TSG-RAN Meeting #21   *RP-030491*
Frankfurt, Germany, 16-19 September 2003

Title: **CRs (Rel-4 and linked Rel-5) to TS 25.331.**

Source: **TSG-RAN WG2**

Agenda item: **7.3.4**

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	2019	-	Rel-4	Ciphering of TM SRBs	F	4.10.0	4.11.0	R2-031913	TEI4
25.331	2020	-	Rel-5	Ciphering of TM SRBs	A	5.5.0	5.6.0	R2-031914	TEI4
25.331	2021	1	Rel-4	Correction on PDCP Header Compression Configuration	F	4.10.0	4.11.0	R2-032004	TEI4
25.331	2022	1	Rel-5	Correction on PDCP Header Compression Configuration	A	5.5.0	5.6.0	R2-032005	TEI4
25.331	2026	-	Rel-4	Corrections for TDD PUSCH	F	4.10.0	4.11.0	R2-031922	TEI4
25.331	2027	-	Rel-5	Corrections for TDD PUSCH	A	5.5.0	5.6.0	R2-031923	TEI4

3GPP TSG-RAN2 Meeting #37
Budapest, Hungary 25ᵗʰ to 29ᵗʰ August 2003

Tdoc ⌘R2-031913

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CR-Form-v7

CHANGE REQUEST

⌘   **25.331 CR 2019** ⌘**rev** **-** ⌘ Current version: **4.10.0** ⌘

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*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 **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Ciphering of TM SRBs
Source: ⌘	RAN WG2
Work item code:⌘	TEI-4 **Date:** ⌘ August 2003
Category: ⌘ **F**	**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.

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: ⌘	It is currently unclear if and how ciphering shall be applied on TM SRBs (used for rate control).
Summary of change:⌘	It is clarified that ciphering is not applied on TM SRBs It is clarified that COUNT-C is not maintained for TM SRBs (since ciphering is not applied).
Consequences if not approved: ⌘	If the CR is not implemented it is not clear if and how ciphering shall be applied on TM SRBs. Inconsistency between UTRAN and UE implementations may lead to ciphering failure on TM SRBs. **Impact analysis:** Impacted functionality: Ciphering on SRB5 (used for rate control) Correction type: Clarification of a function where the specification is incomplete, ambiguous and/ or inconsistent. Interoperability: • Isolated impact: the impact is isolated; only the corrected functionality is affected
Clauses affected: ⌘	6.3, 8.5.8

      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.

6.3 Signalling Radio Bearers

The Radio Bearers (RB) available for transmission of RRC messages are defined as "signalling radio bearers" and are specified in the following. The UE and UTRAN shall select the signalling radio bearers for RRC messages using RLC-TM, RLC-UM or RLC-AM on the DCCH and CCCH, according to the following:

- Signalling radio bearer RB0 shall be used for all messages sent on the CCCH (UL: RLC-TM, DL: RLC-UM).

- Signalling radio bearer RB1 shall be used for all messages sent on the DCCH, when using RLC unacknowledged mode (RLC-UM).

- Signalling radio bearer RB2 shall be used for all messages sent on the DCCH, when using RLC acknowledged mode (RLC-AM), except for the RRC messages carrying higher layer (NAS) signalling.

- Signalling radio bearer RB3 and optionally Signalling radio bearer RB4 shall be used for the RRC messages carrying higher layer (NAS) signalling and sent on the DCCH in RLC acknowledged mode (RLC-AM), as specified in subclauses 8.1.8., 8.1.9 and 8.1.10.

- Additionally, RBs whose identities shall be set between 5 and 32 may be used as signalling radio bearer for the RRC messages on the DCCH sent in RLC transparent mode (RLC-TM).

- RRC messages on the SHCCH are mapped either on RACH or on the USCH in the uplink using TM and either on FACH or on the DSCH using RLC-UM. These messages are only specified for TDD mode.

The Radio Bearer configuration for signalling radio bearer RB0, SHCCH, BCCH on FACH and PCCH on PCH are specified in subclauses 13.6, 13.6a, 13.6b and 13.6c.

