TSG-RAN Meeting #13 Beijing, China, 18 - 21 September 2001

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

Source: TSG-RAN WG2

Agenda item: 8.2.3

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-012030	agreed	25.306	016	1	R99	Maximum number of simultaneous transport channels	F	3.2.0	3.3.0
R2-012031	agreed	25.306	017		Rel-4	Maximum number of simultaneous transport channels	Α	4.1.0	4.2.0
R2-011903	agreed	25.306	018		R99 Clarification of FDD physical channel parameters		F	3.2.0	3.3.0
R2-012016	agreed	25.306	019		Rel-4	Clarification of FDD physical channel parameters	Α	4.1.0	4.2.0
R2-011972	agreed	25.306	020		R99	Support of dedicated pilots for channel estimation	F	3.2.0	3.3.0
R2-012017	agreed	25.306	021		Rel-4	Support of dedicated pilots for channel estimation	Α	4.1.0	4.2.0
R2-012117	agreed	25.306	022	1	R99	Correction of UE capabilities regarding Rx-Tx time difference type 2 measurements	F	3.2.0	3.3.0
R2-012153	agreed	25.306	023		Rel-4	Correction of UE capabilities regarding Rx-Tx time difference type 2 measurements	A	4.1.0	4.2.0

		CHAN	IGE REC	HIEGT		(CR-Form-v4
		CHAN	IGE REG				
*	25	.306 CR 016	₩ ev	r1 ^{# (}	Current versi	on: 3.2.0	*
For <u>HELP</u> on	using	this form, see bottom	of this page or	look at the	pop-up text o	over the % sym	bols.
Proposed change	roposed change affects: (U)SIM ME/UE Radio Access Network Core Network						
Title:	₩ <mark>M</mark> a	aximum number of sim	ultaneous trar	sport chann	nels		
Source:	₩ TS	G-RAN WG2					
Work item code:	₩ TE	I			Date: ₩	01-07-03	
Category:	Deta	one of the following cate F (correction) A (corresponds to a co B (addition of feature), C (functional modification alled explanations of the bound in 3GPP TR 21.900	rrection in an eation of feature) n) above categorie	nrlier release)	Use <u>one</u> of t 2	R99 the following release (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)	ases:
Reason for chang	ge: Ж	Simultaneous recept in table 5.2.2.1 refer yet mentioned in 25.3 and BCH in order to New definition of CCT	to the time, wh 302. <u>The CCT</u> align with RAN	en this trans CH definition 11 terminologi	sport channe on was chang gy.	el combination v ged for RACH, (was not
Summary of char	nge: ₩	In table 5.2.2.1 the cell and the BCH of table. The same A Note 4 transport channels" the BCH of the neighbour of BCH (neighbour of 25.302 at RAN2#18 A note is added in Table only), that the RACH of the RACH of the neighbour of the neighbour of BCH (neighbour of BCH), that the RACH of the neighbour of the nei	is also added so that it is clathbour cells. (Ton, but only by cell) and one cells, and this characteristics align the number of the cells and the number of the cells and the number of the cells align the cells a	for the row 'arified that the his table en the introductor more DCH age was forgular mumb contained in the table ers in the t	"Maximum none given num try is not affection of the sand zero of the stated number of simultantes in such a w	umber of simultaber does not contain the number of simultaber does not contain the contain	aneous ontain ange of ception in as. (TDD
Consequences if not approved:	* *	Unclear specificatio		Hence the ch	anges are bac	kward compatibl	e.
Clauses affected	: X X		fications 9	25,306 v	4.1.0, CR 01	7	
affected:	46	Other core specification O&M Specification	ns	23.300 V	4. 1.0, CR UI	,	

Other comments:

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- 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.

5.2.2 Combinations of UE Radio Access Parameters for DL

Table 5.2.2.1: UE radio access capability parameter combinations, DL parameters

Reference combination of UE Radio Access capability parameters in DL	32kbps class	64kbps class	128kbps class	384kbps class	768kbps class	2048kbps class
Transport channel parameters						
Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640	3840	3840	6400	10240	20480
Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640	640	640	640	640	640
Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	NA	3840	3840	6400	10240	20480
Maximum number of simultaneous transport channels	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	16 <u>NOTE 34</u>
Maximum number of simultaneous CCTrCH (FDD)	1 NOTE 3	2/1 NOTE 2 NOTE 3	2/1 NOTE 2 NOTE 3	2/1 NOTE 2 NOTE 3	2 NOTE 3	2 NOTE 3
Maximum number of simultaneous CCTrCH (TDD)	2 NOTE 3	3 NOTE 3	3 NOTE 3	3 NOTE 3	4 NOTE 3	4 NOTE 3
Maximum total number of transport blocks received within TTIs that end at the same time	8	8	16	32	64	96
Maximum number of TFC in the TFCS	32	48	96	128	256	1024
Maximum number of TF	32	64	64	64	128	256
Support for turbo decoding	No	Yes	Yes	Yes	Yes	Yes
Physical channel parameters (FDD)						
Maximum number of DPCH/PDSCH codes to be simultaneously received	1	2/1 NOTE 2	2/1 NOTE 2	3	3	3
Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH).	1200	3600/2400 NOTE2	7200/4800 NOTE2	19200	28800	57600
Support for SF 512	No	No	No	No	No	No
Support of PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	No/Yes NOTE 1	Yes	Yes
Maximum number of simultaneous S- CCPCH radio links	1	1	1	1	1	1
Physical channel parameters (TDD)						
Maximum number of timeslots per frame	1	2	4	5	10	12
Maximum number of physical channels per frame	8	9	14	28	64	136
Minimum SF	16	16	16	1/16 NOTE 1	1/16 NOTE 1	1/16 NOTE 1
Support of PDSCH	Yes/No NOTE 1	Yes	Yes	Yes	Yes	Yes
Maximum number of physical channels per timeslot	8	9	9	9	9	13

NOTE 1: Options represent different combinations that should be supported with conformance tests.

NOTE 2: Options depend on the support of PDSCH. The highest value is required if PDSCH is supported.

NOTE 3: The given number does not contain the BCH_CCTrCH of the current cell nor of the neighbour cells.

NOTE 4: The given number does not contain the BCH of the neighbour cell.

5.2.3 Combinations of UE Radio Access Parameters for UL

Table 5.2.3.1: UE radio access capability parameter combinations, UL parameters

Reference combination of UE Radio Access capability parameters in UL	32kbps class	64kbps class	128kbps class	384kbps class	768kbps class
Transport channel parameters					
Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant	640	3840	3840	6400	10240
Maximum sum of number of bits of all convolutionally coded transport blocks being transmitted at an arbitrary time instant	640	640	640	640	640
Maximum sum of number of bits of all turbo coded transport blocks being transmitted at an arbitrary time instant	NA	3840	3840	6400	10240
Maximum number of simultaneous transport channels	4	8	8	8	8
Maximum number of simultaneous CCTrCH(TDD only)	1 <u>NOTE 3</u>	2 <u>NOTE 3</u>	2 <u>NOTE 3</u>	2 <u>NOTE 3</u>	2 <u>NOTE 3</u>
Maximum total number of transport blocks transmitted within TTIs that start at the same time	4	8	8	16	32
Maximum number of TFC in the TFCS	16	32	48	64	128
Maximum number of TF	32	32	32	32	64
Support for turbo encoding	No	Yes	Yes	Yes	Yes
Physical channel parameters (FDD)					
Maximum number of DPDCH bits transmitted per 10 ms	1200	2400	4800	9600	19200
Simultaneous reception of SCCPCH and DPCH NOTE 2	No	No	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1
Simultaneous reception of SCCPCH, DPCH and PDSCH NOTE 2	No	No	No	No	No
Support of PCPCH	No	No	No	No	No
Physical channel parameters (TDD)					
Maximum Number of timeslots per frame	1	2	3	7	9
Maximum number of physical channels per timeslot	1	1	1	1	2
Minimum SF	8	2	2	2	2
Support of PUSCH	Yes/No NOTE 1	Yes	Yes	Yes	Yes

NOTE 1: Options represent different combinations that should be supported with conformance tests.

