

**TSG-RAN Meeting #8  
Düsseldorf, Germany, 21 - 23 June 2000**

**TSGRP#8(00)0254**

**Title:** Agreed CRs to TS 25.435

**Source:** TSG-RAN WG3

**Agenda item:** 5.3.3

<b>Tdoc_Num</b>	<b>Specification</b>	<b>CR_Num</b>	<b>Revision_Nu</b>	<b>CR_Subject</b>	<b>CR_Category</b>	<b>WG_Status</b>	<b>Cur_Ver_Num</b>	<b>New_Ver_Nu</b>
R3-001200	25.435	016	1	Update of Paging Indication bitmap	F	agreed	3.2.0	3.3.0
R3-001288	25.435	021		Addition of protocol version	F	agreed	3.2.0	3.3.0
R3-001293	25.435	015	3	Clarification of sending PCH frames	F	agreed	3.2.0	3.3.0
R3-001547	25.435	018	1	Change of definition of the Quality Estimation (QE)	F	agreed	3.2.0	3.3.0
R3-001548	25.435	020	1	Modification of number of PI for TDD	F	agreed	3.2.0	3.3.0
R3-001549	25.435	019	1	Zero bit transport block Handling for USCH	F	agreed	3.2.0	3.3.0

<h1>CHANGE REQUEST</h1>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.	
<b>25.435 CR 015 R3</b>		Current Version: <b>3.2.0.</b>	
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team	
For submission to: <b>TSG RAN #8</b> <small>list expected approval meeting # here ↑</small>	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input type="checkbox"/>	<small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
(at least one should be marked with an X)

**Source:** R-WG3 **Date:** May 2000

**Subject:** R2: Clarification of the correspondence of the Cell SFN to the CFN indicated in the PCH frame.  
R3: Further clarification of paging.

**Work item:**

<b>Category:</b>	F Correction	<input checked="" type="checkbox"/>	<b>Release:</b>	Phase 2	<input type="checkbox"/>
<small>(only one category shall be marked with an X)</small>	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input checked="" type="checkbox"/>
				Release 00	<input type="checkbox"/>

**Reason for change:** Reason of R2:  
In the paging occasion the lub PCH frame (with CFN label) causes on Uu interface two frames to be transmitted that can be sent during different Cell SFNs.  
This CR defines the correspondence of the CFN and to the Cell SFN as follows:  
When the PCH FP labelled with CFNx is transmitted in the Uu interface so that the Paging Message transmitted in the S-CCPCH frame shall be started with Cell SFN that corresponds to the CFN(x)  
The Paging Indication Information transmitted in the PICH frame shall be started t(PICH) = 7680 chips before the corresponding S-CCPCH frame.  
If the time offset between P-CCPCH frame start and S-CCPCH frame start is less than 7680 chips, the PICH frame starts in previous Cell SFN, corresponding to CFN(x-1).  
Reason of R3:  
The PCH frame contains both Paging Indication Information Bitmap and Paging Messages in the Transport Blocks. This CR clarifies that for paging of one UE, two consecutive PCH Data Frames with consecutive CFN numbers are transmitted, the first frame contains the Paging Indication Information and the second contains the Paging Message.

**Clauses affected:** 2, 6.2.4

**Other specs affected:**

- Other 3G core specifications  → List of CRs:
- Other GSM core specifications  → List of CRs:
- MS test specifications  → List of CRs:
- BSS test specifications  → List of CRs:
- O&M specifications  → List of CRs:

**Other comments:**



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## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] TS UMTS 25.301: "Radio Interface Protocol Architecture".

[2] TS 25.402: "Synchronisation in UTRAN, Stage 2".

[3] TS 25.302: "Services provided by the Physical Layer, Source WG2".

[4] TS 25.221: "Physical channels and mapping of transport channels to physical channels (TDD)".