Ciphering is never applied to signalling radio bearer RB0 or signalling radio bearers using RLC TM.

8.5.8 Maintenance of Hyper Frame Numbers

The MSBs of both the ciphering sequence numbers (COUNT-C) and integrity sequence numbers (COUNT-I), for the ciphering and integrity protection algorithms, respectively [40], are called the Hyper Frame Numbers (HFN).

For integrity protection, the UE shall:

1> maintain COUNT-I as specified in subclause 8.5.10.

The following hyper frame numbers types are defined:

MAC-d HFN:
24 MSB of COUNT-C for data sent over RLC TM

RLC UM HFN:
25 MSB of COUNT-C for data sent over RLC UM

RLC AM HFN:
20 MSB of COUNT-C for data sent over RLC AM

RRC HFN:
28 MSB of COUNT-I

For non-transparent mode RLC signalling radio bearers and radio bearers, the UE shall:

1> maintain one uplink and one downlink COUNT-C per signalling radio bearer and per radio bearer and one uplink and one downlink COUNT-I per signalling radio bearer;

1> increment the RLC UM HFN and RLC AM HFN in uplink and downlink by one each time the RLC sequence number wraps around in uplink and downlink respectively;

1> if the activation time for a new ciphering configuration set by an RRC procedure is equal to zero:

2> apply the configured RLC UM HFN or RLC AM HFN at this activation time, i.e. the configured HFN is not incremented.

NOTE: On the receiver side it may happen that the RLC PDU with sequence number equal to the activation time is lost and the first received PDU after the activation time implies a wrap around of the sequence number compared to the activation time. In this case the configured HFN is incremented by one. This action is taken only when the activation time is set to a RLC PDU sequence number value other than zero.

For all transparent mode RLC signalling radio bearers and radio bearers of each CN domain, the UE shall:

1> maintain one COUNT-C, common for all ~~signalling radio bearers and~~ radio bearers in uplink and downlink;

1> increment the MAC-d HFN by one each time the CFN wraps around;

1> if the activation time for a new ciphering configuration set by an RRC procedure is equal to zero:

2> apply the configured MAC-d HFN at this activation time, i.e. the configured HFN is not incremented.

1> maintain one uplink and one downlink COUNT-I per signalling radio bearer.

NOTE: In this release of the specification there is only an uplink transparent mode COUNT-I, which is used for signalling radio bearer RB0.

COUNT-C and COUNT-I are defined in [40], with the following supplement for COUNT-C: for transparent mode RLC radio bearers with a transmission time interval of x radio frames (x = 2, 4, 8), the MAC PDU is carried by L1 in x consecutive radio frames due to radio frame segmentation. In this case, the CFN of the first radio frame in the TTI shall be used as the CFN component of COUNT-C for ciphering of all data in the TTI [15].

3GPP TSG-RAN2 Meeting #37
Budapest, Hungary 25th to 29th August 2003

Tdoc ⌘*R2-031914*

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CHANGE REQUEST

⌘	**25.331** CR **2020**	⌘**rev**	**-**	⌘	Current version:	**5.5.0**	⌘

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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Ciphering of TM SRBs

Source:	⌘	RAN WG2

Work item code: ⌘	TEI-4		**Date:** ⌘	August 2003

Category:	⌘	**A**		**Release:** ⌘	Rel-5

Use <u>one</u> 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 <u>one</u> 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:	⌘	It is currently unclear if and how ciphering shall be applied on TM SRBs (used for rate control).

Summary of change:⌘	It is clarified that ciphering is not applied on TM SRBs It is clarified that COUNT-C is not maintained for TM SRBs (since ciphering is not applied).

Consequences if not approved:	⌘	If the CR is not implemented it is not clear if and how ciphering shall be applied on TM SRBs. Inconsistency between UTRAN and UE implementations may lead to ciphering failure on TM SRBs. **Impact analysis:** <u>Impacted functionality</u>: Ciphering on SRB5 (used for rate control) <u>Correction type</u>: Clarification of a function where the specification is incomplete, ambiguous and/ or inconsistent. <u>Interoperability:</u> • Isolated impact: the impact is isolated; only the corrected functionality is affected.