NOTE 2: The downlink parameters 'Simultaneous reception of SCCPCH and DPCH' and 'Simultaneous reception of SCCPCH, DPCH and PDSCH' are included in the combinations for uplink as their requirements relate to the uplink data rate. Simultaneous reception of SCCPCH and DPCH is required for the DRAC procedure that is intended for controlling uplink transmissions. In this release of the specification, this is limited to 1 SCCPCH.

NOTE 3: This number does not contain the RACH CCTrCH.

CHANGE REQUEST							
	CHANGE REQUEST						
*	25.306 CR 017						
For <u>HELP</u> on us	ng this form, see bottom of this page or look at the pop-up text over the % symbols.						
Proposed change a	Proposed change affects: (U)SIM ME/UE Radio Access Network Core Network						
Title: 第	Title: ** Maximum number of simultaneous transport channels						
Source: #	TSG-RAN WG2						
Work item code: ₩	TEI Date: # 01-07-03						
ı	Release:						
Reason for change:	Simultaneous reception of BCH (neighbour cell) is contained in 25.302, but figures in table 5.2.2.1 refer to the time, when this transport channel combination was not yet mentioned in 25.302. The CCTrCH definition was changed for RACH, CPCH and BCH in order to align with RAN1 terminology. New definition of CCTrCH concering RACH also affects UL figures for TDD.						
Summary of change	In table 5.2.2.1 the Note 3 is corrected in a way that only both BCH of the current cell and the BCH of the neighbour cells are not contained in the number of the table. The same A Note 4 is also added for the row "Maximum number of simultaneous transport channels" so that it is clarified that the given number does not contain the BCH of the neighbour cells. (This table entry is not affected by the change of the CCTrCH definition, but only by the introduction of the simultaneous reception of BCH (neighbour cell) and one or more DCHs and zero or more DSCHs in 25.302 at RAN2#18, and this change was forgotten in previous corrections. A note is added in Table 5.2.3.1 for maximum number of simultaneous CCTrCHs (TDD only), that the RACH CCTrCH is not contained in the stated number of CCTrCHs. Isolated impact analysis: The proposed changes align the numbers in the tables in such a way that they fit with the new definition of CCTrCH for BCH, RACH, and CPCH, so that the same is expressed as before the new definition was applied. Hence the changes are backward compatible.						
Consequences if not approved:	₩ Unclear specification						
Clauses affected:	₩ 5.2.2 <u>, 5.2.3</u>						
Other specs affected:	# Other core specifications # 25.306 v3.2.0, CR 016r1 Test specifications O&M Specifications						

Other comments:

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

5.2.2 Combinations of UE Radio Access Parameters for DL

Table 5.2.2.1: UE radio access capability parameter combinations, DL parameters

Reference combination of UE Radio Access capability parameters in DL	32kbps class	64kbps class	128kbps class	384kbps class	768kbps class	2048kbps class
Transport channel parameters						
Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640	3840	3840	6400	10240	20480
Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640	640	640	640	640	640
Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	NA	3840	3840	6400	10240	20480
Maximum number of simultaneous transport channels	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	8 <u>NOTE 34</u>	16 <u>NOTE 34</u>
Maximum number of simultaneous CCTrCH (FDD)	1 NOTE 3	2/1 NOTE 2 NOTE 3	2/1 NOTE 2 NOTE 3	2/1 NOTE 2 NOTE 3	2 NOTE 3	2 NOTE 3
Maximum number of simultaneous CCTrCH (TDD)	2 NOTE 3	3 NOTE 3	3 NOTE 3	3 NOTE 3	4 NOTE 3	4 NOTE 3
Maximum total number of transport blocks received within TTIs that end at the same time	8	8	16	32	64	96
Maximum number of TFC in the TFCS	32	48	96	128	256	1024
Maximum number of TF	32	64	64	64	128	256
Support for turbo decoding	No	Yes	Yes	Yes	Yes	Yes
Physical channel parameters (FDD)						
Maximum number of DPCH/PDSCH codes to be simultaneously received	1	2/1 NOTE 2	2/1 NOTE 2	3	3	3
Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH).	1200	3600/2400 NOTE2	7200/4800 NOTE2	19200	28800	57600
Support for SF 512	No	No	No	No	No	No
Support of PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	No/Yes NOTE 1	Yes	Yes
Maximum number of simultaneous S- CCPCH radio links	1	1	1	1	1	1
Physical channel parameters (TDD)						
Maximum number of timeslots per frame	1	2	4	5	10	12
Maximum number of physical channels per frame	8	9	14	28	64	136
Minimum SF	16	16	16	1/16 NOTE 1	1/16 NOTE 1	1/16 NOTE 1
Support of PDSCH	Yes/No NOTE 1	Yes	Yes	Yes	Yes	Yes
Maximum number of physical channels per timeslot	8	9	9	9	9	13

NOTE 1: Options represent different combinations that should be supported with conformance tests.

NOTE 2: Options depend on the support of PDSCH. The highest value is required if PDSCH is supported.

NOTE 3: The given number does not contain the BCH_CCTrCH of the current cell nor of the neighbour cells.

NOTE 4: The given number does not contain the BCH of the neighbour cell.

5.2.3 Combinations of UE Radio Access Parameters for UL

Table 5.2.3.1: UE radio access capability parameter combinations, UL parameters

Reference combination of UE Radio Access capability parameters in UL	32kbps class	64kbps class	128kbps class	384kbps class	768kbps class
Transport channel parameters					
Maximum sum of number of bits of all transport blocks being transmitted at an arbitrary time instant	640	3840	3840	6400	10240
Maximum sum of number of bits of all convolutionally coded transport blocks being transmitted at an arbitrary time instant	640	640	640	640	640
Maximum sum of number of bits of all turbo coded transport blocks being transmitted at an arbitrary time instant	NA	3840	3840	6400	10240
Maximum number of simultaneous transport channels	4	8	8	8	8
Maximum number of simultaneous CCTrCH(TDD only)	1 <u>NOTE 3</u>	2 <u>NOTE 3</u>	2 <u>NOTE 3</u>	2 <u>NOTE 3</u>	2 <u>NOTE 3</u>
Maximum total number of transport blocks transmitted within TTIs that start at the same time	4	8	8	16	32
Maximum number of TFC in the TFCS	16	32	48	64	128
Maximum number of TF	32	32	32	32	64
Support for turbo encoding	No	Yes	Yes	Yes	Yes
Physical channel parameters (FDD)					
Maximum number of DPDCH bits transmitted per 10 ms	1200	2400	4800	9600	19200
Simultaneous reception of SCCPCH and DPCH NOTE 2	No	No	Yes/No NOTE 1	Yes/No NOTE 1	Yes/No NOTE 1
Simultaneous reception of SCCPCH, DPCH and PDSCH NOTE 2	No	No	No	No	No
Support of PCPCH	No	No	No	No	No
Physical channel parameters (TDD)					
Maximum Number of timeslots per frame	1	2	3	7	9
Maximum number of physical channels per timeslot	1	1	1	1	2
Minimum SF	8	2	2	2	2
Support of PUSCH	Yes/No NOTE 1	Yes	Yes	Yes	Yes

NOTE 1: Options represent different combinations that should be supported with conformance tests.