[5] TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

## 6.2.4 PCH Channels

~~PCH Data Frame includes the CFN corresponding to the Uu frame at which this data in which the payload (PCH TBS, FDD Paging indicator information) has to be transmitted. The PCH Data Frame payload includes the paging indication information and paging messages. To page one User Equipment, two consecutive PCH Data Frames with consecutive CFN numbers are transmitted, the first frame contains the Paging Indication Information and the second contains the Paging Message.~~

[TDD- If PI-bitmap and PCH TBS are transmitted within the PCH data frame, the CFN is related to the PCH TBS only. The PI bitmap is mapped to the PICH frames, transmitted at the beginning of the paging block.]

The paging messages are transmitted in S-CCPCH frames. The CFN in the PCH Data Frame header corresponds to the Cell SFN of the frame in which the start of the S-CCPCH frame is located. If the paging messages are ~~not~~ to be sent in several frames, the CFN corresponding to the first frame shall be indicated.

[FDD - The timing of the PICH frame (containing the paging indication information) is  $\tau_{\text{PICH}}$  prior to the S-CCPCH frame timing [5]].

In contrast to all other Common Transport Channel data frames, which use a CFN of length 8, the PCH Data Frame includes a CFN of length 12.

~~The node-B has no responsibility concerning ensuring to ensure~~ the consistency between the paging indication information and the corresponding paging messages. E.g. if the paging indication information is lost over the Iub, the paging messages might be sent over the Uu while no UE is actually listening.

## CHANGE REQUEST

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**25.435 CR 016 R1**

Current Version: **3.2.0.**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **TSG RAN #8**

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Strategic   
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Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
 (at least one should be marked with an X)

**Source:** R-WG3 **Date:** April , 2000

**Subject:** Update of Paging Indication Bitmap description

**Work item:**

<b>Category:</b>	F Correction	<input checked="" type="checkbox"/>	<b>Release:</b>	Phase 2	<input type="checkbox"/>
(only one category shall be marked with an X)	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input checked="" type="checkbox"/>
				Release 00	<input type="checkbox"/>

**Reason for change:**  
 In 25.211 revision 3.0.1., WG1 introduced a "drifting" of the PICH bits corresponding to a certain Paging Indication. The drifting is based on the SFN in which the PI is sent and the number of PI's transmitted in the PICH frame.  
 Due to the drifting, there is no fixed correspondence between the PI's and the bits. Therefore the statement in 25.435 regarding the order of bits on Uu is no longer valid.

**Clauses affected:** 6.2.7.12

<b>Other specs affected:</b>	Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

**Other comments:**

### 6.2.7.12 Paging Indication bitmap (PI-bitmap)

#### ~~6.2.7.13~~ Void

**Description:** Bitmap of Paging Indications PI<sub>0</sub>..PI<sub>N-1</sub>. ~~The order of the PI's in the bitmap corresponds to the order of the PI's on the Uu: b~~ Bit 7 of the first byte contains PI0, Bit6 of the first byte contains PI1,....., Bit7 of the second byte contains PI8 and so on.

**Value range:** [FDD - {18, 36, 72 or 144 Paging Indications}].

[TDD – {30, 34, 60, 68, 122 and 138} Paging Indications for 2 PICH frames,  
{60, 68, 120, 136, 244 and 276} Paging Indications for 4 PICH frames].

**Field length:** [FDD - 3, 5, 9 or 18 bytes (the PI-bitmap field is padded at the end up to an octet boundary)].

[TDD – 4, 5, 8, 9, 15, 16, 17, 18, 31 or 35 bytes (the PI-bitmap field is padded at the end up to an octet boundary)].

#### 6.2.7.13 Void

**CHANGE REQUEST**

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**25.435 CR 018r1**

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **TSG RAN #8** for approval   
list expected approval meeting # here ↑ for information

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non-strategic  (for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

**Proposed change affects:**  
(at least one should be marked with an X)

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:** **R-WG3** **Date:** **May, 2000**

**Subject:** **Change of definition of the Quality Estimation (QE) for TDD**

**Work item:**

<b>Category:</b> (only one category shall be marked with an X)	F Correction	<input checked="" type="checkbox"/>	<b>Release:</b>	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input checked="" type="checkbox"/>
			Release 00	<input type="checkbox"/>	

**Reason for change:**

In WG1 the BER definition has been changed to Transport channel BER and Physical channel BER. Therefore the handling of the QE for USCH has to be updated.

