TSG-RAN Meeting #7 **_TSGRP#7(00)0110_**
Madrid, Spain, 13 - 15 March 2000

Title: **Agreed CRs to TS 25.435**

Source: **TSG-RAN WG3**

Agenda item: **6.4.3**

Tdoc_Num	Specification	CR_Num	Revision_Num	CR_Subject	CR_Category	WG_Status	Cur_Ver_Num	New_Ver_Num
R3-000131	25.435	002		DSCH data frame with PDSCH Identifier	C	agreed	3.1.0	3.2.0
R3-000266	25.435	003		USCH frame protocol with PUSCH Identifier	C	agreed	3.1.0	3.2.0
R3-000021	25.435	004		Correction for the PI-bitmap coding.	F	agreed	3.1.0	3.2.0
R3-000559	25.435	009		Corrections to 25.435 on DTX	F	agreed	3.1.0	3.2.0
R3-000560	25.435	010		Aligned definition of Rx Timing Deviation	F	agreed	3.1.0	3.2.0
R3-000561	25.435	012		Add QE in USCH Data Frame	F	agreed	3.1.0	3.2.0
R3-000562	25.435	011		Correction of PI Bitmapping for TDD	F	agreed	3.1.0	3.2.0
R3-000470	25.435	014		Removal of open issues chapter	D	agreed	3.1.0	3.2.0
R3-000514	25.435	005	1	Modification of the CRC	D	agreed	3.1.0	3.2.0

				description				
R3-000969	25.435	006	2	Modification to DSCH frame protocol	C	agreed	3.0.0	3.1.0
R3-000952	25.435	001	3	Changes for CPCH	B	agreed	3.1.0	3.2.0
R3-000763	25.435	013	1	CCH Frame Protocol error handling	F	agreed	3.0.0	3.1.0
R3-000830	25.435	007	1	Addition of Spare Extension.	B	agreed	3.1.0	3.2.0

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25.435	**CR**	**002**	Current Version:	3.0.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	TSG RAN #7	for approval	X	strategic		*(for SMG use only)*
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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	X	Core Network	

Source: TSG-RAN WG3   **Date:** Jan ,2000

Subject: DSCH data frame with PDSCH Identifier

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Closing the gap in the information flow from the TDD DSCH scheduler to the NodeB.

Clauses affected: 6.2.4, 6.2.6.13

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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< The proposed changes according to this CR are highlighted by revision marks. >

6.2.4 Downlink Shared Channels

DSCH Data Frame includes a CFN indicating the frame in which the payload shall be sent. If the payload is to be sent over several frames, the CFN corresponding to the first frame shall be indicated.

The DSCH Data frame structure is different for FDD and TDD.

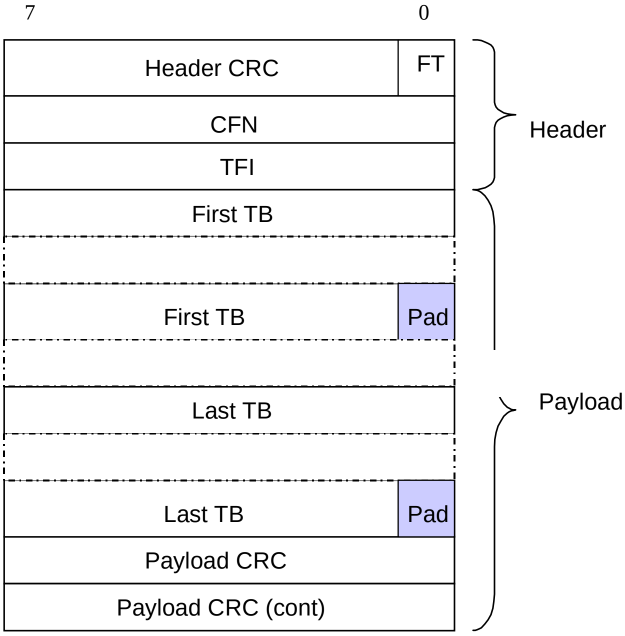
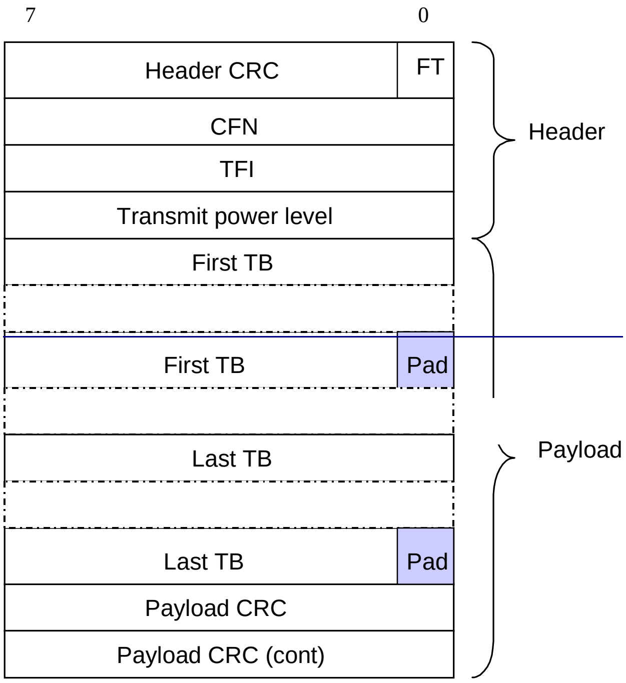


Figure 111115: FDD DSCH Data Frame structure



~~**Figure 16: TDD DSCH Data Frame structure**~~

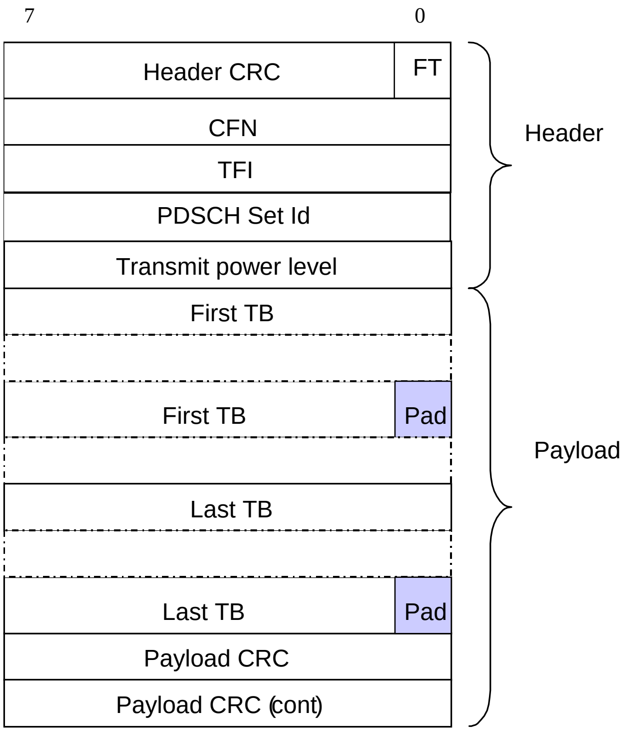


Figure 3: TDD DSCH Data Frame structure

6.2.6.12 Paging Indication bitmap (PI-bitmap)

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: {18, 36, 72 or 144 Paging Indications}

Field length: 3, 4, 9 or 18 bytes (the PI-bitmap field is padded at the end up to an octet boundary)

6.2.6.13 [TDD - PDSCH Set Id]

Description: A pointer to the PDSCH Set which shall be used to transmit the DSCH data frame over the radio interface.

Value range: {0..255}

Field length: 8 bits

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***Document* R3-000266**
e.g. for 3GPP use the format TP-99xxx
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25.435 CR 003 Current Version: 3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSG RAN #7	for approval	X	strategic		(for SMG use only)
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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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG3 **Date:** Jan 26 ,2000

Subject: USCH frame protocol with PUSCH Identifier

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	X	
D	Editorial modification		

Release:

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

Reason for change: Closing the gap in the information flow from the TDD USCH scheduler to the NodeB. A new Control Frame Type “Dynamic PUSCH assignment” is introduced.

Clauses affected: 3.2, 5.5 (new), 6.3.2.3, 6.3.3.6 (new)

Other specs affected:

Other 3G core specifications	X	→ List of CRs: 25.430-CR003, 25.433-CR012, 25.435-CR002
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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3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CFN	Connection Frame Number
CRC	Cyclic Redundancy Checksum
CRCI	CRC Indicator
DCH	Dedicated Transport Channel
DL	Downlink
DSCH	Downlink Shared Channel
FP	Frame Protocol
FT	Frame Type
PC	Power Control
PDSCH	Physical Downlink Shared Channel
PUSCH	Physical Uplink Shared Channel
QE	Quality Estimate
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
ToA	Time of arrival
TTI	Transmission Time Interval
UL	Uplink
USCH	Uplink Shared Channel

5.5.[TDD – Dynamic PUSCH assignment]

Procedure for dynamic allocation of physical resources to uplink shared channels (USCH) in the NodeB. The control frame includes a parameter "PUSCH Set Id" which is a pointer to a preconfigured table of PUSCH Sets in the NodeB.

When this control frame is sent via a certain Iub USCH data port, then it applies to that USCH and in addition to any other USCH channel which is multiplexed into the same CCTrCH in the NodeB.

The time limitation of the PUSCH allocation is expressed with the parameters "Activation CFN" and "Duration".

NodeB behaviour: When the NodeB receives the control frame "Dynamic PUSCH assignment" from the CRNC in the USCH frame protocol over an Iub USCH data port within a Traffic Termination Point, it shall behave as follows:

1) The NodeB shall extract the PUSCH Set Id.

2) It shall extract the parameters "Activation CFN" and "Duration" which identify the allocation period of that physical channel.

3) It shall retrieve the PUSCH Set which is referred to by the PUSCH Set Id.

4) It shall identify the CCTrCH to which the USCH is multiplexed, and hence the TFCS which is applicable for the USCH.

5) Within the time interval indicated by Activation CFN and Duration, the NodeB shall make the specified PUSCH Set available to the CCTrCH.

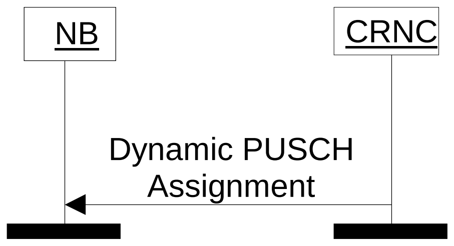


Figure 9: Dynamic PUSCH assignment procedure

6.3.2 Coding of information elements of the Control frame header

6.3.2.1 Control frame CRC

Description: Cyclic Redundancy Polynomial calculated on a control frame with polynom: X^7+X^6+X^2+1.

The CRC calculation shall cover all bits in the control frame, starting from bit 0 in the first byte (FT field) up to the end of the control frame.

Value range: {0-127}

Field length: 7 bits

6.3.2.2 Frame type (FT)

Refer to section 6.2.6.2.

6.3.2.3 Control Frame Type

Description: Indicates the type of the control information (information elements and length) contained in the payload.