NOTE 2: The downlink parameters 'Simultaneous reception of SCCPCH and DPCH' and 'Simultaneous reception of SCCPCH, DPCH and PDSCH' are included in the combinations for uplink as their requirements relate to the uplink data rate. Simultaneous reception of SCCPCH and DPCH is required for the DRAC procedure that is intended for controlling uplink transmissions. In this release of the specification, this is limited to 1 SCCPCH.

NOTE 3: This number does not contain the RACH CCTrCH.

3GPP TSG-RAN WG2 Meeting #23 Helsinki, Finland, 27th-31st August 2001

CR-Form-v4				
	CHANGE REQUEST			
*	25.306 CR 018 # ev - # Current version: 3.2.0 #			
- 1151.0				
For <u>HELP</u> on u	ng this form, see bottom of this page or look at the pop-up text over the ₩ symbols.			
Proposed change	fects: (U)SIM ME/UE X Radio Access Network X Core Network			
Title: #	Clarification of FDD physical channel parameters			
Source: #	TSG-RAN WG2			
Work item code: ₩	TEI Date: 第 06/08/2001			
Category:	Release: \$\mathbb{R}\$ 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) et found in 3GPP TR 21.900.			
Reason for change	## During discussion of r1-011160 during RAN2#22, it was highlighted that the definitions of the FDD downlink physical channel parameter 'Maximum number physical channel bits received in any 10ms interval (DPCH, PDSCH, S-CCPCH and the FDD uplink physical channel parameter 'Maximum number of DPCH bit per 10ms' are unclear with regard to the compressed mode by spreading factor reduction.	l)' ts		
Summary of chang	The definition of the parameters is reworded to clarify the meaning. A note is added to indicate that compressed mode by spreading factor reduction is not applicable at spreading factor 4. Isolated impact analysis:			
	Corrected functionality: UE capabilities for FDD physical channels and support compressed mode by spreading factor reduction.	for		
	Correction to a function where the specification was not sufficiently explicit. Wor not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.	uld		
Consequences if not approved:	# The definition of these parameters will remain insufficiently explicit. This could lead to UE and network implementations that assume different interpretations o the parameter.	f		
Clauses affected:	% 4.5.3, 4.5.4			
Other specs affected:	# Other core specifications # 25.306 v4.1.0, CR 019 Test specifications O&M Specifications			

Other comments:

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

4.5.3 FDD Physical channel parameters in downlink

Maximum number of DPCH/PDSCH codes to be simultaneously received

Defines the number of codes the UE is capable of receiving in parallel. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability. The capability does not include codes used for S-CCPCH.

Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)

Defines the number of physical channel bits the UE is capable of receiving. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability.

The number of DPCH channel bits indicates the capability of the UE when operating in non-compressed modefor normal, un-compressed mode.

The parameter also indicates the capability of the UE to support compressed mode by spreading factor reduction <u>as</u> <u>follows:</u>

- For parameter values up to and including 9600 bits:
 - the UE shall also be able to support compressed mode by SF spreading factor reduction when operating in normal mode, at any value up to the reported capability.—
- -__For parameter values greater than 9600 bits:
 - the UE shall be able to support compressed mode by spreading factor reduction when operating, in normal mode, at any value up to the greater of:
 - -__half the reported capability; or
 - __9600bits, whichever is greater.

NOTE: Compressed mode by spreading factor reduction is not applicable when operating at spreading factor 4.

Support for SF 512

Defines whether the UE supports spreading factor 512 in downlink or not.

Support of PDSCH

Defines whether the UE supports PDSCH or not.

Simultaneous reception of SCCPCH and DPCH

Defines whether the UE supports simultaneous reception of SCCPCH and DPCH or not.

NOTE: Simultaneous reception of SCCPCH and DPCH, i.e. simultaneous reception of FACH and DCH is required for e.g. DRAC procedure

Simultaneous reception of SCCPCH, DPCH and PDSCH

Defines whether the UE supports simultaneous reception of SCCPCH, DPCH and PDSCH or not. The PDSCH part of this capability is only relevant if the UE supports PDSCH, as covered by the capability "Support of PDSCH".

NOTE: Simultaneous reception of SCCPCH, DPCH and PDSCH, i.e. simultaneous reception of FACH, DCH and DSCH is required for e.g. simultaneous use of DSCH and the DRAC procedure.

Maximum number of simultaneous S-CCPCH radio links

Defines the maximum number of radio links on which the UE is capable of receiving S-CCPCH simultaneously.

4.5.4 FDD physical channel parameters in uplink

Maximum number of DPDCH bits per 10 ms

Defines the maximum number of the DPDCH bits the UE is capable to transmit per 10 ms.

The number of DPDCH channel bits indicates the capability of the UE when operating in non-compressed mode for normal, un-compressed mode. The UE shall also be able to support compressed mode by SF-spreading factor reduction when operating at this value.

NOTE: This capability combines the 'Max number of DPDCH' and 'Minimum SF' capabilities into one capability. Note that no flexibility is lost due to this, as multiple DPDCH is only used for SF=4, i.e. when the number of DPDCH bits exceed a certain value.

NOTE: Compressed mode by spreading factor reduction is not applicable when operating at spreading factor 4.

Support of PCPCH

Defines whether the UE supports PCPCH or not.

NOTE: When CPCH is supported, then simultaneous DPCCH & SCCPCH reception is needed.

3GPP TSG-RAN WG2 Meeting #23 Helsinki, Finland, 27th-31st August 2001

CR-Form-v4				
	CHANGE REQUEST			
*	25.306 CR 019	.0 *		
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the 発	symbols.		
Proposed change a	ffects: 第 (U)SIM ME/UE X Radio Access Network X Core	e Network		
Title: 第	Clarification of FDD physical channel parameters			
Source: 第	TSG-RAN WG2			
Work item code: 器	TEI Date: 第 06/08/20	01		
	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) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	e 2) 996) 997) 998) 999)		
D	De la live di de contra la contra de la contra del la contra de la contra del la contra de la contra del la contra de la contra de la contra de la contra de la contra del la contra de la contra de la contra de la contra del la contra de la contra del la contra de la contra de la contra de la contra de la contra del la contr	- (() -		
Reason for change.	# During discussion of r1-011160 during RAN2#22, it was highlighted the definitions of the FDD downlink physical channel parameter 'Maximum physical channel bits received in any 10ms interval (DPCH, PDSCH, sand the FDD uplink physical channel parameter 'Maximum number of per 10ms' are unclear with regard to the compressed mode by spread reduction.	n number of S-CCPCH)' DPCH bits		
Summary of change	The definition of the parameters is reworded to clarify the meaning. A added to indicate that compressed mode by spreading factor reductio applicable at spreading factor 4.			
	Isolated impact analysis:			
	Corrected functionality: UE capabilities for FDD physical channels and compressed mode by spreading factor reduction.	d support for		
	Correction to a function where the specification was not sufficiently ex not affect implementations behaving like indicated in the CR, would af implementations supporting the corrected functionality otherwise.			
Consequences if not approved:	# The definition of these parameters will remain insufficiently explicit. The lead to UE and network implementations that assume different interpretate parameter.			
Clauses affected:	₩ 4.5.3, 4.5.4			
Other specs affected:	# Other core specifications # 25.306 v3.2.0, CR 018 Test specifications O&M Specifications			

Other comments:

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

4.5.3 FDD Physical channel parameters in downlink

Maximum number of DPCH/PDSCH codes to be simultaneously received

Defines the number of codes the UE is capable of receiving in parallel. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability. The capability does not include codes used for S-CCPCH.

Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)

Defines the number of physical channel bits the UE is capable of receiving. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability.

The number of DPCH channel bits indicates the capability of the UE when operating in non-compressed modefor normal, un-compressed mode.

The parameter also indicates the capability of the UE to support compressed mode by spreading factor reduction <u>as</u> <u>follows:</u>—

- For parameter values up to and including 9600 bits:
 - the UE shall also be able to support compressed mode by SF spreading factor reduction when operating in normal mode, at any value up to the reported capability.—
- -__For parameter values greater than 9600 bits:
 - the UE shall be able to support compressed mode by spreading factor reduction when operating, in normal mode, at any value up to the greater of:
 - -__half the reported capability; or
 - __9600bits, whichever is greater.

NOTE: Compressed mode by spreading factor reduction is not applicable when operating at spreading factor 4.

Support for SF 512

Defines whether the UE supports spreading factor 512 in downlink or not.

Support of PDSCH

Defines whether the UE supports PDSCH or not.

Simultaneous reception of SCCPCH and DPCH

Defines whether the UE supports simultaneous reception of SCCPCH and DPCH or not.

NOTE: Simultaneous reception of SCCPCH and DPCH, i.e. simultaneous reception of FACH and DCH is required for e.g. DRAC procedure

Simultaneous reception of SCCPCH, DPCH and PDSCH

Defines whether the UE supports simultaneous reception of SCCPCH, DPCH and PDSCH or not. The PDSCH part of this capability is only relevant if the UE supports PDSCH, as covered by the capability "Support of PDSCH".

NOTE: Simultaneous reception of SCCPCH, DPCH and PDSCH, i.e. simultaneous reception of FACH, DCH and DSCH is required for e.g. simultaneous use of DSCH and the DRAC procedure.

Maximum number of simultaneous S-CCPCH radio links

Defines the maximum number of radio links on which the UE is capable of receiving S-CCPCH simultaneously.

4.5.4 FDD physical channel parameters in uplink

Maximum number of DPDCH bits per 10 ms

Defines the maximum number of the DPDCH bits the UE is capable to transmit per 10 ms.

The number of DPDCH channel bits indicates the capability of the UE when operating in non-compressed mode for normal, un-compressed mode. The UE shall also be able to support compressed mode by SF-spreading factor reduction when operating at this value.

NOTE: This capability combines the 'Max number of DPDCH' and 'Minimum SF' capabilities into one capability. Note that no flexibility is lost due to this, as multiple DPDCH is only used for SF=4, i.e. when the number of DPDCH bits exceed a certain value.

NOTE: Compressed mode by spreading factor reduction is not applicable when operating at spreading factor 4.

Support of PCPCH

Defines whether the UE supports PCPCH or not.

NOTE: When CPCH is supported, then simultaneous DPCCH & SCCPCH reception is needed.

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	CHANGE REQUEST					
¥ 25	5.306 CR 020					
For <u>HELP</u> on using	g this form, see bottom of this page or look at the pop-up text over the % symbols.					
Proposed change affect	ects: # (U)SIM ME/UE X Radio Access Network X Core Network					
Title: # St	support of dedicated pilots for channel estimation					
Source: # TS	SG-RAN WG2					
Work item code: 第 TE	El					
Det	The correction is fulfilling the decision agreed in TSG-RAN #12 [1] and joint R2/R4 meeting agreements in Berlin July 2001.					
•	affect implementations not supporting it. The corrected functionality would not be complete.					
not approved:						
Clauses affected:	光 4.5.3, 5.1, 5.2.2					
Other specs # affected:	Other core specifications Test specifications O&M Specifications 25.306 v4.1.0, CR 021					
Other comments:	1 ■ [1] RP-010497, Draft Report of the 12th TSG-RAN meeting					

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

4.5.3 FDD Physical channel parameters in downlink

Maximum number of DPCH/PDSCH codes to be simultaneously received

Defines the number of codes the UE is capable of receiving in parallel. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability. The capability does not include codes used for S-CCPCH.

Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)

Defines the number of physical channel bits the UE is capable of receiving. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability.

The number of DPCH channel bits indicates the capability for normal, un-compressed mode.

The parameter also indicates the capability of the UE to support compressed mode by spreading factor reduction. For parameter values up to and including 9600 bits, the UE shall also be able to support compressed mode by SF reduction when operating in normal mode, at any value up to the reported capability. For parameter values greater than 9600 bits, the UE shall be able to support compressed mode by spreading factor reduction when operating, in normal mode, at any value up to half the reported capability or 9600bits, whichever is greater.

Support for SF 512

Defines whether the UE supports spreading factor 512 in downlink or not.

Support of PDSCH

Defines whether the UE supports PDSCH or not.

Simultaneous reception of SCCPCH and DPCH

Defines whether the UE supports simultaneous reception of SCCPCH and DPCH or not.

NOTE: Simultaneous reception of SCCPCH and DPCH, i.e. simultaneous reception of FACH and DCH is required for e.g. DRAC procedure

Simultaneous reception of SCCPCH, DPCH and PDSCH

Defines whether the UE supports simultaneous reception of SCCPCH, DPCH and PDSCH or not. The PDSCH part of this capability is only relevant if the UE supports PDSCH, as covered by the capability "Support of PDSCH".

NOTE: Simultaneous reception of SCCPCH, DPCH and PDSCH, i.e. simultaneous reception of FACH, DCH and DSCH is required for e.g. simultaneous use of DSCH and the DRAC procedure.

Maximum number of simultaneous S-CCPCH radio links

Defines the maximum number of radio links on which the UE is capable of receiving S-CCPCH simultaneously.

Support of dedicated pilots for channel estimation

Defines whether the UE supports dedicated pilots for channel estimation or not.

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
1 DOI parameters		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression	512, 1024, 2048, 4096, 8192 bytes
		context space	0.2, .02., 20.0, .000, 0.02.0,.00
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
PHY parameters	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
1	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 being received at an arbitrary time instant	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 in the TFCS	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 in the TFCS	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	Maximum number of DPCH/PDSCH codes to be simultaneously received	1, 2, 3, 4, 5, 6, 7, 8
	parameters in downlink	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 Simultaneous reception of SCCPCH	Yes/No Yes/No
		and DPCH Simultaneous reception of SCCPCH,	Yes/No
		DPCH and PDSCH	

		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, 960, 19200, 28800, 38400, 48000, 57600 Yes/No
	TDD physical channel parameters in downlink	Maximum number of timeslots per frame Maximum number of physical channels per frame	114
	downlink	Minimum SF Support of PDSCH	16, 1 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 Minimum SF	1, 2
		Support of PUSCH	16,8,4,2,1 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 174.8-205.2 MHz 134.8-245.2 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)
BA III		Chip rate capability	3.84,1.28
Multi-mode related		Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD
Multi-RAT related	parameters	Support of GSM Support of multi-carrier	Yes/No (per GSM frequency band) Yes/No
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 method	Yes/No Yes/No
Measurement rela	ited 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	es	ICS version	R99