Clauses affected:	⌘	6.3, 8.5.8

Y	**N**

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

Other comments:	⌘	

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Ciphering is never applied to signalling radio bearer RB0 or signalling radio bearers using RLC TM.

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For integrity protection, the UE shall:

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The following hyper frame numbers types are defined:

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1> increment the RLC UM HFN and RLC AM HFN in uplink and downlink by one each time the RLC sequence number wraps around in uplink and downlink respectively;

1> if the activation time for a new ciphering configuration set by an RRC procedure is equal to zero:

2> apply the configured RLC UM HFN or RLC AM HFN at this activation time, i.e. the configured HFN is not incremented.

NOTE: On the receiver side it may happen that the RLC PDU with sequence number equal to the activation time is lost and the first received PDU after the activation time implies a wrap around of the sequence number compared to the activation time. In this case the configured HFN is incremented by one. This action is taken only when the activation time is set to a RLC PDU sequence number value other than zero.

For all transparent mode RLC signalling radio bearers and radio bearers of each CN domain, the UE shall:

1> maintain one COUNT-C, common for all ~~signalling radio bearers and~~ radio bearers in uplink and downlink;

1> increment the MAC-d HFN by one each time the CFN wraps around;

1> if the activation time for a new ciphering configuration set by an RRC procedure is equal to zero:

2> apply the configured MAC-d HFN at this activation time, i.e. the configured HFN is not incremented.

1> maintain one uplink and one downlink COUNT-I per signalling radio bearer.

NOTE: In this release of the specification there is only an uplink transparent mode COUNT-I, which is used for signalling radio bearer RB0.

COUNT-C and COUNT-I are defined in [40], with the following supplement for COUNT-C: for transparent mode RLC radio bearers with a transmission time interval of x radio frames (x = 2, 4, 8), the MAC PDU is carried by L1 in x consecutive radio frames due to radio frame segmentation. In this case, the CFN of the first radio frame in the TTI shall be used as the CFN component of COUNT-C for ciphering of all data in the TTI [15].

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CHANGE REQUEST

| ⌘ | **25.331** | CR | **2021** | ⌘rev | **1** | ⌘ | Current version: | **4.10.0** | ⌘ |

*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** **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction on PDCP Header Compression Configuration	
Source: ⌘	RAN WG2	
Work item code:⌘ TEI4		*Date:* ⌘ 25/08/2003
Category: ⌘ **F**		*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.

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: ⌘	1) The order of configuration of header compression algorithms is not clear in case of re-configuration of already used header compression algorithms. 2) There are no means to replace one header compression algorithm by another in one message.
Summary of change: ⌘	1) In case header compression algorithms are reconfigured, only algorithms listed in the reconfiguration message will be used for the RB. 2) The order of header compression protocols used in PDCP for mapping of PID values is explicitly specified. **Isolated Impact Analysis** Functionality corrected: PDCP Re-Configuration for header compression. Isolated impact statement: Correction to a function where re-configuration could fail. The correction has only impact to header compression re-configuration in case more than one compression protocol is involved. Impact if only implemented by either UE or UTRAN: Incompatible configurations in UE and UTRAN.
Consequences if not approved: ⌘	1) Re-configurations of already used algorithms may lead to compression errors. 2) Replacement of algorithms by others is not possible in one message.

Clauses affected: ⌘	8.6.4.10

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	

	X	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.

8.6.4.10   PDCP Info

For RFC 3095:

> 1> the chosen MAX_CID shall not be greater than the value "Maximum number of ROHC context sessions" as indicated in the IE "PDCP Capability";

> 1> the configuration for the PACKET_SIZES_ALLOWED is FFS.

If IE "PDCP info" is included, the UE shall:

> 1> if the radio bearer is connected to a CS domain radio access bearer:

>> 2> set the variable INVALID_CONFIGURATION to TRUE.

> 1> if the IE "PDCP PDU header" is set to the value "absent":

>> 2> if the IE "Support for lossless SRNS relocation" is true:

>>> 3> set the variable INVALID_CONFIGURATION to TRUE.