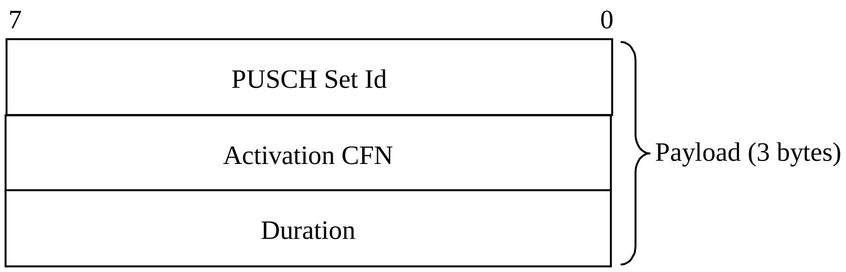
Value values of the Control Frame Type parameter are defined in the following table:

Type of control frame	Value
Timing adjustment	0000 0010
DL synchronisation	0000 0011
UL synchronisation	0000 0100
DL Node synchronisation	0000 0110
UL Node synchronisation	0000 0111
Dynamic PUSCH assignment	0000 1000

6.3.3.6 [TDD – Dynamic PUSCH assignment]

6.3.3.6.1 Payload structure

The payload of the Dynamic PUSCH Assignment control frames is shown in the figure below:



6.3.3.6.2 PUSCH Set Id

Description: Identifies a PUSCH Set from the collection of PUSCH Sets which have been preconfigured in the NodeB, for the respective cell in which the USCH exists. The PUSCH Set Id is unique within a cell.

Value range: 0...255.

Field length: 8 bits.

6.3.3.6.3 Activation CFN

Description: Activation CFN, specifies the Connection Frame Number where the allocation period of that PUSCH Set starts.

Value range: Integer (0...255).

Field length: 8 bits.

6.3.3.6.4 Duration

Description: Indicates the duration of the activation period of the PUSCH Set, in radio frames.

Value range: 0 ... 255 means: 0 to 255 radio frames, i.e. 0 to 2550 msec.

Field length: 8 bits.

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25.435	**CR**	**004**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG RAN #7	for approval	X	Strategic		*(for SMG use only)*
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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	X	Core Network

Source:	TSG-RAN WG3	**Date:**	Jan, 2000
Subject:	Correction for the PI-bitmap coding.		
Work item:			

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

Reason for change:	Correction for the chapter 6.2.6.12 Paging Indication bitmap (PI-bitmap). The length of the in the Paging Indication bitmap field is 5 bytes (not 4) for 36 Paging indications.
Clauses affected:	6.2.6.12

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:	

6.2.6.12 Paging Indication bitmap (PI-bitmap)

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: {18, 36, 72 or 144 Paging Indications}

Field length: 3, 5~~4~~, 9 or 18 bytes (the PI-bitmap field is padded at the end up to an octet boundary)

3GPP TSG-RAN Working Group 3, Meeting #10
Gothenburg, Sweden, 24-28 January 2000

Document R3-000559
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25.435 CR 009 Current Version: 3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN #7	for approval	X	strategic		(for SMG use only)
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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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: RAN-WG3 **Date:** Feb 24, 2000

Subject: Corrections to 25.435 on DTX and TDD DSCH

Work item:

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

Reason for change: The behaviour of the Node B in case of invalid downlink FACH/PCH frames arriving from the RNC is defined for the TDD mode. Explanatory procedure text for TDD DSCH data frame handling is added which is in analogy with the procedure description for the FDD DSCH (25.435-CR006), and fits to the TDD DSCH data frame structure (25.435-CR002).

Clauses affected: 2, 5.1.2, 5.1.3

Other specs affected:				
	Other 3G core specifications	X	→ List of CRs:	25.435-CR002, 25.435-CR006 (R3-000361)
	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)

3 Definitions and abbreviations

3.1 Definitions

For the purpose of the present document, the following terms and definition apply:

Transport Connection: Service provided by the transport layer and used by Frame Protocol for the delivery of FP PDU.

For other definitions, please refer to [2]

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CFN	Connection Frame Number
CRC	Cyclic Redundancy Checksum
CRCI	CRC Indicator
DCH	Dedicated Transport Channel
DL	Downlink
DSCH	Downlink Shared Channel
FP	Frame Protocol
FT	Frame Type
PC	Power Control
QE	Quality Estimate
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
ToA	Time of arrival
TTI	Transmission Time Interval
UL	Uplink
USCH	Uplink Shared Channel

For other abbreviations, please refer to [2].

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.

5 Data Streams User Plane Procedures

5.1 Data Transfer

5.1.1 RACH 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.

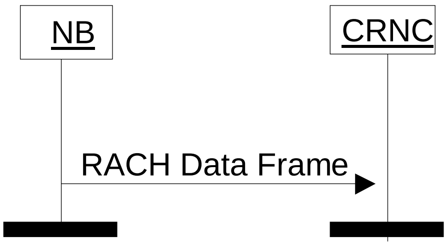

Figure 1: RACH Data Transfer Procedure

5.1.2 ~~[FDD – ~~Secondary-CCPCH~~]/[TDD – CCPCH]~~ related transport Channels

For the FACH transport channel, a Data Transfer procedure is used to transfer data from CRNC to node B. Data Transfer Procedure Consists of a transmission of Data Frame from CRNC to node B.

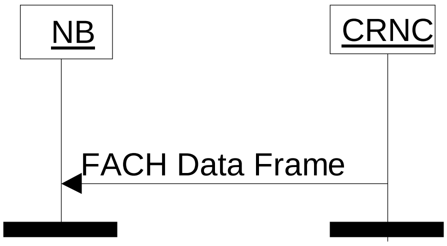

Figure 1: FACH Data Transfer Procedure

For the PCH transport channel, a Data Transfer procedure is used to transfer data from CRNC to node B. Data Transfer Procedure Consists of a transmission of Data Frame from CRNC to node B.

Figure 3: PCH Data Transfer Procedure

In this case the PCH Data Frame may also transport information related to the PICH channel.

If the Node B does not receive a valid FP frame in a TTI, it assumes that there is no data to be transmitted in that TTI for this transport channel.

If the node B is aware of a TFI value corresponding to zero bits for this transport channel, this TFI is assumed. When combining the TFI's of the different transport channels, a valid TFCI might result and in this case data shall be transmitted on the Uu.

If the node B is not aware of a TFI value corresponding to zero bits for this transport channel or if combining the TFI corresponding to zero bits with other TFI's results in an unknown TFI combination, the handling as described in the following paragraph shall be applied.

At each frame, the Node B shall build the TFCI value of each ~~[FDD —~~ secondary-CCPCH~~]/[TDD — CCPCH]~~ according to the TFIs of the transport channels multiplexed on this ~~[FDD —~~ secondary-CCPCH~~]/[TDD — CCPCH]~~ and scheduled for that frame. [FDD — In case the Node B receives an unknown TFI combination, it shall only transmit the pilot bits of the secondary-CCPCH (if configured) without TFCI bits or Data bits.] [TDD — In case the Node B receives an unknown TFI combination, it shall apply DTX, i.e. suspend transmission on the corresponding S-CCPCH – except if this S-CCPCH provides the "beacon function", in which case the Node B shall maintain the physical layer transmission as specified in TS 25.221.]. ~~only transmit data obtained by rate matching.].~~

If the Node B does not receive a valid FP frame in a TTI or a frame without paging indication information, it assumes that no UE's have to be paged on the Uu in this TTI. In this case the default PICH bit pattern of all zeros shall be transmitted.

Data Frames sent on Iub for different transport channels multiplexed on one ~~[FDD —~~ secondary-CCPCH~~]/[TDD — CCPCH]~~ might indicate different transmission power levels to be used in a certain Uu frame. Node-B shall determine the highest DL power level required for any of the transport channels multiplexed in a certain Uu frame and use this power level as the desired output level.

5.1.3 Downlink Shared Channels

The Data Transfer procedure is used to transfer a DSCH data frame from the CRNC to a node B. ~~Data Transfer Procedure Consists of transmission a Data Frame from CRNC to node B.~~

If the Node B does not receive a valid DSCH data frame for transmission in a given TTI, it assumes that there is no data to be transmitted in that TTI for this transport channel.

[TDD -The Node B shall use the header information in the DSCH data frame to determine which PDSCH Set and power offset should be used in the PDSCH Uu frames associated to the specified CFN. The specified PDSCH Set and power offset shall then be used for DSCH transmission for as long as there is data to transmit or until a new DSCH data frame arrives that specifies that a different PDSCH Set and/or power offset should be used. This feature enables multiple DSCH's with different TTI to be supported.]

[TDD -The Node B may receive a DSCH data frame which contains a TFI value corresponding to there being no data to transmit, such a DSCH data frame will have no transport blocks. On receiving such a data frame the Node B shall apply the specified PDSCH Set and power offset as described above starting in the PDSCH Uu frame associated to the specified CFN. This feature enables multiple DSCH's with different TTI to be supported, the use of such a zero payload DSCH data frame solves the problem of how the Node B should determine what PDSCH Set and power offset should be used in the event that transmission of a transport block set being transmitted with a short TTI comes to an end, whilst the transmission of a TBS with a long TTI continues.]

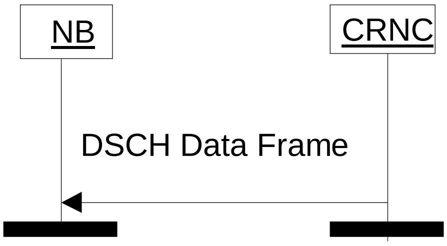

Figure 4: DSCH Data Transfer Procedure

5.1.4 [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.

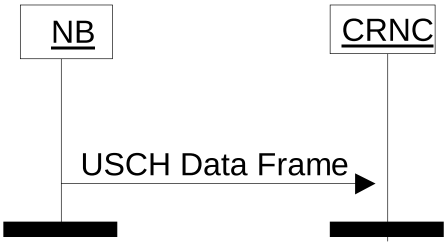

Figure 5: USCH Data Transfer Procedure

3GPP TSG-RAN Working Group 3, Meeting #11
Sophia Antipols, France, 28 February-3 March 2000

Document R3-000560

e.g. for 3GPP use the format TP-99xxx
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25.435	**CR**	**010**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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

Source:	RAN-WG3	**Date:**	Feb 22, 2000
Subject:	Aligned definition of Rx Timing Deviation		
Work item:			

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

Reason for change:	Alignment of Rx Timing Deviation with 25.225 in terms of range and granularity.
Clauses affected:	6.2.1, 6.2.5, 6.2.6.6, 6.2.6.13

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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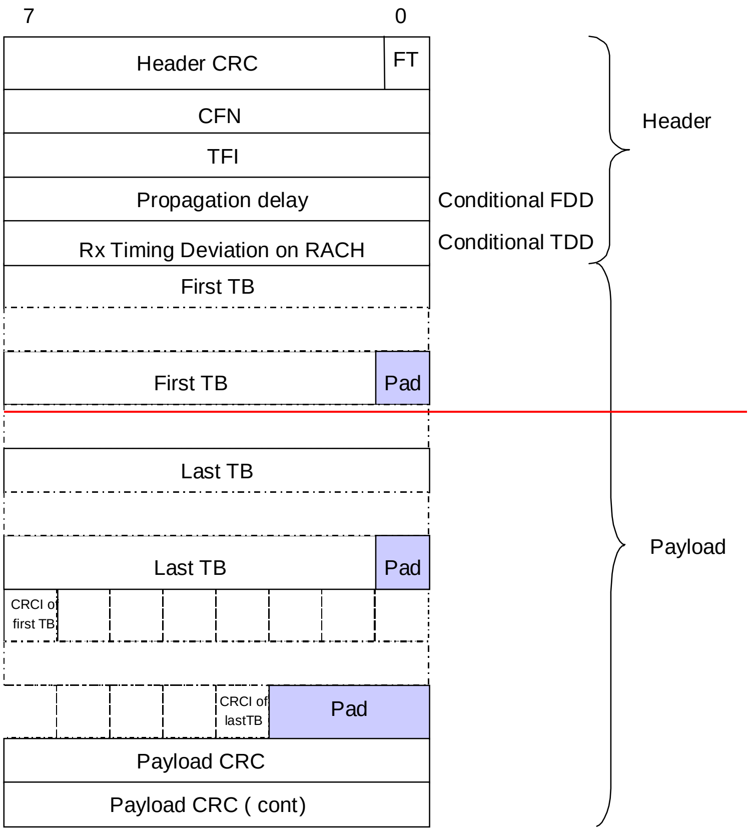
6.2 Data frame structure

6.2.1 RACH Channels

The RACH Data Frame includes the CFN corresponding to the SFN of the frame in which the payload was received. If the payload was received in several frames, the CFN corresponding to the first Uu frame in which the information was received shall be indicated.



