support 8PSK	Yes/No
	TDD 1.28 Mcps physical channel parameters in uplink	Maximum number of timeslots per subframe	1..6
		Maximum number of physical channels per timeslot	1, 2
		Minimum SF	16, 8, 4, 2, 1
		Support of 8PSK	Yes/No
		Support of PUSCH	Yes/No
RF parameters	FDD RF 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 RF parameters	UE power class	2, 3
		Radio frequency bands	a), b), c), a+b), a+c), b+c), a+b+c)
Multi-mode related parameters		Support of UTRA FDD	Yes/No
		Support of UTRA TDD 3.84 Mcps	Yes/No
		Support of UTRA TDD 1.28 Mcps	Yes/No

	UE radio access capability parameter	Value range
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 common for UL and DL	32 kbps class	64 kbps class	128 kbps class	384 kbps class	768 kbps class	2048 kbps class
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 RFC 3095	No/Yes NOTE 1	No/Yes NOTE 1	No/Yes NOTE 1	No/Yes NOTE 1	No/Yes NOTE 1	No/Yes NOTE 1
Support for RFC 3095 context relocation	No/Yes NOTE 1					
Support for loss-less SRNS relocation	No/Yes NOTE 1					
Maximum header compression context space	Not applicable for conformance testing					
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 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 NOTE 1	2047/4095 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 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 NOTE 1					
Network assisted GPS support	Network based / UE based / Both/ None NOTE 1					
GPS reference time capable	Yes/No NOTE 1					
Support for IPDL	Yes/No NOTE 1					
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 / 4 NOTE 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						
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	2 / 3 NOTE 1					

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