> 1> if the IE "PDCP PDU header" is set to the value "present":

>> 2> if the IE "Support for lossless SRNS relocation" is false:

>>> 3> if the IE "Header compression information" is absent:

>>>> 4> set the variable INVALID_CONFIGURATION to TRUE.

> 1> if the IE "Header compression information" is absent:

>> 2> not use Header compression after the successful completion of this procedure;

>> 2> remove any stored configuration for the IE "Header compression information".

> 1> if the IE "Header compression information" is present:

>> 2> only use header compression algorithms present in the IE "algorithm type" in that message for the configured radio bearer after the successful completion of this procedure;

>> 2> configure the order in which the header compression algorithms appear in the IE "algorithm type" in that message to be used by PDCP for mapping of PID values.

> 1> configure the PDCP entity for that radio bearer accordingly;

> 1> configure the RLC entity for that radio bearer according to the value of the IE "Support for lossless SRNS relocation";

1> set the PROFILES parameter, used by inband ROHC profile negotiation, for this PDCP entity for both UL and DL equal to the list of ROHC profiles received in the IE "PDCP info". A UE complying to this version of the protocol shall support ROHC profiles 0x0000 (ROHC uncompressed), 0x0001 (ROHC RTP), 0x0002 (ROHC UDP) and 0x0003 (ROHC ESP) (see [52]).

3GPP TSG-RAN WG2 #37   *Tdoc* ⌘*R2-032005*
Budapest, Hungary, 25ᵗʰ – 29ᵗʰ August 2003

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CHANGE REQUEST

⌘	**25.331** CR **2022**	⌘**rev** **1** ⌘	Current version:	**5.5.0**	⌘

*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** **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Correction on PDCP Header Compression Configuration
Source:	⌘	RAN WG2
Work item code: ⌘	TEI4	***Date:*** ⌘ 25/08/2003

Category:	⌘	**A**	***Release:*** ⌘ Rel-5
		Use one of the following categories:	*Use one of the following releases:*
		F *(correction)*	*2* *(GSM Phase 2)*
		A *(corresponds to a correction in an earlier release)*	*R96* *(Release 1996)*
		B *(addition of feature),*	*R97* *(Release 1997)*
		C *(functional modification of feature)*	*R98* *(Release 1998)*
		D *(editorial modification)*	*R99* *(Release 1999)*
		Detailed explanations of the above categories can	*Rel-4* *(Release 4)*
		be found in 3GPP TR 21.900.	*Rel-5* *(Release 5)*
			Rel-6 *(Release 6)*

Reason for change: ⌘	1)	The order of configuration of header compression algorithms is not clear in case of re-configuration of already used header compression algorithms.
	2)	There are no means to replace one header compression algorithm by another in one message.

Summary of change: ⌘	1)	In case header compression algorithms are reconfigured, only algorithms listed in the reconfiguration message will be used for the RB.
	2)	The order of header compression protocols used in PDCP for mapping of PID values is explicitly specified.

Isolated Impact Analysis
Functionality corrected: PDCP Re-Configuration for header compression.

Isolated impact statement: Correction to a function where re-configuration could fail. The correction has only impact to header compression re-configuration in case more than one compression protocol is involved.
Impact if only implemented by either UE or UTRAN: Incompatible configurations in UE and UTRAN.

Consequences if not approved: ⌘	1)	Re-configurations of already used algorithms may lead to compression errors.
	2)	Replacement of algorithms by others is not possible in one message.

Clauses affected: ⌘	8.6.4.10

		Y	N		
Other specs	⌘		X	Other core specifications	⌘
affected:			X	Test specifications	

		X	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.

8.6.4.10   PDCP Info

For RFC 3095:

    1> the chosen MAX_CID shall not be greater than the value "Maximum number of ROHC context sessions" as indicated in the IE "PDCP Capability";

    1> the configuration for the PACKET_SIZES_ALLOWED is FFS.

If IE "PDCP info" is included, the UE shall:

    1> if the radio bearer is connected to a CS domain radio access bearer:

        2> set the variable INVALID_CONFIGURATION to TRUE.

    1> if the IE "PDCP PDU header" is set to the value "absent":

        2> if the IE "Support for lossless SRNS relocation" is true:

            3> set the variable INVALID_CONFIGURATION to TRUE.