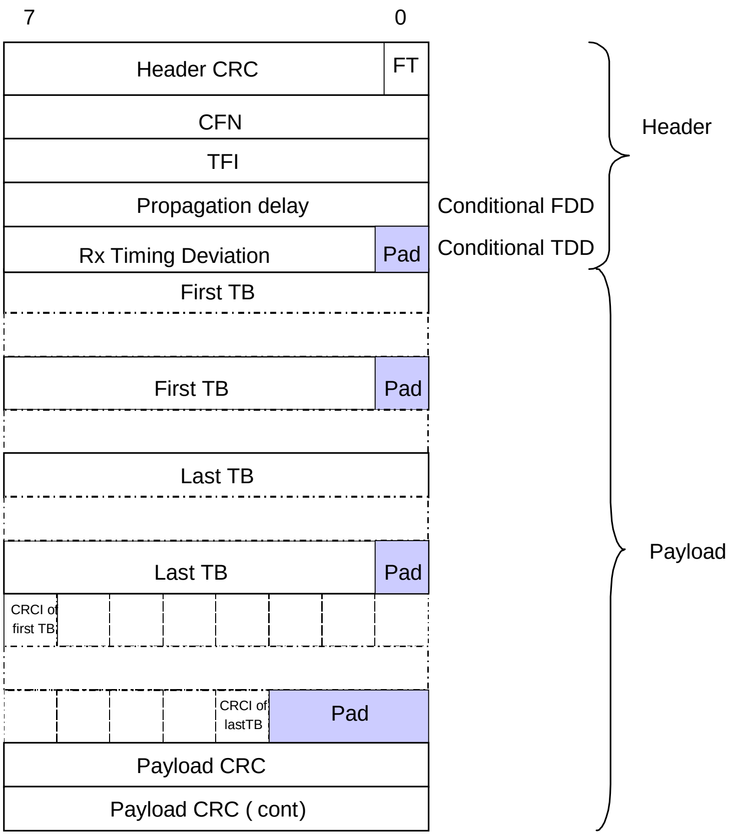


Figure 11: RACH Data Frame structure

Propagation delay is a conditional Information Element which is only present when the Cell supporting the RACH Transport Channel is a FDD Cell.

Rx Timing Deviation is a conditional Information Element which is only present when the Cell supporting the RACH Transport Channel is a TDD Cell.

6.2.5 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.

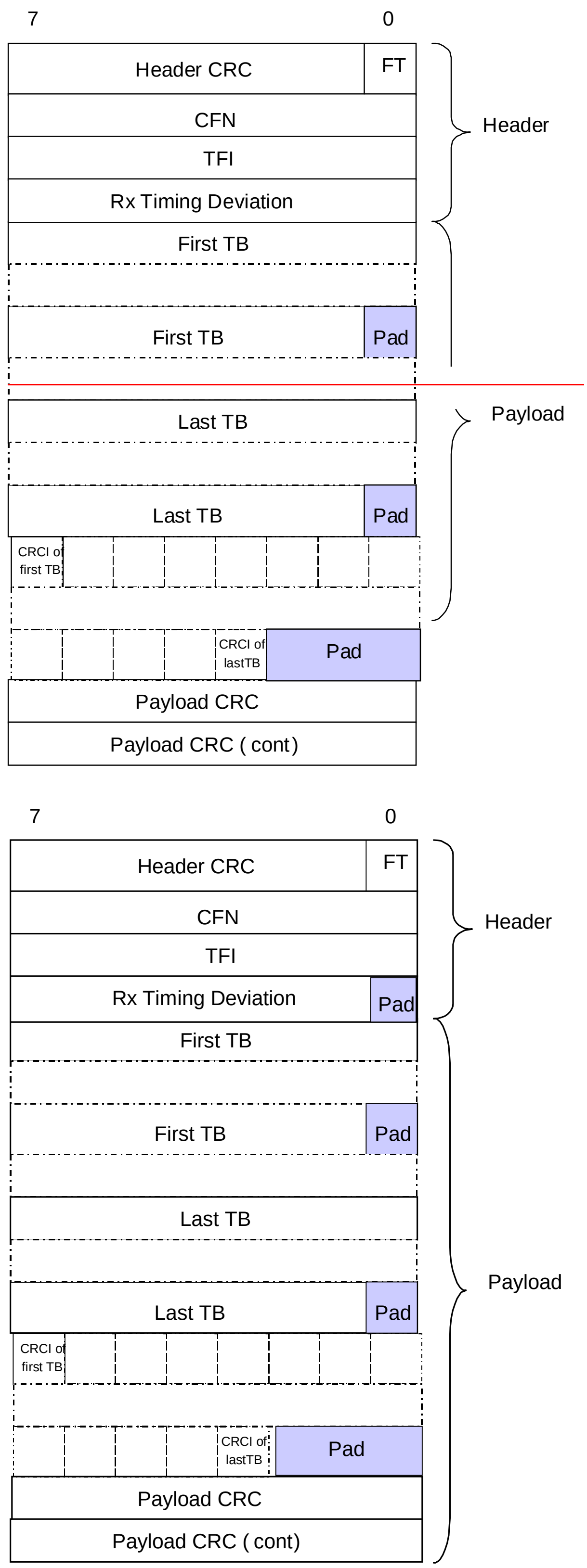


Figure 15: USCH Data Frame structure

6.2.6 Coding of information elements in data frames

6.2.6.6 [TDD — Rx Timing Deviation]

Description: Measured Rx Timing Deviation as a basis for timing advance

Value range: { -~~512~~256 ... +256~~508}~~ chips~~}~~

{N*4 –256} chips ≤ RxTiming Deviation < {(N+1)*4 – 256} chips

With N = 0, 1, .. ,127

Granularity: 4 chips

Field length: 7~~8~~ bits

~~6.2.6.13 [TDD — Rx Timing Deviation on RACH]~~

~~**Description:** Measured Rx Timing Deviation as a basis for timing advance~~

~~**Value range:** {0-1020 chips}~~

~~**Granularity:** 4 chips~~

~~**Field length:** 8 bits~~

3GPP TSG-RAN Working Group 3, Meeting #11
Sophia Antipols, France, 28 February-3 March 2000

***Document* R3-00561**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.435 CR 012 Current Version: 3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: RAN-WG3 **Date:** Feb 22, 2000

Subject: Addition of Quality Estimation to USCH Data Frame

Work item:

Category:
(only one category shall be marked with an X)

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The Quality Estimation shall be added within the USCH Data Frame as used within the DCH uplink data frame.

Clauses affected: 6.2.5, 6.2.6.x

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:

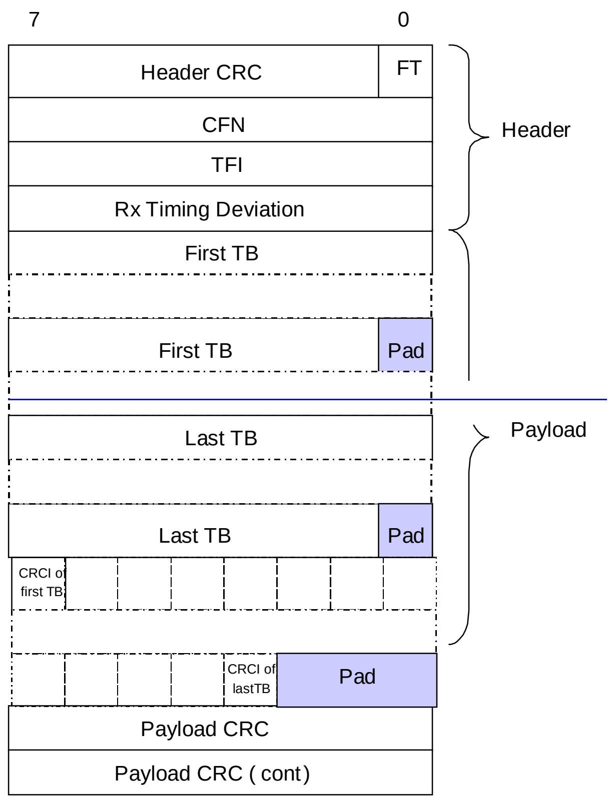
Other comments:

help.doc

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

6.2.5 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.



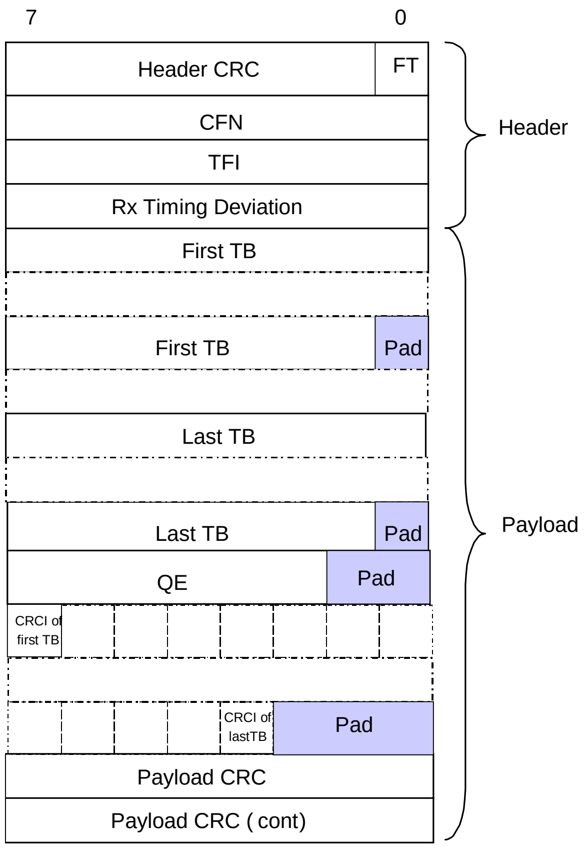


Figure 15: USCH Data Frame structure

6.2.6.x [TDD - Quality Estimate (QE)]

Description: The quality estimate is derived from the PUSCH Physical Channel BER.