5.2.2 Combinations of UE Radio Access Parameters for DL

Table 5.2.2.1: UE radio access capability parameter combinations, DL parameters

Reference combination of UE Radio Access capability parameters in DL	32kbps class	64kbps class	128kbps class	384kbps class	768kbps class	2048kbps class
Transport channel parameters						
Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant	640	3840	3840	6400	10240	20480
Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant	640	640	640	640	640	640
Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant	NA	3840	3840	6400	10240	20480
Maximum number of simultaneous transport channels	8	8	8	8	8	16
Maximum number of simultaneous CCTrCH (FDD)	1 NOTE 3	2/1 NOTE 2 NOTE 3	2/1 NOTE 2 NOTE 3	2/1 NOTE 2 NOTE 3	2 NOTE 3	2 NOTE 3
Maximum number of simultaneous	2	3	3	3	4	4
CCTrCH (TDD)	NOTE 3	NOTE 3	NOTE 3	NOTE 3	NOTE 3	NOTE 3
Maximum total number of transport blocks received within TTIs that end at the same time	8	8	16	32	64	96
Maximum number of TFC in the TFCS	32	48	96	128	256	1024
Maximum number of TF	32	64	64	64	128	256
Support for turbo decoding	No	Yes	Yes	Yes	Yes	Yes
Physical channel parameters (FDD)						
Maximum number of DPCH/PDSCH codes to be simultaneously received	1	2/1 NOTE 2	2/1 NOTE 2	3	3	3
Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH).	1200	3600/2400 NOTE2	7200/4800 NOTE2	19200	28800	57600
Support for SF 512	No	No	No	No	No	No
Support of PDSCH	No	Yes/No NOTE 1	Yes/No NOTE 1	No/Yes NOTE 1	Yes	Yes
Maximum number of simultaneous S- CCPCH radio links	1	1	1	1	1	1
Support of dedicated pilots for channel	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<u>estimation</u>	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1
Physical channel parameters (TDD)						
Maximum number of timeslots per frame	1	2	4	5	10	12
Maximum number of physical channels per frame	8	9	14	28	64	136
Minimum SF	16	16	16	1/16 NOTE 1	1/16 NOTE 1	1/16 NOTE 1
Support of PDSCH	Yes/No NOTE 1	Yes	Yes	Yes	Yes	Yes
Maximum number of physical channels per timeslot	8	9	9	9	9	13

NOTE 1: Options represent different combinations that should be supported with conformance tests.

NOTE 2: Options depend on the support of PDSCH. The highest value is required if PDSCH is supported.

NOTE 3: The given number does not contain the BCH.

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- 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.

4.5.3 FDD Physical channel parameters in downlink

Maximum number of DPCH/PDSCH codes to be simultaneously received

Defines the number of codes the UE is capable of receiving in parallel. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability. The capability does not include codes used for S-CCPCH.

Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH)

Defines the number of physical channel bits the UE is capable of receiving. For DPCH in soft/softer handover, each DPCH is only calculated once in this capability.

The number of DPCH channel bits indicates the capability for normal, un-compressed mode.

The parameter also indicates the capability of the UE to support compressed mode by spreading factor reduction. For parameter values up to and including 9600 bits, the UE shall also be able to support compressed mode by SF reduction when operating in normal mode, at any value up to the reported capability. For parameter values greater than 9600 bits, the UE shall be able to support compressed mode by spreading factor reduction when operating, in normal mode, at any value up to half the reported capability or 9600bits, whichever is greater.

Support for SF 512

Defines whether the UE supports spreading factor 512 in downlink or not.

Support of PDSCH

Defines whether the UE supports PDSCH or not.

Simultaneous reception of SCCPCH and DPCH

Defines whether the UE supports simultaneous reception of SCCPCH and DPCH or not.

NOTE: Simultaneous reception of SCCPCH and DPCH, i.e. simultaneous reception of FACH and DCH is required for e.g. DRAC procedure

Simultaneous reception of SCCPCH, DPCH and PDSCH

Defines whether the UE supports simultaneous reception of SCCPCH, DPCH and PDSCH or not. The PDSCH part of this capability is only relevant if the UE supports PDSCH, as covered by the capability "Support of PDSCH".

NOTE: Simultaneous reception of SCCPCH, DPCH and PDSCH, i.e. simultaneous reception of FACH, DCH and DSCH is required for e.g. simultaneous use of DSCH and the DRAC procedure.

Maximum number of simultaneous S-CCPCH radio links

Defines the maximum number of radio links on which the UE is capable of receiving S-CCPCH simultaneously.

Support of dedicated pilots for channel estimation

Defines whether the UE supports dedicated pilots for channel estimation or not.

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 loss-less SRNS relocation	Yes/No
		Maximum header compression context space	512, 1024, 2048, 4096, 8192 bytes
RLC parameters		Total RLC AM buffer size Maximum number of AM entities	2,10,50,100,150,500,1000 kBytes 3,4,5,6,8,16,30
PHY parameters	Transport	Maximum sum of number of bits of all	640, 1280, 2560, 3840, 5120, 6400,
	channel parameters in	transport blocks being received at an arbitrary time instant	7680, 8960, 10240, 20480, 40960, 81920, 163840
	downlink	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	4, 8, 16, 32
		transport channels Maximum number of simultaneous	1, 2, 3, 4, 5, 6, 7, 8
		CCTrCH 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 in the TFCS	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 in the TFCS	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	600 4200 2400 2000 4000 7000
	parameters in downlink	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
		Support for RFC 2507	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/No
	FDD Physical channel	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 960, 19200, 28800, 38400, 48000, 57600
	parameters in uplink TDD 3.84 Mcps	Support of PCPCH Maximum number of timeslots per	Yes/No 114
	physical channel parameters in downlink	frame Maximum number of physical channels per frame	1,2,3,224
		Minimum SF Support of PDSCH	16, 1 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 Support of PUSCH	16,8,4,2,1 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 Maximum number of physical channels per timeslot	Yes/No 116
	TDD 1.28 Mcps physical channel	Support 8PSK Maximum number of timeslots per subframe	Yes/No 16
	parameters in uplink	Maximum number of physical channels per timeslot	1,2
		Minimum SF	16,8,4,2,1
		Support of 8PSK	Yes/No
RF parameters	FDD RF parameters	Support of PUSCH UE power class	Yes/No 3, 4 NOTE: Only power classes 3 and 4 are part of this release of the specification
		Tx/Rx frequency separation	190 MHz 174.8-205.2 MHz 134.8-245.2 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
	TDD 1.28Mcps	Radio frequency bands UE power class	a), b), c), a+b), a+c), b+c), a+b+c) 2,3
Multi-mode related	RF parameters d parameters	Radio frequency bands Support of UTRA FDD	a), b), c), a+b), a+c), b+c), a+b+c) Yes/No Yes/No
		Support of UTRA TDD 3.84Mcps Support of UTRA TDD 1.28Mcps	Yes/No
Multi-RAT related		Support of GSM Support of multi-carrier	Yes/No (per GSM frequency band) Yes/No
UE positioning rela	ated parameters	Standalone location method(s) supported	Yes/No
		Network assisted GPS support	Network based / UE based / Both/ None

	UE radio access capability parameter	Value range
	Support for RFC 2507	Yes/No
	GPS reference time capable	Yes/No
	Support for IPDL	Yes/No
	Support for OTDOA UE based method	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	ICS version	R99