    1> if the IE "PDCP PDU header" is set to the value "present":

        2> if the IE "Support for lossless SRNS relocation" is false:

            3> if the IE "Header compression information" is absent:

                4> set the variable INVALID_CONFIGURATION to TRUE.

    1> if the IE "Header compression information" is absent:

        2> not use Header compression after the successful completion of this procedure;

        2> remove any stored configuration for the IE "Header compression information".

    1> if the IE "Header compression information" is present:

        2> only use header compression algorithms present in the IE "algorithm type" in that message for the configured radio bearer after the successful completion of this procedure.

        2> configure the order in which the header compression algorithms appear in the IE "algorithm type" in that message to be used by PDCP for mapping of PID values.

    1> configure the PDCP entity for that radio bearer accordingly;

    1> configure the RLC entity for that radio bearer according to the value of the IE "Support for lossless SRNS relocation";

    1> set the PROFILES parameter, used by inband ROHC profile negotiation, for this PDCP entity for both UL and DL equal to the list of ROHC profiles received in the IE "PDCP info". A UE complying to this version of the protocol shall support ROHC profiles 0x0000 (ROHC uncompressed), 0x0001 (ROHC RTP), 0x0002 (ROHC UDP) and 0x0003 (ROHC ESP) (see [52]).

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CHANGE REQUEST

⌘   **25.331 CR 2026**   ⌘**rev**   ⌘ Current version: **4.10.0** ⌘

*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 **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Corrections for TDD PUSCH
Source:	⌘	RAN WG2
Work item code:⌘	TEI4	**Date:** ⌘ 25ᵗʰ August 2003

Category: ⌘ **F**   **Release:** ⌘ Rel-4

Use one of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
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Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘	1. In section 8.2.7 the description of storage of power control parameters relates to 3.84 Mcps TDD is described but the case of 1.28 Mcps TDD is missing. It is proposed to extend the description to include the 1.28 Mcps specific power control parameters $PRX_{PUSCHdes}$ and TPC Step Size.

2. If a UE has not received power control parameters for PUSCH when PUSCH resources are allocated, i.e. they are neither stored for the CCTrCH or contained in the message, then the UE should not use the allocated resources. It is proposed to modify text in section 8.2.7 to indicate that the UE should ignore PUSCH allocations if it does not have uplink power control parameters. |
| **Summary of change:**⌘ | 1. The text in section 8.2.7 describing the storage of TDD power control parameters is modified to include the 1.28 Mcps TDD power control parameters.

2. Section 8.2.7 has been modified to indicate that use of PUSCH resources shall only be used if the UE has received power control parameters for the CCTrCH. |
| **Consequences if not approved:** ⌘ | The description of the UE behaviour for 1.28 Mcps TDD PUSCH operation regarding uplink power control will be erroneous. |

Clauses affected: ⌘	8.2.7

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

| *Other comments:* | ⌘ | |

8.2.7 Physical Shared Channel Allocation [TDD only]

Figure 8.2.7-1: Physical Shared Channel Allocation

8.2.7.1 General

The purpose of this procedure is to allocate radio resources to USCH and/or DSCH transport channels in TDD mode, for use by a UE. This procedure can also be used to indicate to the UE, that a PUSCH allocation is pending, in order to prevent further capacity requests from the UE.
UEs are not required to receive FACH and DSCH simultaneously, i.e. if resources are allocated to DSCH the FACH reception may be suspended.

8.2.7.2 Initiation

To initiate the Physical Shared Channel Allocation procedure, the UTRAN sends the "PHYSICAL SHARED CHANNEL ALLOCATION" message on the downlink SHCCH or on the downlink DCCH using UM RLC. The DSCH-RNTI shall be included for UE identification, if the message is sent on the SHCCH.

8.2.7.3 Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE

Upon reception of a "PHYSICAL SHARED CHANNEL ALLOCATION" message, if the message is received on the downlink SHCCH the UE shall:

1> check the DSCH-RNTI to see if the UE is addressed by the message;

1> if the UE is addressed by the message, or if the message is received on the downlink DCCH:

2> perform the following actions.