The quality estimate shall be set to the Physical channel BER and be measured in the unit BER_dB (see Ref 25.225). The UL Outer Loop Power Control may use the quality estimate.

Value range: {0-63}, granularity 1

Field length: 6 bits

3GPP TSG-RAN Working Group 3, Meeting #11
Sophia Antipolis, France, 28 February-3 March 2000

***Document* R3-000562**

e.g. for 3GPP use the format TP-99xxx
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CHANGE REQUEST

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25.435 CR 011 Current Version: 3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN #7	for approval	X	strategic	
list expected approval meeting # here ↑		for information		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: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: RAN-WG3 **Date:** Feb 22, 2000

Subject: Correction of PI Bitmapping for TDD

Work item:

Category:
(only one category shall be marked with an X)

F	Correction	X	
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	X
Release 00	

Reason for change:
Correction of the number of Paging Indication per time slot for TDD
According definitions in 25.304, the PI bitmap refer to a paging block. Each paging block contains of N-pich (2 or 4) consecutive frames allocated to the PICH. The number of PI per PICH frame for TDD depends on the Page Indicator Length (2, 4 or 8 symbols) and the burst type (276 bits or 244 bits). Thus, the number of PI per frame can be 15, 17, 30, 34, 61, or 69. The number of PI per paging block is N_pich times the number of PI per frame.

Clauses affected: 6.2.3, 6.2.6.12

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:

help.doc

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

6.2.3 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. [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.] If the payload is to be sent in several frames, the CFN corresponding to the first frame shall be indicated. 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 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.

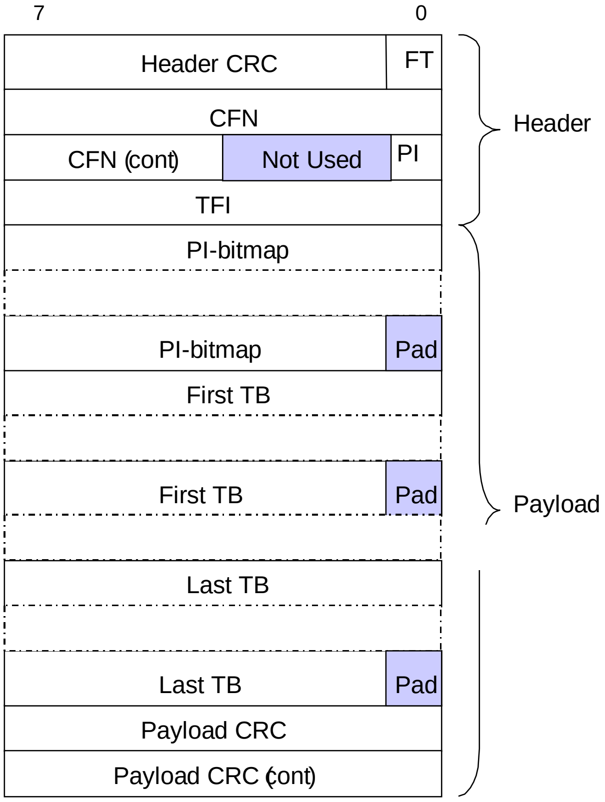

Figure 13: PCH Data Frame structure

"Not Used" bits shall be set to 0 by the RNC and ignored by the Node B.

6.2.6.12 Paging Indication bitmap (PI-bitmap)

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, 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, 4, 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)]

3GPP TSG-RA WG3 Meeting #11
Sophia Antipolis, 28 Feb – 3 Mar 2000

Document R3-000470
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.435	**CR**	**014**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	RAN#7	for approval	X	strategic		(for SMG
list expected approval meeting # here ↑		for information		non-strategic		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	X	Core Network

Source: R-WG3 **Date:**

Subject: Removal of the open issue chapter

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction		Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature		Release 98	
D	Editorial modification	X	Release 99	X
			Release 00	

Reason for change: Open issues of technical specification are listed in the WG3 report. Furthermore some of the listed open issue has been already solved. The CR removes the Annexes with open issue and document assessment table.

Clauses affected: annex A, annex B

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:

~~Annex A (informative):~~
~~Document Stability Assessment Table~~

~~Section~~	~~Content missing~~	~~Incomplete~~	~~Restructuring needed~~	~~Checking needed~~	~~Editorial work required~~	~~Finalisation needed~~	~~Almost stable~~	~~Stable~~
~~1~~								~~√~~
~~2~~								~~√~~
~~3~~								~~√~~
~~4~~								~~√~~
~~5~~								~~√~~
~~6~~								~~√~~
~~7~~								~~√~~

~~Annex B (informative):~~
~~List of Open Issues~~

~~The open issues identified are the following:~~

1. ~~Backward compatibility and definition of the compatibility information~~
2. ~~Support for CPCH~~

3GPP TSG-RAN Working Group Meeting #10
Nice, France, 28th Febr – 3rd March 2000

***Document* R3-000514**
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or for SMG, use the format P-99-xxx

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25.435	**CR**	**5 R1**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	TSG RAN #7	for approval	X	strategic		*(for SMG use only)*
list expected approval meeting # here ↑		for information		non-strategic		

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	X	Core Network	

Source:	RAN-WG3	**Date:**	Feb, 2000
Subject:	Modification of the CRC description.		
Work item:			

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

Reason for change:	The current CRC description is ambiguous. The proposed description is aligned with the description of the radio frame CRC in the 25.212.
Clauses affected:	6.2.6.1., 6.2.6.9, 6.3.2.1., 7.1

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:	

6.2.6.1 Header CRC

Description: Cyclic Redundancy Polynomial calculated on the header of a data frame with polynom: X^7+X^6+X^2+1.

The CRC calculation shall cover all bits in the header, starting from bit 0 in the first byte (FT field) up to the end of the header. See chapter 7.1.

Value range: {0-127}

Field length: 7 bits

6.2.6.9 Payload CRC

Description: Cyclic Redundancy Polynomial calculated on the payload of a data frame with polynom X^16+X^15+X^2+1.

The CRC calculation shall cover all bits in the data frame payload, starting from bit 7 in the first byte up to bit 0 in the byte before the payload CRC. See chapter 7.1.

Field length: 16 bits

6.3.2.1 Control frame CRC

Description: Cyclic Redundancy Polynomial calculated on a control frame with polynom: X^7+X^6+X^2+1.

The CRC calculation shall cover all bits in the control frame, starting from bit 0 in the first byte (FT field) up to the end of the control frame. See chapter 7.1.

Value range: {0-127}

Field length: 7 bits

7 Frame protocol error handling

A received frame protocol frame with unknown Information element or with illegal Information element value shall be ignored.

7.1 Error detection

Error detection is provided on frames through a Cyclic Redundancy Check. The CRC for the payload is 16 and for the header and control frames is 7 bits.

7.1.1 CRC Calculation

The parity bits are generated by one of the following cyclic generator polynomials:

$g_{CRC16}(D) = D^{16} + D^{15} + D^{2} + 1$

$g_{CRC7}(D) = D^{7} + D^{6} + D^{2} + 1$

Denote the bits in a frame by $a_1, a_2, a_3, \ldots, a_{A_i}$, and the parity bits by $p_1, p_2, p_3, \ldots, p_{L_i}$. A_i is the length of a protected data and L_i is 16 or 7 depending on the CRC length.

The encoding is performed in a systematic form, which means that in GF(2), the polynomial for the payload

$$a_1 D^{A_i+15} + a_2 D^{A_i+14} + \ldots + a_{A_i} D^{16} + p_1 D^{15} + p_2 D^{14} + \ldots + p_{15} D^{1} + p_{16}$$

yields a remainder equal to 0 when divided by $g_{CRC16}(D)$, the polynomial for the header and control frames

$$a_1 D^{A_i+6} + a_2 D^{A_i+5} + \ldots + a_{A_i} D^{7} + p_1 D^{6} + p_2 D^{5} + \ldots + p_6 D^{1} + p_7$$

yields a remainder equal to 0 when divided by $g_{CRC7}(D)$.

7.1.1.1 Relation between input and output of the Cyclic Redundancy Check

The bits after CRC attachment are denoted by $b_1, b_2, b_3, \ldots, b_{B_i}$, where $B_i=A_i+L_i$.

The parity bits for the payload are attached at the end of the frame:

$b_k = a_k$ $k = 1, 2, 3, \ldots, A_i$

$b_k = p_{(k-A_i)}$ $k = A_i + 1, A_i + 2, A_i + 3, \ldots, A_i + L_I$

The parity bits for the frame header and the control frames are attached at the beginning of the frame:

$b_k = p_k$ $k = 1, 2, 3, \ldots, L_i$

$b_k = a_{(k-Li)}$ $k = L_i + 1, L_i + 2, L_i + 3, \ldots, L_I + A_i$

3GPP TSG-RAN WG3 Meeting #11

Sophia Antipolis, France, 28 February-3 March 2000

Document* *R3-000969

e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.435	**CR**	**6 r2**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN#7	for approval	X	strategic		*(for SMG*
list expected approval meeting # here ↑		for information		non-strategic		*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	X	Core Network	

Source:	R-WG3	**Date:**	28 Feb 2000
Subject:	Modification to DSCH frame protocol		
Work item:			

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

Reason for change:

- Current specification does not support the carrying of channelisation code number or spreading factor of the PDSCH(s) to be carried on the DSCH FP.
- Current specification does not specify the working of the power management for the DSCH. This modification allows the RNC to calculate a power offset for the DSCH (relative to the power used to transmit the TFCI bits of the DPCCH) and to signal this to the node B

Clauses affected:

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

Other comments:

help.doc

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

5.1.3 Downlink Shared Channels

The Data Transfer procedure is used to transfer a DSCH data frame from the CRNC to a node B. ~~Data Transfer Procedure Consists of transmission a Data Frame from CRNC to node B.~~

If the Node B does not receive a valid DSCH data frame for transmission in a given TTI, it assumes that there is no data to be transmitted in that TTI for this transport channel.

[FDD -The Node B shall use the header information in the DSCH data frame to determine which channelisation code(s) and power offset should be used in the PDSCH Uu frame associated to the specified CFN. The specified channelisation code(s) and power offset shall then be used for PDSCH transmission for as long as there is data to transmit or until a new DSCH data frame arrives that specifies that a different PDSCH channelisation code(s) and/or power offset should be used. This feature enables multiple DSCH's with different TTI to be supported.]

[FDD - In the event that the DSCH FP header indicates that a multi-code PDSCH transmission is to be applied ('MC Info' value > 1) then the 'power offset' field indicates the power offset at which each individual code should be transmitted relative to the power of the TFCI bits of the downlink DPCCH directed to the same UE as the DSCH.]

[FDD -The Node B may receive a DSCH data frame which contains a TFI value corresponding to there being no data to transmit, such a DSCH data frame will have no transport blocks. On receiving such a data frame the Node B shall apply the specified channelisation code(s) and power offset as described above starting in the PDSCH Uu frame associated to the specified CFN. This feature enables multiple DSCH's with different TTI to be supported, the use of such a zero payload DSCH data frame solves the problem of how the Node B should determine what channelisation code(s) and power offset should be used in the event that transmission of a transport block set being transmitted with a short TTI comes to an end, whilst the transmission of a TBS with a long TTI continues.]