5.2.2 Combinations of UE Radio Access Parameters for DL

Table 5.2.2.1: UE radio access capability parameter combinations, DL parameters

Access capability parameters in DL class	Reference combination of UE Radio	32kbps	64kbps	128kbps	384kbps	768kbps	2048kbps
Transport channel parameters				•	•	•	
Maximum sum of number of bits of all transport blocks being received at an arbitrary time instant 640		0.0.00	0.000	Class	Class	Class	Class
Transport blocks being received at an arbitrary time instant	·	640	2940	2940	6400	10240	20490
arbitrary time instant Maximum or number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant Maximum sum of number of bits of all twice oded transport blocks being received at an arbitrary time instant Maximum sum of number of bits of all twice coded transport blocks being received at an arbitrary time instant Maximum sum of number of bits of all twice coded transport blocks being received at an arbitrary time instant Maximum number of simultaneous 8 8 8 8 8 8 8 16 transport channels Maximum number of simultaneous 1 2/1 2/1 2/1 2 2 2 2 2 2 2 2 2 2 2 2 2		040	3040	3040	0400	10240	20400
Maximum sum of number of bits of all convolutionally coded transport blocks being received at an arbitrary time instant Maximum number of bits of all turbo coded transport blocks being received at an arbitrary time instant Maximum number of simultaneous received at an arbitrary time instant Maximum number of simultaneous 8	arbitrary time instant						
Convolutionally coded transport blocks being received at an arbitrary time instant Maximum sum of number of bits of all turbo coded transport blocks being received at an arbitrary time instant Maximum number of bits of all turbo coded transport blocks being received at an arbitrary time instant Maximum number of simultaneous		640	640	640	640	640	640
Deing received at an arbitrary time instant Maximum num of number of bits of all turbo coded transport blocks being received at an arbitrary time instant Maximum number of simultaneous		0.0	0.0	0.0	0.0	0.0	0.10
Maximum sum of number of bits of all ultro coded transport blocks being received at an arbitrary time instant Maximum number of simultaneous transport channels 8 8 8 8 16 Maximum number of simultaneous transport channels 1 2/1 2/1 2 2 2 CCTCH (FDD) NOTE 3 NOTE							
Proceived at an arbitrary time instant		NA	3840	3840	6400	10240	20480(1)
Maximum number of simultaneous transport channels 8 8 8 8 8 16 transport channels Maximum number of simultaneous cCTrCH (FDD) 1 2/1 2/1 2 2 2 2 2 2 2 2 2 2 2 3 3 3 4 2 2 2 2 2 2 2 2	turbo coded transport blocks being						` '
Maximum number of simultaneous	Maximum number of simultaneous	8	8	8	8	8	16
NOTE 2							
NOTE 3 NOTE 2 NOTE 3 N		1			2	2	2
Maximum number of simultaneous CCTrCH (TDD) 2 NOTE 3 NOTE 1 NOTE 1	CCTrCH (FDD)						
NOTE 3 N							NOTE 3
Maximum total number of transport blocks received within TTIs that end at the same time Maximum number of TFC in the TFCS 32 48 96 128 256 1024		_	_	_	_	•	
received within TTIs that end at the same time							
Maximum number of TFC in the TFCS 32 48 96 128 256 1024		8	8	16	32	64	96
Maximum number of TFC in the TFCS 32 48 96 128 256 1024 Maximum number of TF 32 64 64 64 128 256 Support for turbo decoding No Yes							
Maximum number of TF 32		00	40	00	400	050	4004
Support for turbo decoding	Maximum number of TFC in the TFCS	32	48	96	128	256	1024
Support for turbo decoding	Maximum number of TE	22	64	6.4	64	120	256
Physical channel parameters (FDD) Maximum number of DPCH/PDSCH 1 2/1 2/1 3 3 3 3 3 3 3 3 3							
Maximum number of DPCH/PDSCH codes to be simultaneously received 1 2/1 NOTE 2 NOTE 2 NOTE 2 3 2 2 2 4		INO	res	res	res	res	res
codes to be simultaneously received NOTE 2 POSCH, S-COPCH Secondary 1 page 1 Secondary 1 page 2 Secondary 2 page 2 NOTE 2 NOTE 2 NOTE 2 NOTE 2 NOTE 3 POSCH 2 POSCH 3 NOTE 4 NOTE 3 NOTE		4	2/4	0/4	2	2	2
Maximum number of physical channel bits received in any 10 ms interval (DPCH, PDSCH, S-CCPCH). 1200 3600/2400 NOTE2 7200/4800 NOTE2 19200 28800 57600 PDSCH, S-CCPCH). No N		1			3	3	3
Received in any 10 ms interval (DPCH, PDSCH, S-CCPCH). NOTE2 NOTE2 NOTE2 NOTE2 NOTE2 NOTE2 NOTE3		1200			10200	20000	F7600
PDSCH, S-CCPCH . Support for SF 512 for DPCH No No No No No No No N		1200			19200	20000	57600
Support for SF 512 for DPCH			INOTEZ	NOTEZ			
NOTE 5		No	No	No	No	No	No
Support of PDSCH		140	140	140	140	140	140
NOTE 1 N		No	Yes/No	Yes/No	Yes	Yes	Yes
Maximum number of simultaneous S-CCPCH radio links 1 2 1 2 4 <t< td=""><td>очерен от точе</td><td></td><td></td><td></td><td>. 55</td><td>. 55</td><td></td></t<>	очерен от точе				. 55	. 55	
CCPCH radio links	Maximum number of simultaneous S-	1			1	1	1
Support of PDSCH Support of							
Support of PDSCH Support of	Support of dedicated pilots for channel	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
Maximum number of timeslots per frame				NOTE 1	NOTE 1	NOTE 1	
Maximum number of timeslots per frame 1 2 4 5 10 12 Maximum number of physical channels per frame 8 9 14 28 64 136 Minimum SF 16 16 16 1/16 NOTE 1 NOT							
Maximum number of physical channels per frame 8 9 14 28 64 136 Minimum SF 16 16 16 16 1/16 NOTE 1 NOTE 1 NOTE 1 NOTE 1							
Description		1	2	4		10	12
Minimum SF 16 16 16 16 1/16 NOTE 1 1/16 NOTE 1 1/16 NOTE 1 Support of PDSCH Yes/No NOTE 1 Yes Y		8	9	14	28	64	136
NOTE 1 NOTE 1 NOTE 1							
Support of PDSCH Yes/No NOTE 1 Yes Yes </td <td>Minimum SF</td> <td>16</td> <td>16</td> <td>16</td> <td></td> <td></td> <td></td>	Minimum SF	16	16	16			
NOTE 1 N							
Maximum number of physical channels per timeslot 8 9 9 9 9 9 13 Physical channel parameters (TDD 1.28Mcps) 1 2 3 4 6 6 Maximum number of timeslots per subframe 1 2 3 4 6 6 Maximum number of physical channels per subframe 8 12 18 43 77 77 Per subframe 16 16 16 1/16 1/16 1 Minimum SF 16 16 16 1/16 NOTE 1 NOTE 1 Support of PDSCH Yes/no Yes Yes Yes Yes Yes	Support of PDSCH		Yes	Yes	Yes	Yes	Yes
Physical channel parameters (TDD	Mariana and Calabara				_	_	40
Physical channel parameters (TDD 1.28Mcps) Maximum number of timeslots per subframe 1 2 3 4 6 6 Maximum number of physical channels per subframe 8 12 18 43 77 77 Minimum SF 16 16 16 1/16 1/16 1/16 1 Support of PDSCH Yes/no Yes Yes Yes Yes Yes Yes		8	9	9	9	9	13
1.28Mcps) Maximum number of timeslots per subframe 1 2 3 4 6 6 Maximum number of physical channels per subframe 8 12 18 43 77 77 Minimum SF 16 16 16 1/16 1/16 1 Support of PDSCH Yes/no Yes Yes Yes Yes Yes							
Maximum number of timeslots per subframe 1 2 3 4 6 6 Maximum number of physical channels per subframe 8 12 18 43 77 77 Minimum SF 16 16 16 1/16 1/16 1/16 1 Support of PDSCH Yes/no Yes Yes Yes Yes Yes							
subframe Maximum number of physical channels per subframe 8 12 18 43 77 77 Minimum SF 16 16 16 1/16 1/16 1 Support of PDSCH Yes/no Yes Yes Yes Yes Yes		1	2	2	1	6	6
Maximum number of physical channels per subframe 8 12 18 43 77 77 Minimum SF 16 16 16 1/16 1/16 1 Support of PDSCH Yes/no Yes Yes Yes Yes Yes		ı		٥	4	б	б
per subframe Incompanies		ρ	12	10	13	77	77
Minimum SF 16 16 16 1/16 1/16 1 Support of PDSCH Yes/no Yes Yes Yes Yes Yes		U	14	10	1 3	''	''
Support of PDSCH Yes/no Yes Yes Yes Yes Yes		16	16	16	1/16	1/16	1
Support of PDSCH Yes/no Yes Yes Yes Yes Yes	iviii iii iii iii iii ii ii ii ii ii ii	10		10			'
	Support of PDSCH	Yes/no	Yes	Yes			Yes
		NOTE 1	. 55	. 55	. 55		