In addition this CR aligns the mapping for the QE with 25.225, which has been changed from previously 6 bits to 8 bits.

Changes within revised version CR018r1:  
 \* references have been updated indicating the reference number  
 \* BER handling for TDD same as for FDD, i.e. if no transport channel BER is available, the QE is the Physical channel BER.

**Clauses affected:** **2, 6.2.6, 6.2.7.20**

<b>Other specs</b>	Other 3G core specifications	<input checked="" type="checkbox"/>	→ List of CRs:	25.427 3.2.0 CR-023, 25.423 3.1.0 CR-103, 25.433 3.1.0 CR-119.
<b>affected:</b>	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

**Other comments:**



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## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] TS UMTS 25.301: "Radio Interface Protocol Architecture".

[2] TS 25.402: "Synchronisation in UTRAN, Stage 2".

[3] TS 25.302: "Services provided by the Physical Layer, Source WG2".

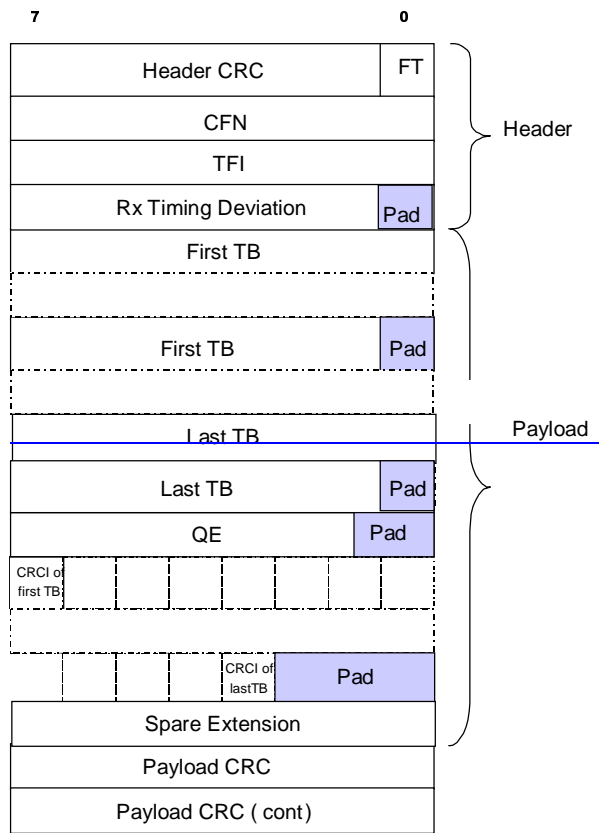
[4] TS 25.221: "Physical channels and mapping of transport channels to physical channels (TDD)".

[5] [TS 25.433: "UTRAN Iub interface NBAP signalling"](#).

[6] [TS 25.225: "Physical layer – Measurements \(TDD\)"](#).

### 6.2.6 Uplink Shared Channels [TDD]

USCH Data Frame includes the CFN in which the payload was received. If the payload was received in several frames, the CFN corresponding to the first frame will be indicated.