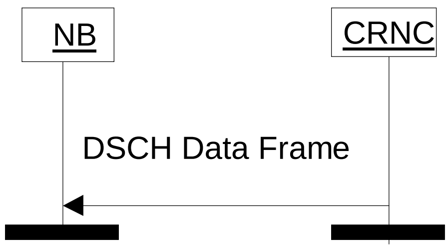

Figure 4: DSCH Data Transfer Procedure

5.1.4 [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.

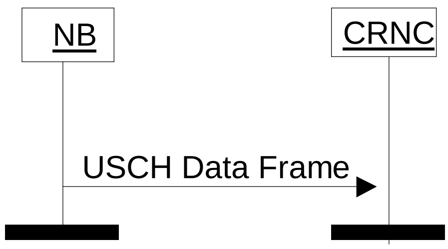

Figure 5: USCH Data Transfer Procedure

6.2.4 Downlink Shared Channels

DSCH Data Frame includes a CFN indicating the frame in which the payload shall be sent. If the payload is to be sent over several frames, the CFN corresponding to the first frame shall be indicated.

The DSCH Data frame structure is different for FDD and TDD.

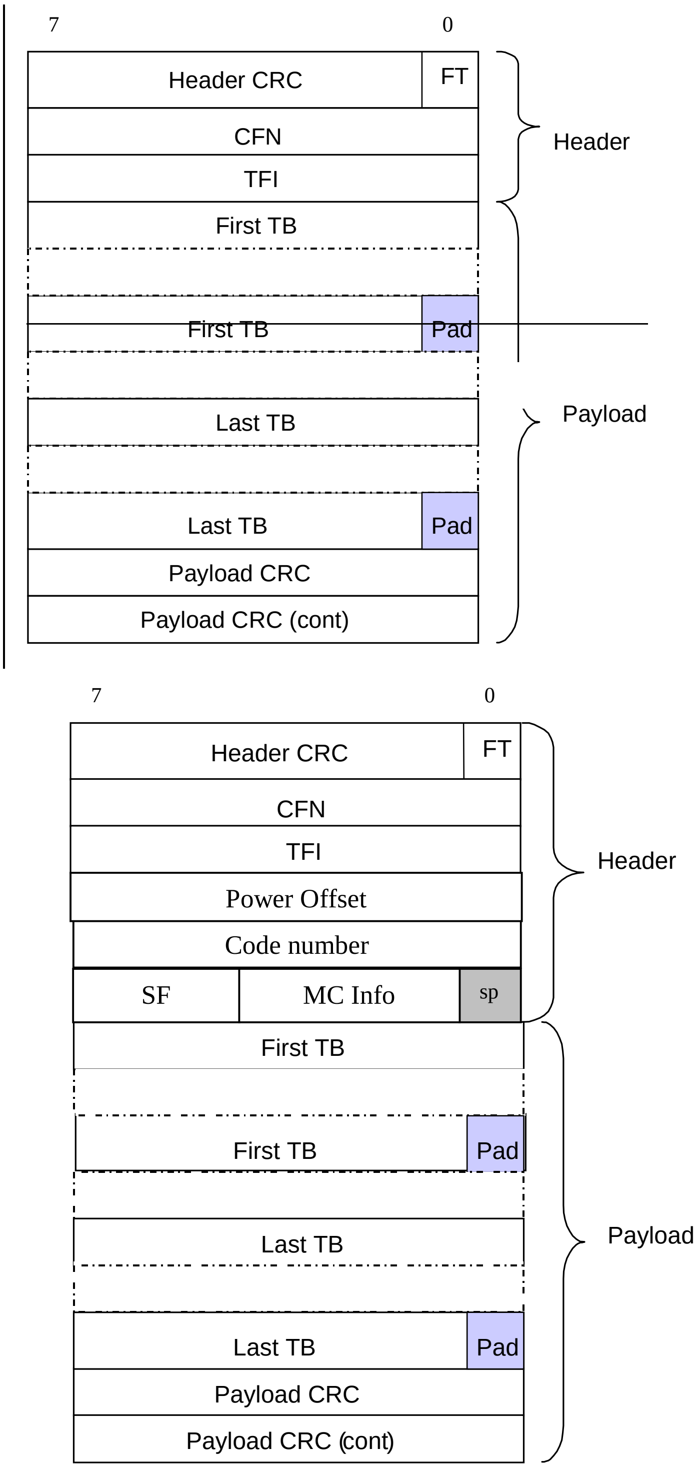

Figure 15: FDD DSCH Data Frame structure

6.2.6.8 CRC indicator

Description: Shows if the transport block has a correct CRC. The UL Outer Loop Power Control may use the CRC indication.

Value range: {0=Correct, 1=Not Correct}

Field length: 1 bit

6.2.6.9 Payload CRC

Description: Cyclic Redundancy Polynomial calculated on the payload of a data frame with polynom X^16+X^15+X^2+1.

The CRC calculation shall cover all bits in the data frame payload, starting from bit 7 in the first byte up to bit 0 in the byte before the payload CRC.

Field length: 16 bits

6.2.6.10 Transmit power level

Description: Preferred transmission power level during this TTI for the corresponding transport channel. The indicated value is the offset relative to the maximum power configured for the [FDD — secondary CCPCH]/[TDD — CCPCH]

Value range: {0 - 25.4 dB}

Granularity: 0.1 dB

Field length: 8 bits

6.2.6.11 Paging Indication (PI)

Description: Describes if the PI Bitmap is present in the payload

Value range: {0=no PI-bitmap in payload, 1=PI-bitmap in payload}

Field length: 1 bit

6.2.6.12 Paging Indication bitmap (PI-bitmap)

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: {18, 36, 72 or 144 Paging Indications}

Field length: 3, 4, 9 or 18 bytes (the PI-bitmap field is padded at the end up to an octet boundary)

6.2.6.13 [FDD - Code Number]

Description: the code number of the PDSCH (~~see~~ the same mapping is used as for the 'code number' IE in-25.331).

Value Range: {0 .. 255}~~.~~

Field length: 8 bits

6.2.6.14 [FDD - Spreading Factor (SF)]

Description: the spreading factor of the PDSCH.

Spreading factor = 0 Spreading factor to be used = 4

Spreading factor = 1 Spreading factor to be used = 8

....

Spreading factor = 6 Spreading factor to be used = 256

Value Range: {4,8,16,32,64,128,256}

Field length: 3 bits

6.2.6.15 [FDD - Power Offset]

Description: Used to indicate the preferred FDD PDSCH transmission power level. The indicated value is the offset relative to the power of the TFCI bits of the downlink DPCCH directed to the same UE as the DSCH.

Power offset = 0 Power offset to be applied = -32 dB

Power offset = 1 Power offset to be applied = -31.75 dB

....

Power offset = 255 Power offset to be applied = +31.75 dB

Value range: {-32 to +31.75 dB}

Granularity: 0.25 dB

Field length: 8 bits

6.2.6.16 [FDD - MC Info]

Description: Used to indicate the number of parallel PDSCH codes on which the DSCH data will be carried. Where multi-code transmission is used the SF of all codes is the same and code numbers are contiguous within the code tree with increasing code number values starting from the code number indicated in the 'code number' field.

Value range: {1..16}

Field length: 4 bits

3GPP TSG-RAN WG3 Meeting #11
Sophia Antipolis, FA, Feb 28-Mar 3, 2000

Document R3-000952
e.g. for 3GPP use the format TP-99xxx
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CHANGE REQUEST

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25.435	**CR**	**001r3**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN#7	for approval	X	strategic	
list expected approval meeting # here ↑		for information		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	X	UTRAN / Radio	X	Core Network	

Source: R-WG3   **Date:** 28 Feb 2000

Subject: Changes for CPCH

Work item:

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

Reason for change: This CR adds changes to include specifications of CPCH on the specified Iub interface on user plane protocols for common transport channel data streams.

Clauses affected: 1; 3.2; 5.1; 6.2;

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:

1 Scope

This document shall provide a description of the UTRAN RNC-Node B(Iub) interface user plane protocols for Common Transport Channel data streams as agreed within the TSG-RAN working group 3.

NOTE: By Common Transport Channel one must understand ~~RACH~~RACH, CPCH [FDD], FACH/PCH, DSCH and USCH.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CFN	Connection Frame Number
CRC	Cyclic Redundancy Checksum
CRCI	CRC Indicator
DCH	Dedicated Transport Channel
DL	Downlink
CPCH	Common Packet Channel
DSCH	Downlink Shared Channel
FP	Frame Protocol
FT	Frame Type
PC	Power Control
QE	Quality Estimate
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
ToA	Time of arrival
TTI	Transmission Time Interval
UL	Uplink
USCH	Uplink Shared Channel

For other abbreviations, please refer to [2].

5 Data Streams User Plane Procedures

5.1 Data Transfer

5.1.1 RACH 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.

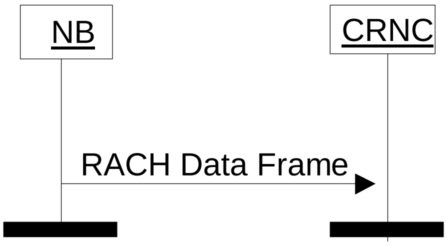
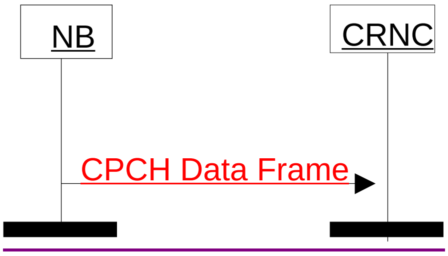


Figure 1: RACH Data Transfer Procedure

5.1.2 CPCH [FDD] 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.



NEW FIGURE: CPCH [FDD] Data Transfer Procedure

5.1.~~2~~3 [FDD — Secondary-CCPCH]/[TDD — CCPCH] related transport Channels

5.1.~~3~~4 Downlink Shared Channels

5.1.~~4~~5 [TDD — Uplink Shared Channels]

6.2 Data frame structure

6.2.1 RACH Channels

The RACH Data Frame includes the CFN corresponding to the SFN of the frame in which the payload was received. If the payload was received in several frames, the CFN corresponding to the first Uu frame in which the information was received shall be indicated.