Reference combination of UE Radio Access capability parameters in DL	32kbps class	64kbps class	128kbps class	384kbps class	768kbps class	2048kbps class
Maximum number of physical channels per timeslot	8	11	14	14	14	14
Support of 8PSK	No	No	No	No	No	Yes

- NOTE 1: Options represent different combinations that should be supported with conformance tests.
- NOTE 2: Options depend on the support of PDSCH. The highest value is required if PDSCH is supported.
- NOTE 3: The given number does not contain the BCH.
- NOTE 4: (1) For FDD and 3.84Mcps TDD (2) For 1.28Mcps TDD.
- NOTE 5: This UE capability does not relate to the support of CPCH in the uplink for which SF 512 is needed

3GPP TSG-RAN WG2 Meeting #22 Helsinki, Finland, 27th – 31st August

	CHANGE REQUEST
*	25.306 CR 022 # ev r1 # Current version: 3.2.0 #
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the ¥ symbols.
Proposed change a	ffects: 第 (U)SIM ME/UE X Radio Access Network X Core Network
Title: 第	Correction of UE capabilities regarding Rx-Tx time difference type 2 measurement
Source: #	TSG-RAN WG2
Work item code: ₩	TEI Date: 25.06.01
	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) P (editorial modification) C (editorial modification) C (superiorial modification) R (superiorial
	difference type 2 measurement optional according to RAN WG4s understanding. Therefore, in order to enable a UE to indicate its capability to perform this measurement, an additional IE is added to the UE positioning capability. Isolated impact: Only UE positioning is impacted. The additional IE is added in an extension container, so that implementations of earlier releases are not impacted.
Summary of change	Capability to perform Rx-Tx time difference type2 measurement is added to the UE Positioning related capabilities.
Consequences if not approved:	# UE positioning feature may be implemented in different ways, resulting in unpredictable UE behaviour
Clauses affected:	¥ 4.8; 5.1; 5.2.1
Other specs affected:	# Other core specifications # 25.306 v4.1.0, CR 023 Test specifications 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/3G Specs/CRs.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.

4.8 UE positioning related parameters

Standalone location method(s) supported

Defines if a UE can measure its location by some means unrelated to UTRAN (e.g. if the UE has access to a standalone GPS receiver).

OTDOA UE based method supported

Defines if a UE supports the OTDOA UE based schemes.

Network Assisted GPS support

Defines if a UE supports either of the two types of assisted GPS schemes, namely "Network based", "UE based", "Both", or "none".

GPS reference time capable

Defines if a UE has the capability to measure GPS reference time as defined in [6].

Support for IPDL

Defines if a UE has the capability to use IPDL to enhance its "SFN-SFN observed time difference –type 2" measurement.

Support for Rx-Tx time difference type 2

Defines if a UE has the capability to perform the Rx-Tx time difference type 2 measurement.

5 Possible UE radio access capability parameter settings

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
The second second		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression	512, 1024, 2048, 4096, 8192 bytes
		context space	, ,
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
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	1, 2, 3, 4, 5, 6, 7, 8
		CCTrCH	
		Maximum total number of transport	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		blocks received within TTIs that end	
		within the same 10 ms interval	
		Maximum number of TFC in the	16, 32, 48, 64, 96, 128, 256, 512,
		TFCS	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	0.40 4000 0500 0040 5400 0400
		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 Maximum number of simultaneous	1, 2, 3, 4, 5, 6, 7, 8
		CCTrCH of DCH type (TDD only)	1, 2, 3, 4, 5, 6, 7, 6
		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	012
		Maximum number of TFC in the	4, 8, 16, 32, 48, 64, 96, 128, 256,
		TFCS	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
		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
	FDD Physical channel	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 960, 19200, 28800, 38400, 48000, 57600
	parameters in uplink TDD physical	Support of PCPCH Maximum number of timeslots per	Yes/No
	channel	frame	
	parameters in downlink	Maximum number of physical channels per frame	1,2,3,224
		Minimum SF Support of PDSCH	16, 1 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 Support of PUSCH	16,8,4,2,1 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 174.8-205.2 MHz 134.8-245.2 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		Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD
Multi-RAT related	parameters	Support of GSM Support of multi-carrier	Yes/No (per GSM frequency band)
UE positioning rela	ated parameters	Standalone location method(s) supported	Yes/No 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
Measurement rela	ited 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	es	ICS version	R99

5.2 Reference UE radio access capability combinations

Based on required UE radio access capabilities to support reference RABs as defined in [2], this clause lists reference UE Radio Access capability combinations. Subclause 5.2.1 defines reference combinations of UE

radio access capability parameters common for UL and DL. Subclause 5.2.2 and 5.2.3 define reference combinations of UE radio access capability parameters that are separate for DL and UL respectively. A reference combination for common UL and DL parameters, one combination for UL parameters and one combination for DL parameters together relate to a UE with a certain implementation complexity, that allows support for one or several combined reference RABs. Combinations for UL and DL can be chosen independently. The bit rate supported by the selected combination of common UL and DL parameters needs to be at least as high as the maximum out of the supported bit rates of the selected combination of DL parameters and the selected combination of UL parameters. Different combinations have different levels of implementation complexity.

For defined reference RABs, it is possible to require a UE to meet a certain reference UE radio access capability combination. Each UE needs to have capabilities complying with a given reference radio access capability combination. Each individual radio access capability parameter as defined in Subclause 5.1 shall be signalled.

The reference combination numbers shall not be used in the signalling of UE radio access capabilities between the UE and UTRAN. Reference UE radio access capability combinations provide default configurations that should be used as a basis for conformance testing against reference RABs.

Allowed values of UE capability parameters are limited by the defined range and granularity of values in Subclause 5.1. Values might change depending on further definition of reference RABs for testing.