1> otherwise:

2> ignore the message.

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

1> if the IE "ISCP Timeslot list" is included:

2> store the timeslot numbers given there for future Timeslot ISCP measurements and reports in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

1> if the IE "PDSCH capacity allocation info" is included:

2> configure the physical resources used for the downlink CCTrCH given by the IE "TFCS ID" according to the following:

3> if the CHOICE "Configuration" has the value "Old configuration":

4> if the UE has stored a PDSCH configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION with the identity given by the IE "PDSCH Identity":

5> configure the physical resources according to that configuration.

4> otherwise:

5> ignore the IE "PDSCH capacity allocation info".

3> if the CHOICE "Configuration" has the value "New configuration":

4> configure the physical resources according to the information given in IE "PDSCH Info". If IE "Common timeslot info" or IE "PDSCH timeslots and codes" IE are not present in IE "PDSCH Info":

5> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION for this CCTrCH.

4> if the IE "PDSCH Identity" is included:

5> store the new configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

2> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

2> if the IE "Confirm request" has the value "Confirm PDSCH" and IE "PDSCH Identity" is included in IE "PDSCH capacity allocation info":

3> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

1> if the IE "PUSCH capacity allocation info" is included:

2> stop the timer T310, if running;

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation pending":

3> start the timer T311.

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation assignment":

3> stop the timer T311, if running;

3> configure the physical resources used for the uplink CCTrCH given by the IE "TFCS ID" according to the following:

4> if the CHOICE "Configuration" has the value "Old configuration":

5> if the UE has stored a PUSCH configuration with the identity given by the IE "PUSCH Identity" in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION:

6> configure the physical resources according to that configuration.

5> otherwise:

6> ignore the IE "PUSCH capacity allocation info".

4> if the CHOICE "Configuration" has the value "New configuration", the UE shall:

5> configure the physical resources according to the information given in IE "PUSCH Info". If IE "Common timeslot info" or IE "PUSCH timeslots and codes" is not present in IE "PUSCH Info":

6> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION for this CCTrCH.

5> if the IE "PUSCH Identity" is included:

6> store the new configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

3> ~~start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration"~~if, IE "PUSCH power control info" is present in this message and includes the parameter "UL target SIR" for 3.84

Mcps TDD, or the parameters "PRX$_{PUSCHdes}$" and "TPC Step Size" for 1.28 Mcps TDD, or the parameters are stored in the variable PHYSICAL SHARED CHANNEL CONFIGURATION for this CCTrCH:

4> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration".

3> otherwise:

4> ignore the IE "PUSCH capacity allocation info".;

3> If, the IE "PUSCH power control info" is present in this message and includes the parameter "UL target SIR" for 3.84 Mcps TDD,or the parameters "PRX$_{PUSCHdes}$" and/or "TPC Step Size" for 1.28 Mcps TDD ~~is included~~:

4> replace the parameters "UL target SIR" ~~target~~, or "PRX$_{PUSCHdes}$" or "TPC Step Size" stored in the variable PHYSICAL SHARED CHANNEL CONFIGURATION for this CCTrCH with the signalled values.

3> if the IE "Traffic volume report request " is included:

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8 at the time indicated by the IE "Traffic volume report request".

3> if the IE "Confirm request" has the value "Confirm PUSCH" and IE "PUSCH Identity" is included in IE "PUSCH capacity allocation info":

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

3> determine the TFCS subset and hence the TFCI values which are possible given the PUSCH allocation for that CCTrCH;

3> configure the MAC-c/sh in the UE with this TFCS restriction if necessary;

3> transmit USCH Transport Block Sets as required, within the TFCS limits given by the PUSCH allocation.

NOTE: If the UE has just entered a new cell and System Information Block Type 6 has not yet been scheduled, PUSCH/PDSCH information should be specified in the allocation message.

The UE shall:
1> clear the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> and the procedure ends.