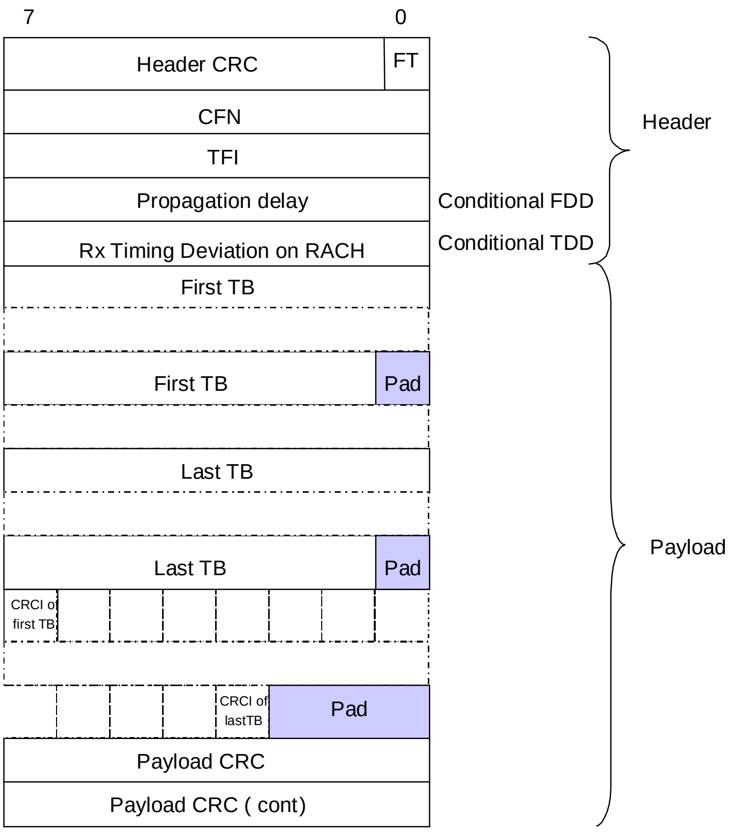


Figure 11: RACH Data Frame structure

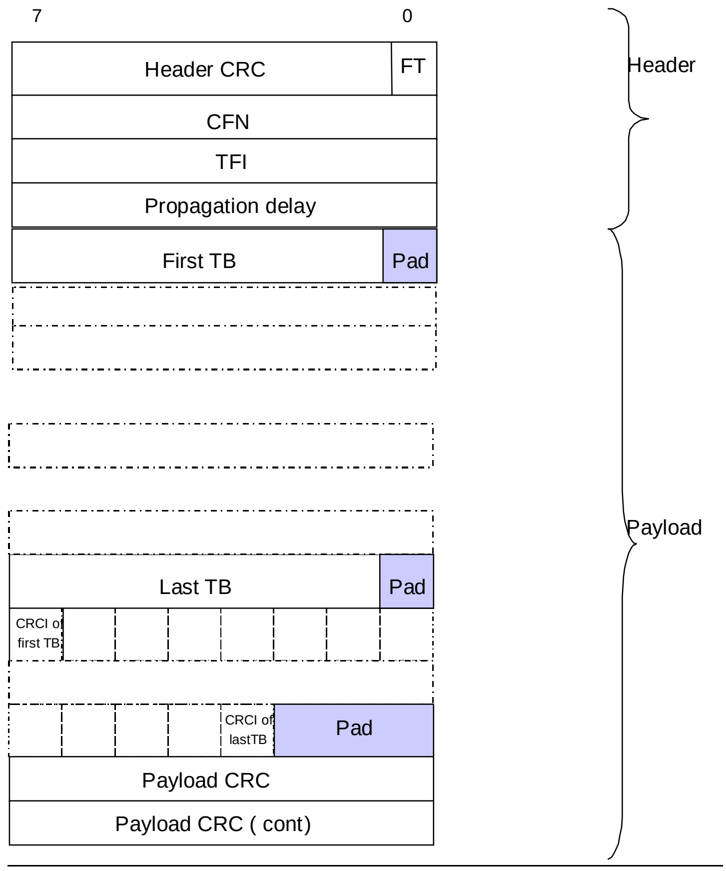
Propagation delay is a conditional Information Element which is only present when the Cell supporting the RACH Transport Channel is a FDD Cell.

Rx Timing Deviation is a conditional Information Element which is only present when the Cell supporting the RACH Transport Channel is a TDD Cell.

6.2.2 CPCH [FDD] Channels

The CPCH [FDD] Data Frame includes the CFN corresponding to the 8 least significant bits of the SFN of the frame in which the payload was received. If the payload was received in several frames, the CFN corresponding to the first Uu frame in which the information was received shall be indicated.

Data frame structure is only applicable to FDD.



NEW FIGURE. FDD CPCH Data Frame structure

6.2.~~2~~3 FACH Channels

6.2.~~3~~4 PCH Channels

6.2.~~4~~5 Downlink Shared Channels

6.2.~~5~~6 Uplink Shared Channels [TDD]

6.2.~~6~~7 Coding of information elements in data frames

3GPP TSG-RAN Working Group 3 Meeting #10
Sofia Antipolis, France, 28 Feb - 3 Mar 2000

Document R3-000763
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.435	**CR**	**013r1**	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG RAN #7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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	X	Core Network	

Source: RAN-WG3 **Date:** February 2000

Subject: CTCH Frame Protocol Error Handling Clarification

Work item:

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

Reason for change: Clarification of Error Handling

Clauses affected: 7

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:

7 Frame protocol error handling

A received frame protocol frame with unknown Information element or with illegal Information element value shall be ignored. Frame protocol frames sent with a CFN in which the radio resources assigned to the associated Iub data port are not available, shall be ignored.

3GPP TSG-RAN WG3 Meeting #11
Sophia Antipolis, France, 28 Feb – 3 March 2000

***Document* R3-000830**
e.g. for 3GPP use the format TP-99xxx or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.435 CR 007r1 Current Version: 3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSG-RAN#7	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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 [X] Core Network [ ]
(at least one should be marked with an X)

Source: RAN-WG3 **Date:** 28 Feb 2000

Subject: Addition of Spare Extension.

Work item:

Category:				**Release:**	
	F	Correction		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	X	Release 97	
	C	Functional modification of feature		Release 98	
	D	Editorial modification		Release 99	X
				Release 00	

Reason for change: To enable backward compatible additions and changes this CR proposes to include a Spare Extension into Data and Control frames of Iub/Iur User Plane Protocols.

If such changes are needed in future, the Spare Extension indicates the position for them.

Clauses affected: 4, 6.1.1., 6.2.2, 6.2.3., 6.2.4, 6.3.1., 6.3.3.1., 6.3.3.2., 6.3.3.3., 6.3.3.4., 6.3.3.5., 6.3.3.6., 6.3.3.7., 6.3.3.8.

Other specs affected:			
Other 3G core specifications		→ List of CRs:	R3-000497 (TS 25.427) R3-000498 (TS 25.425)
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:

6.1 General

The general structure of a Common Transport Channel frame consists of a header and a payload. This structure is depicted in the below:

Header	Payload: Data or Control Information

Figure 9: General Frame Structure

The header shall contain the frame type field and information related to the frame type.

There are two types of frames (indicated by the Frame type field).

- Data frame
- Control frame

In this specification the structure of frames will be specified by using pictures similar to the following figure:

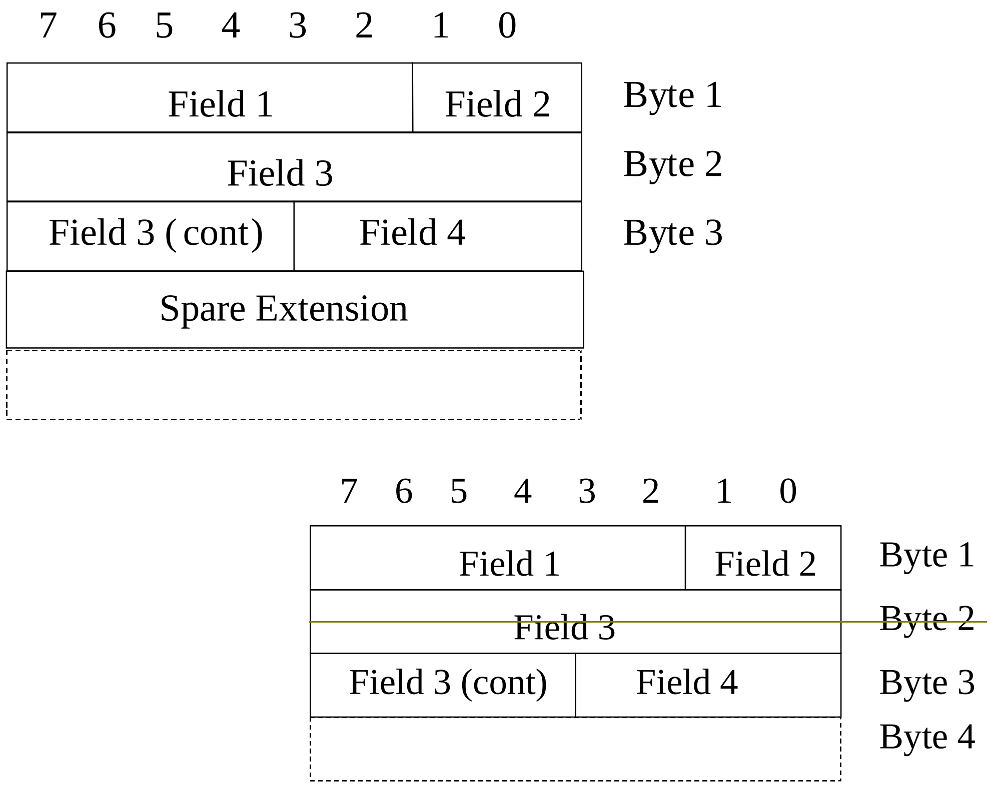


Figure 10: Example frame structure

Unless otherwise indicated, fields which consist of multiple bits within a byte will have the more significant bit located at the higher bit position (indicated above frame in Figure 10). In addition, if a field spans several bytes, more significant bits will be located in lower numbered bytes (right of frame in Figure 10).

On the Iub interface, the frame will be transmitted starting from the lowest numbered byte. Within each byte, the bits are sent according decreasing bit position (bit position 7 first).

The parameters are specified giving the value range and the step (if not 1). The coding is done as follows (unless otherwise specified):

- Unsigned values are binary coded
- Signed values are 2's complement binary coded

The Spare Extension indicates the location where new IEs can in the future be added in a backward compatible way. The Spare Extension shall not be used by the transmitter and shall be ignored by the receiver.

6.2 Data frame structure

6.2.1 RACH Channels

The RACH Data Frame includes the CFN corresponding to the SFN of the frame in which the payload was received. If the payload was received in several frames, the CFN corresponding to the first Uu frame in which the information was received shall be indicated.