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	128kbps class	384kbps class	768kbps class	2048kbps 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/\ NOT			
Maximum header compression context space		Not a	pplicable for co	onformance te	sting	
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
Multi-mode related parameters						•
Support of UTRA FDD/TDD			FDD / FDD+ NOT			
Multi-RAT related parameters						
Support of GSM			Yes/ NOT			
Support of multi-carrier			Yes/ NOT			
UE positioning related parameters						
Standalone location method(s) supported			Yes/ NOT			
Network assisted GPS support		Netwo	ork based / UE NOT		None	
GPS reference time capable			Yes/ NOT			
Support for IPDL			Yes/ NOT	′No		
Support for OTDOA UE based method			Yes/ NOT	'No		
Support for Rx-Tx time difference type 2			Yes			
measurement			NOT	<u>E 1</u>		
RF parameters for FDD						
UE power class			3 /			
Tu/Du factoria de la companya de la			NOT			
Tx/Rx frequency separation RF parameters for TDD			190 N	VIMZ		
RF parameters for TDD Radio frequency bands		^	/b/c/a+b/a	10/b10/01b	1.0	
itadio frequency barius		A	NOT		ru	
Chip rate capability			1.28 / 3.84 NOT	Mchip/sec		
UE power class			2 / NOT	3		

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

3GPP TSG-RAN WG2 Meeting #22 Helsinki, Finland, 27th – 31st August

CHANGE REQUEST									
*	25.306 CR 023								
For HELP on using this form, see bottom of this page or look at the pop-up text over the % symbols.									
Proposed change affects: \$\(\mathbb{K}\) (U)SIM ME/UE X Radio Access Network X Core Network									
Title: ₩	Correction of UE capabilities regarding Rx-Tx time difference type 2 measurement								
Source: #	TSG-RAN WG2								
Work item code: ₩	TEI Date: 27.08.01								
Category:									
Reason for change	Use one of the following releases: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) P (Release 1997) C (functional modification) P (Release 1998) D (editorial modification) Refound in 3GPP TR 21.900. B During RAN WG2/WG4 joint meeting in July, it was decided to keep the Rx-Tx time difference type 2 measurement optional according to RAN WG4s understanding. Therefore, in order to enable a UE to indicate its capability to perform this measurement, an additional IE is added to the UE positioning capability. Isolated impact: Only UE positioning is impacted. The additional IE is added in an extension container, so that implementations of earlier releases are not impacted.								
Summary of chang	Capability to perform Rx-Tx time difference type2 measurement is added to the UE Positioning related capabilities.								
Consequences if not approved:	# UE positioning feature may be implemented in different ways, resulting in unpredictable UE behaviour								
Clauses affected:	第 4.8; 5.1; 5.2.1								
Other specs affected:	# Other core specifications # 25.306 v3.2.0, CR 022r1 Test specifications O&M Specifications								
Other comments:	x								

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- 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.

4.8 UE positioning related parameters

Standalone location method(s) supported

Defines if a UE can measure its location by some means unrelated to UTRAN (e.g. if the UE has access to a standalone GPS receiver).

OTDOA UE based method supported

Defines if a UE supports the OTDOA UE based schemes.

Network Assisted GPS support

Defines if a UE supports either of the two types of assisted GPS schemes, namely "Network based", "UE based", "Both", or "none".

GPS reference time capable

Defines if a UE has the capability to measure GPS reference time as defined in [6].

Support for IPDL

Defines if a UE has the capability to use IPDL to enhance its "SFN-SFN observed time difference –type 2" measurement.

Support for Rx-Tx time difference type 2

Defines if a UE has the capability to perform the Rx-Tx time difference type 2 measurement.

5 Possible UE radio access capability parameter settings

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
r = or ponominoron		Support for loss-less SRNS relocation	Yes/No
		Maximum header compression	512, 1024, 2048, 4096, 8192 bytes
		context space	
RLC parameters		Total RLC AM buffer size	2,10,50,100,150,500,1000 kBytes
r		Maximum number of AM entities	3,4,5,6,8,16,30
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	4, 8, 16, 32, 48, 64, 96, 128, 256, 512
		blocks received within TTIs that end	, , , , , , , , , , , , , , , , , , , ,
		within the same 10 ms interval	
		Maximum number of TFC in the	16, 32, 48, 64, 96, 128, 256, 512,
	Transport	TFCS	1024
		Maximum number of TF	32, 64, 128, 256, 512, 1024
		Support for turbo decoding	Yes/No
		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	040 4000 0500 0040 5400 0400
		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 2, 4, 8, 16, 32
		transport channels	2, 7, 0, 10, 02
		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 in the	4, 8, 16, 32, 48, 64, 96, 128, 256,
		TFCS	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		
		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		
	FDD Physical channel	Maximum number of DPDCH bits transmitted per 10 ms	600, 1200, 2400, 4800, 960, 19200, 28800, 38400, 48000, 57600		
	parameters in uplink TDD physical	Support of PCPCH Maximum number of timeslots per	Yes/No		
	channel	frame			
	parameters in downlink	Maximum number of physical channels per frame	1,2,3,224		
		Minimum SF Support of PDSCH	16, 1 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 Support of PUSCH	16,8,4,2,1 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 174.8-205.2 MHz 134.8-245.2 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		Support of UTRA FDD/TDD	FDD, TDD, FDD+TDD		
Multi-RAT related	parameters	Support of GSM Support of multi-carrier	Yes/No (per GSM frequency band) Yes/No		
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		
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 capabilitie	es	ICS version	R99		

5.2 Reference UE radio access capability combinations

Based on required UE radio access capabilities to support reference RABs as defined in [2], this clause lists reference UE Radio Access capability combinations. Subclause 5.2.1 defines reference combinations of UE

radio access capability parameters common for UL and DL. Subclause 5.2.2 and 5.2.3 define reference combinations of UE radio access capability parameters that are separate for DL and UL respectively. A reference combination for common UL and DL parameters, one combination for UL parameters and one combination for DL parameters together relate to a UE with a certain implementation complexity, that allows support for one or several combined reference RABs. Combinations for UL and DL can be chosen independently. The bit rate supported by the selected combination of common UL and DL parameters needs to be at least as high as the maximum out of the supported bit rates of the selected combination of DL parameters and the selected combination of UL parameters. Different combinations have different levels of implementation complexity.

For defined reference RABs, it is possible to require a UE to meet a certain reference UE radio access capability combination. Each UE needs to have capabilities complying with a given reference radio access capability combination. Each individual radio access capability parameter as defined in Subclause 5.1 shall be signalled.

The reference combination numbers shall not be used in the signalling of UE radio access capabilities between the UE and UTRAN. Reference UE radio access capability combinations provide default configurations that should be used as a basis for conformance testing against reference RABs.

Allowed values of UE capability parameters are limited by the defined range and granularity of values in Subclause 5.1. Values might change depending on further definition of reference RABs for testing.

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	128kbps class	384kbps class	768kbps class	2048kbps class	
PDCP parameters							
Support for RFC 2507	No	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	
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						
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	Yes/No						
measurement	NOTE 1						
RF parameters for FDD							
UE power class	3 / 4						
T /D /	NOTE 1 190 MHz						
Tx/Rx frequency separation				VIHZ			
RF parameters for TDD		۸	/h/a/a:h/a	10/b10/015			
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/sec						
UE power class	NOTE 1 2/3						
- 1 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3			NOT	-			

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