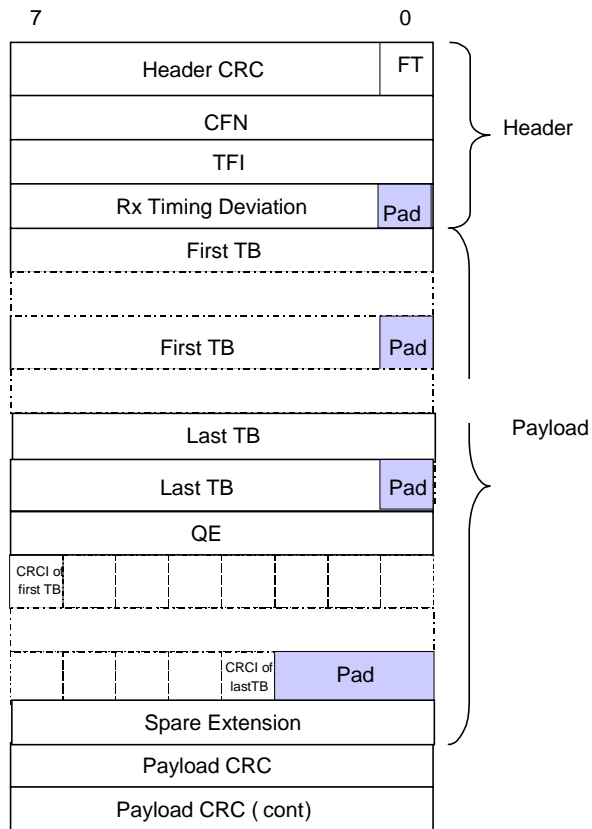


Figure 19: USCH Data Frame structure

### 6.2.7.20 [TDD - Quality Estimate (QE)]

**Description:** The quality estimate is derived from the PUSCH-Transport channel BER or Physical ~~Channel-channel~~ BER.

If the USCH FP frame includes TB's for the USCH which was indicated as "selected" with the QE-selector IE in the control plane [525.433], then the QE is the Transport channel BER for the selected USCH. If no Transport channel BER is available the QE is the Physical channel BER.

If the IE QE-Selector equals "non-selected" for all USCHs in the USCH FP frame then the QE is the Physical channel BER.

The quality estimate shall be set to the Transport channel BER or Physical channel BER and be measured in the units TrCH\_BER\_LOG and PhCH\_BER\_LOG respectively dB (see Ref [6]25.225). The UL Outer Loop Power Control may use the quality estimate.

**Value range:** {0-~~63~~255}, granularity 1.

**Field length:** ~~6~~8 bits.

## CHANGE REQUEST

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**25.435 CR 019r1**

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **TSG RAN #8**  
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Form: CR cover sheet, version 2 for 3GPP and SMG    The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**  
(at least one should be marked with an X)

(U)SIM     ME     UTRAN / Radio     Core Network

**Source:** **R-WG3**

**Date:** **24 May, 2000**

**Subject:** **Zero bit transport block Handling for USCH**

**Work item:** \_\_\_\_\_

**Category:**

F Correction	<input checked="" type="checkbox"/>
A Corresponds to a correction in an earlier release	<input type="checkbox"/>
B Addition of feature	<input type="checkbox"/>
C Functional modification of feature	<input type="checkbox"/>
D Editorial modification	<input type="checkbox"/>

**Release:**

Phase 2	<input type="checkbox"/>
Release 96	<input type="checkbox"/>
Release 97	<input type="checkbox"/>
Release 98	<input type="checkbox"/>
Release 99	<input checked="" type="checkbox"/>
Release 00	<input type="checkbox"/>

(only one category shall be marked with an X)

**Reason for change:**

This CR aligns the USCH data frame transmission in case of zero length transport blocks with RAN1 definitions and with definitions made at RAN3#12 for the DCHs, as a basis for BLER measurement.

**Clauses affected:** **5.1.5**

**Other specs affected:**

Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:
Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:
MS test specifications	<input type="checkbox"/>	→ List of CRs:
BSS test specifications	<input type="checkbox"/>	→ List of CRs:
O&M specifications	<input type="checkbox"/>	→ List of CRs:

**Other comments:**

Update of CR019 (R3-001365), aligned to the text in CR019r3 for 25.427 (R3-001549).



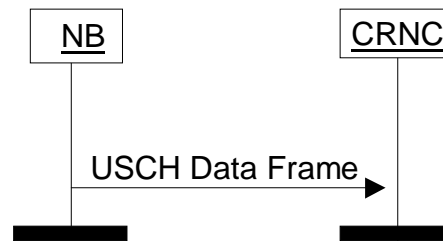
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<----- double-click here for help and instructions on how to create a CR.

## 5.1 Data transfer

### 5.1.5 [TDD — Uplink Shared Channels]

Data Transfer procedure is used to transfer data received from Uu interface from NodeB to CRNC. Data Transfer procedure consists of a transmission of Data Frame from Node B to CRNC.



**Figure 6: USCH Data Transfer Procedure**

Node B shall always send an USCH data frame to the CRNC provided the Transport Format addressed by the TFI indicates that the number of Transport Blocks is greater than 0, if the TBS size is greater than zero. This applies regardless of the length of the Transport Blocks including zero length Transport Blocks.