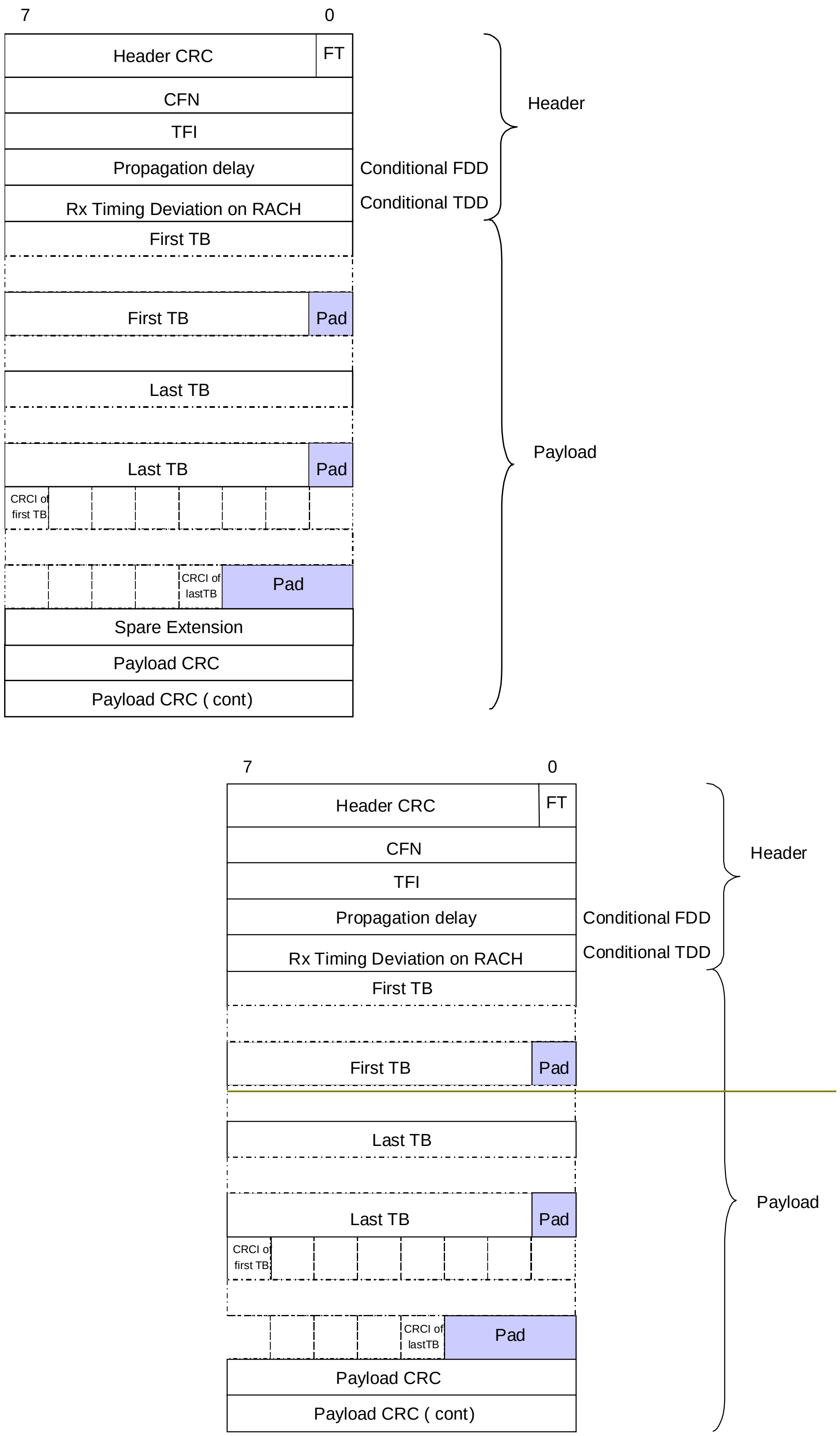


Figure 11: RACH Data Frame structure

6.2.2 FACH Channels

FACH Data Frame includes the CFN corresponding to the Uu frame at which this data in which the payload (FACH TBS) has to be transmitted. If the payload is to be sent in several frames, the CFN corresponding to the first frame shall be indicated.

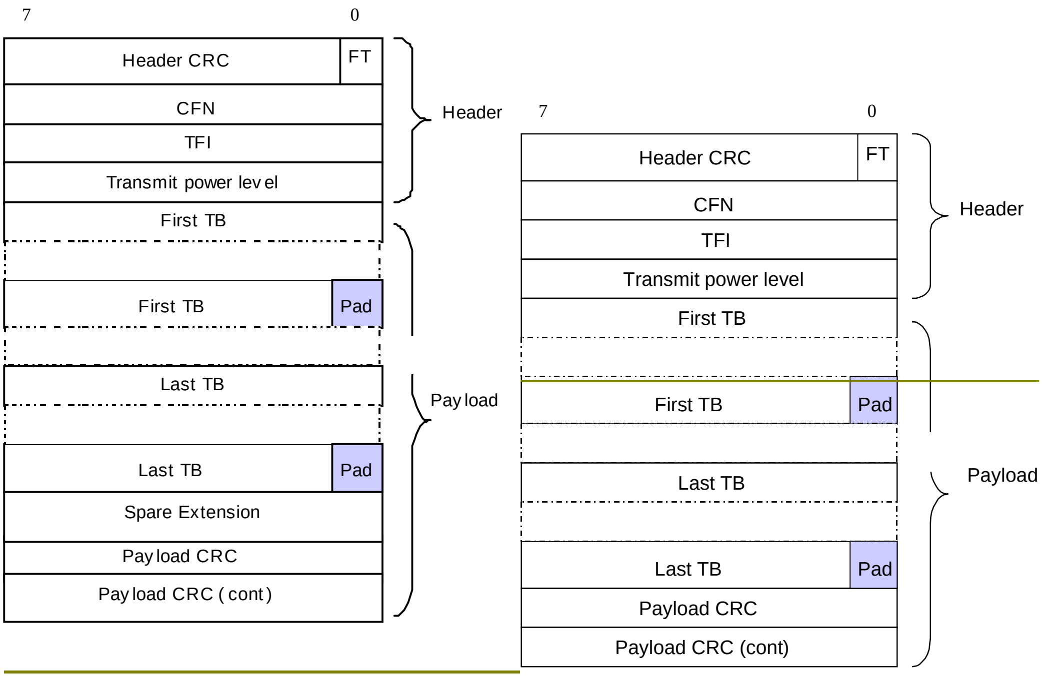


Figure 12: FACH Data Frame structure

6.2.3 PCH Channels

PCH Data Frame includes the CFN corresponding to the Uu frame at which this data in which the payload (PCH TBS, Paging indicator information) has to be transmitted. If the payload is to be sent in several frames, the CFN corresponding to the first frame shall be indicated. 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 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.

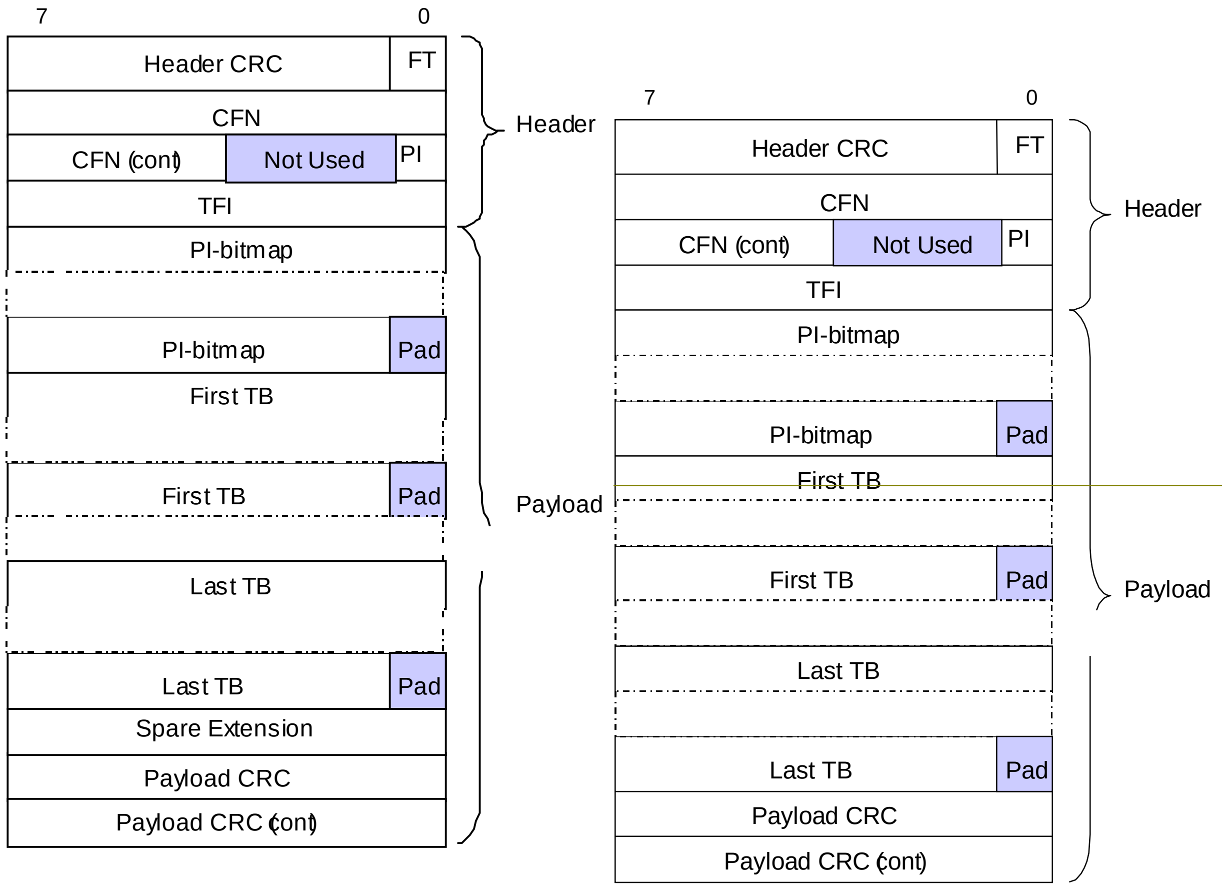


Figure 13: PCH Data Frame structure

"Not Used" bits shall be set to 0 by the RNC and ignored by the Node B.

6.2.4 Downlink Shared Channels

DSCH Data Frame includes a CFN indicating the frame in which the payload shall be sent. If the payload is to be sent over several frames, the CFN corresponding to the first frame shall be indicated.