8.2.7.4   Invalid PHYSICAL SHARED CHANNEL ALLOCATION message

If the UE receives a PHYSICAL SHARED CHANNEL ALLOCATION message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:
1> ignore the invalid PHYSICAL SHARED CHANNEL ALLOCATION message;

1> submit the PUSCH CAPACITY REQUEST message for transmission on the uplink SHCCH, setting the information elements in the message as specified in subclause 8.2.8.3;

1> reset counter V310;

1> start timer T310;

1> proceed as described in subclause 8.2.8.

CR-Form-v7

CHANGE REQUEST

| ⌘ | **25.331** CR **2027** | ⌘**rev** | | ⌘ Current version: | **5.5.0** | ⌘ |

*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 **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Corrections TDD PUSCH	
Source: ⌘	RAN WG2	
Work item code: ⌘	TEI4	**Date:** ⌘ 25ᵗʰ August 2003

Category: ⌘	**A**	**Release:** ⌘ Rel-5	
	Use one of the following categories:	*Use one of the following releases:*	
	F (correction)	2	*(GSM Phase 2)*
	A (corresponds to a correction in an earlier release)	R96	*(Release 1996)*
	B (addition of feature),	R97	*(Release 1997)*
	C (functional modification of feature)	R98	*(Release 1998)*
	D (editorial modification)	R99	*(Release 1999)*
	Detailed explanations of the above categories can	Rel-4	*(Release 4)*
	be found in 3GPP TR 21.900.	Rel-5	*(Release 5)*
		Rel-6	*(Release 6)*

Reason for change: ⌘	1. In section 8.2.7 the description of storage of power control parameters relates to 3.84 Mcps TDD is described but the case of 1.28 Mcps TDD is missing. It is proposed to extend the description to include the 1.28 Mcps specific power control parameters PRX$_{PUSCHdes}$ and TPC Step Size.
	2. If a UE has not received power control parameters for PUSCH when PUSCH resources are allocated, i.e. they are neither stored for the CCTrCH or contained in the message, then the UE should not use the allocated resources. It is proposed to modify text in section 8.2.7 to indicate that the UE should ignore PUSCH allocations if it does not have uplink power control parameters.
Summary of change: ⌘	1. The text in section 8.2.7 describing the storage of TDD power control parameters is modified to include the 1.28 Mcps TDD power control parameters.
	2. Section 8.2.7 has been modified to indicate that use of PUSCH resources shall only be used if the UE has received power control parameters for the CCTrCH.
Consequences if not approved: ⌘	The description of the UE behaviour for 1.28 Mcps TDD PUSCH operation regarding uplink power control will be erroneous.

Clauses affected: ⌘	8.2.7

		Y	**N**	
Other specs ⌘			**X**	Other core specifications ⌘
affected:			**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.

8.2.7 Physical Shared Channel Allocation [TDD only]

Figure 8.2.7-1: Physical Shared Channel Allocation

8.2.7.1 General

The purpose of this procedure is to allocate radio resources to USCH and/or DSCH transport channels in TDD mode, for use by a UE. This procedure can also be used to indicate to the UE, that a PUSCH allocation is pending, in order to prevent further capacity requests from the UE.
UEs are not required to receive FACH and DSCH simultaneously, i.e. if resources are allocated to DSCH the FACH reception may be suspended.

8.2.7.2 Initiation

To initiate the Physical Shared Channel Allocation procedure, the UTRAN sends the "PHYSICAL SHARED CHANNEL ALLOCATION" message on the downlink SHCCH or on the downlink DCCH using UM RLC. The DSCH-RNTI shall be included for UE identification, if the message is sent on the SHCCH.

8.2.7.3 Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE

Upon reception of a "PHYSICAL SHARED CHANNEL ALLOCATION" message, if the message is received on the downlink SHCCH the UE shall:

1> check the DSCH-RNTI to see if the UE is addressed by the message;

1> if the UE is addressed by the message, or if the message is received on the downlink DCCH:

2> perform the following actions.

1> otherwise:

2> ignore the message.

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

1> if the IE "ISCP Timeslot list" is included:

2> store the timeslot numbers given there for future Timeslot ISCP measurements and reports in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION.