When UL synchronisation is lost or not yet achieved on the Uu, USCH data frames are shall not be sent to the CRNC.

When Node B receives an invalid TFCI in the PUSCH, no USCH data frames shall not be sent to the CRNC.

## CHANGE REQUEST

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**25.435** **CR** **020r1**

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **TSG RAN #8**  
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Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

**Proposed change affects:**  
(at least one should be marked with an X)

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:** R-WG3

**Date:** May, 2000

**Subject:** Modification of number of PI for TDD

**Work item:**

**Category:**

(only one category shall be marked with an X)

F Correction   
A Corresponds to a correction in an earlier release   
B Addition of feature   
C Functional modification of feature   
D Editorial modification

**Release:**

Phase 2   
Release 96   
Release 97   
Release 98   
Release 99   
Release 00

**Reason for change:**

The number of Paging Indications has been changed in RAN1#13 meeting.

This document updates therefore the value range and field length of the Paging Indication Bitmap for TDD.

CR020r1:

In the revised version the header has been changed that the description belongs to the correct section.

**Clauses affected:** 6.2.7.12

**Other specs affected:**

Other 3G core specifications  → List of CRs:   
Other GSM core specifications  → List of CRs:   
MS test specifications  → List of CRs:   
BSS test specifications  → List of CRs:   
O&M specifications  → List of CRs:

**Other comments:**



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<----- double-click here for help and instructions on how to create a CR.

### 6.2.7.12 Paging Indication bitmap (PI-bitmap)

#### ~~6.2.7.13~~ Void

**Description:** Bitmap of Paging Indications. The order of the PI's in the bitmap corresponds to the order of the PI's on the Uu: bit 7 of the first byte contains PI0.

**Value range:** [FDD - {18, 36, 72 or 144 Paging Indications}].

[TDD – {30, 34, 60, 68, ~~120+22~~ and ~~138+36~~} Paging Indications for 2 PICH frames,  
{60, 68, 120, 136, ~~244-240~~ and ~~276-272~~} Paging Indications for 4 PICH frames].

**Field length:** [FDD - 3, 5, 9 or 18 bytes (the PI-bitmap field is padded at the end up to an octet boundary)].

[TDD – 4, 5, 8, 9, 15, ~~16-17~~, ~~18-31~~30 or ~~35-34~~ bytes (the PI-bitmap field is padded at the end up to an octet boundary)].

#### 6.2.7.13 Void



## CHANGE REQUEST

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**25.435 CR 021**

Current Version: **3.2.0.**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **TSG-RAN #8**  
*list expected approval meeting # here*  
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Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
*(at least one should be marked with an X)*

**Source:** R-WG3 **Date:** May 2000

**Subject:** Addition of User Plane Protocol Version.

**Work item:**

**Category:** F Correction  **Release:** Phase 2   
A Corresponds to a correction in an earlier release  Release 96   
*(only one category shall be marked with an X)* B Addition of feature  Release 97   
C Functional modification of feature  Release 98   
D Editorial modification  Release 99   
Release 00

**Reason for change:** The working assumption is that the user plane protocol version will be negotiated on the control plane. Currently user plane specifications do not indicate the protocol version. Therefore this CR introduces a subclause with protocol version indication.

**Clauses affected:** 4.3

**Other specs affected:** Other 3G core specifications  → List of CRs:  
Other GSM core specifications  → List of CRs:  
MS test specifications  → List of CRs:  
BSS test specifications  → List of CRs:  
O&M specifications  → List of CRs:

**Other comments:**



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## 4 General aspects

### 4.1 Common Transport Channel Data Stream User Plane Protocol Services

Common transport channel provides the following services:

- Transport of TBS between the Node B and the CRNC for common transport channels.
- Support of transport channel synchronisation mechanism.
- Support of Node Synchronisation mechanism.

### 4.2 Services expected from data transport

The following services are expected from the transport layer:

- In sequence delivery of Frame Protocol PDUs.

### 4.3 Protocol Version

[This revision of the specification specifies version 1 of the protocols.](#)

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