1> if the IE "PDSCH capacity allocation info" is included:

2> configure the physical resources used for the downlink CCTrCH given by the IE "TFCS ID" according to the following:

3> if the CHOICE "Configuration" has the value "Old configuration":

4> if the UE has stored a PDSCH configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION with the identity given by the IE "PDSCH Identity":

5> configure the physical resources according to that configuration.

4> otherwise:

5> ignore the IE "PDSCH capacity allocation info".

3> if the CHOICE "Configuration" has the value "New configuration":

4> configure the physical resources according to the information given in IE "PDSCH Info". If IE "Common timeslot info" or IE "PDSCH timeslots and codes" IE are not present in IE "PDSCH Info":

5> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION for this CCTrCH.

4> if the IE "PDSCH Identity" is included:

5> store the new configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

2> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";

2> if the IE "Confirm request" has the value "Confirm PDSCH" and IE "PDSCH Identity" is included in IE "PDSCH capacity allocation info":

3> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

1> if the IE "PUSCH capacity allocation info" is included:

2> stop the timer T310, if running;

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation pending":

3> start the timer T311.

2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation assignment":

3> stop the timer T311, if running;

3> configure the physical resources used for the uplink CCTrCH given by the IE "TFCS ID" according to the following:

4> if the CHOICE "Configuration" has the value "Old configuration":

5> if the UE has stored a PUSCH configuration with the identity given by the IE "PUSCH Identity" in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION:

6> configure the physical resources according to that configuration.

5> otherwise:

6> ignore the IE "PUSCH capacity allocation info".

4> if the CHOICE "Configuration" has the value "New configuration", the UE shall:

5> configure the physical resources according to the information given in IE "PUSCH Info". If IE "Common timeslot info" or IE "PUSCH timeslots and codes" is not present in IE "PUSCH Info":

6> reuse the configuration stored in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION for this CCTrCH.

5> if the IE "PUSCH Identity" is included:

6> store the new configuration in the variable PHYSICAL_SHARED_CHANNEL_CONFIGURATION using that identity.

3> ~~start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration"~~if, IE "PUSCH power control info" is present in this message and includes the parameter "UL target SIR" for 3.84

Mcps TDD, or the parameters "PRX$_{PUSCHdes}$" and "TPC Step Size" for 1.28 Mcps TDD, or the parameters are stored in the variable PHYSICAL SHARED CHANNEL CONFIGURATION for this CCTrCH:

4> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration".

3> otherwise:

4> ignore the IE "PUSCH capacity allocation info".;

3> If, the IE "PUSCH power control info" is present in this message and includes the parameter "UL target SIR" for 3.84 Mcps TDD,or the parameters "PRX$_{PUSCHdes}$" and/or "TPC Step Size" for 1.28 Mcps TDD is included:

4> replace the parameters "UL target SIR" target, or "PRX$_{PUSCHdes}$" or "TPC Step Size" stored in the variable PHYSICAL SHARED CHANNEL CONFIGURATION for this CCTrCH with the signalled values.

3> if the IE "Traffic volume report request " is included:

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8 at the time indicated by the IE "Traffic volume report request".

3> if the IE "Confirm request" has the value "Confirm PUSCH" and IE "PUSCH Identity" is included in IE "PUSCH capacity allocation info":

4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.

3> determine the TFCS subset and hence the TFCI values which are possible given the PUSCH allocation for that CCTrCH;

3> configure the MAC-c/sh in the UE with this TFCS restriction if necessary;

3> transmit USCH Transport Block Sets as required, within the TFCS limits given by the PUSCH allocation.

NOTE: If the UE has just entered a new cell and System Information Block Type 6 has not yet been scheduled, PUSCH/PDSCH information should be specified in the allocation message.

The UE shall:

1> clear the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> and the procedure ends.

8.2.7.4   Invalid PHYSICAL SHARED CHANNEL ALLOCATION message

If the UE receives a PHYSICAL SHARED CHANNEL ALLOCATION message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

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1> submit the PUSCH CAPACITY REQUEST message for transmission on the uplink SHCCH, setting the information elements in the message as specified in subclause 8.2.8.3;

1> reset counter V310;

1> start timer T310;

1> proceed as described in subclause 8.2.8.