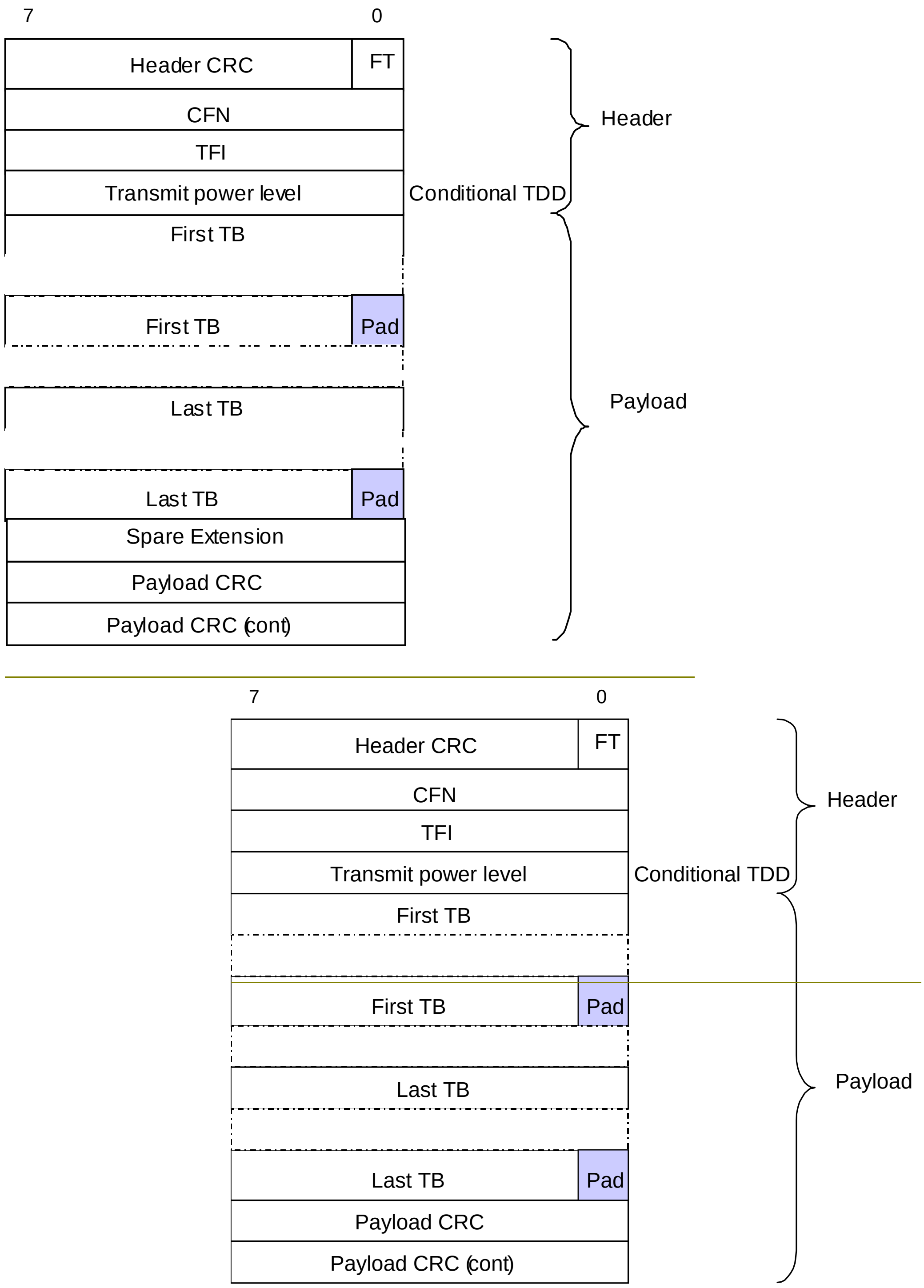


Figure 14: DSCH Data Frame structure

6.2.5 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.

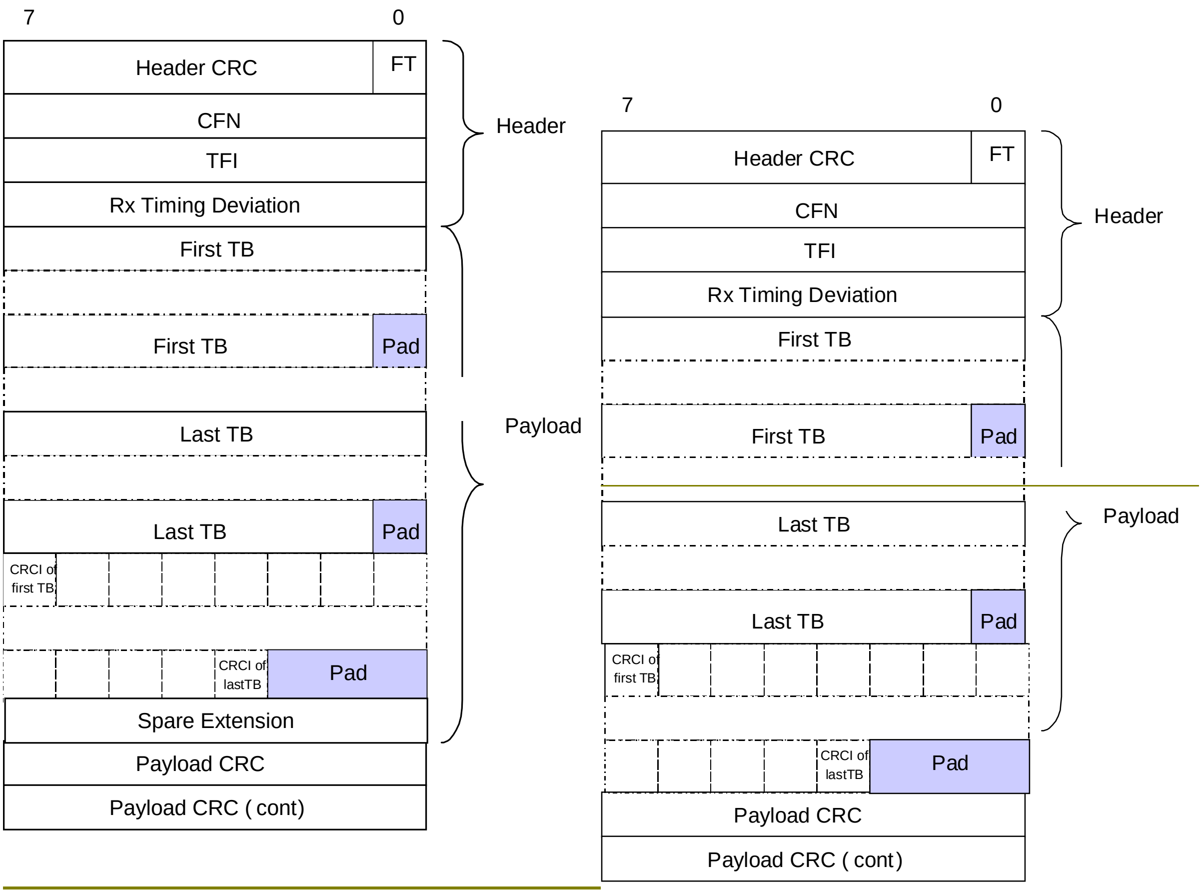


Figure 15: USCH Data Frame structure

6.2.6 Coding of information elements in data frames

6.2.6.14 Spare Extension

Description: Indicates the location where new IEs can in the future be added in a backward compatible way.

Field length: 0-2 octets.

6.3.3 Payload structure and information elements

6.3.3.1 Timing Adjustment

6.3.3.1.1 Payload Structure

Table below shows the structure of the payload when control frame is used for the timing adjustment.

7	Number of bytes	
CFN	1	Payload
ToA	1	
ToA (cont)	1	
Spare Extension	0-32	

7 0	
CFN	Payload (3 bytes)
ToA	
ToA (cont)	

Figure 17: Timing adjustment payload structure (non-PCH transport bearers)

7	0	Number of bytes	
CFN		1	Payload
CFN(cont)	Not Used	1	
ToA		1	
ToA (cont)		1	
ToA(cont)	Not Used	1	
Spare Extension		0-32	

7	0	
CFN		Payload (5 bytes)
CFN(cont)	Not Used	
ToA		
ToA (cont)		
ToA(cont)	Not Used	

Figure 18: Timing adjustment payload structure (PCH transport bearer)

6.3.3.1.4 Spare Extension

Description: Indicates the location where new IEs can in the future be added in a backward compatible way.

Field length: 0-32 octets.

6.3.3.2 DL synchronisation

6.3.3.2.1 Payload Structure

Table below shows the structure of the payload when control frame is used for the user plane synchronisation.

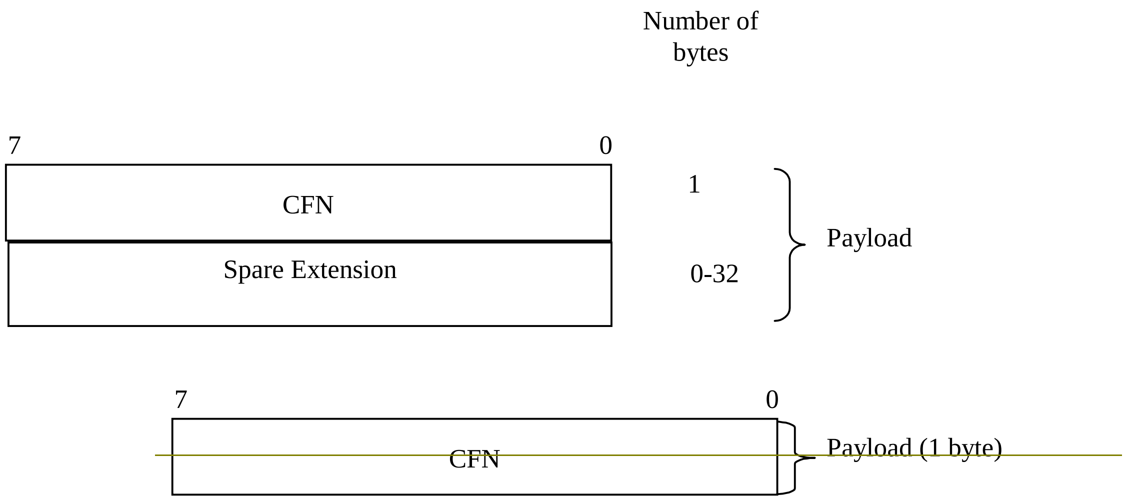


Figure 19: DL Synchronisation payload structure (non-PCH transport bearers)

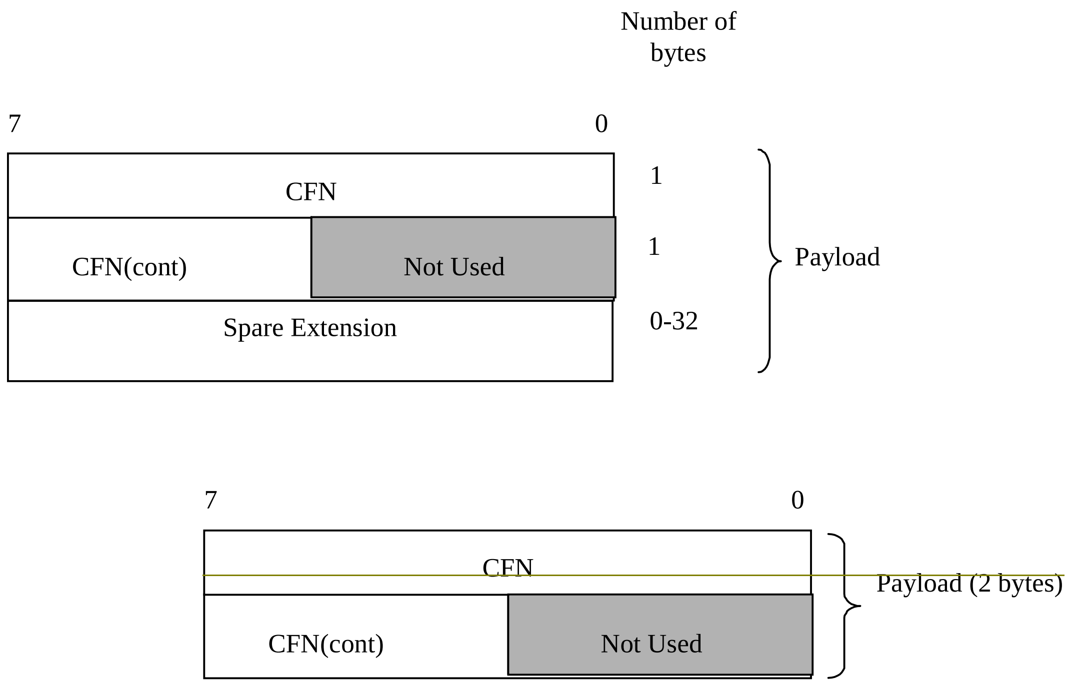


Figure 20: DL Synchronisation payload structure (PCH transport bearers)

6.3.3.2.3 Spare Extension

Description: The Spare Extension is described in section 6.3.3.1.4.

6.3.3.3 UL Synchronisation

6.3.3.3.1 Payload Structure

Table below shows the structure of the payload when the control frame is used for the user plane synchronisation (UL).

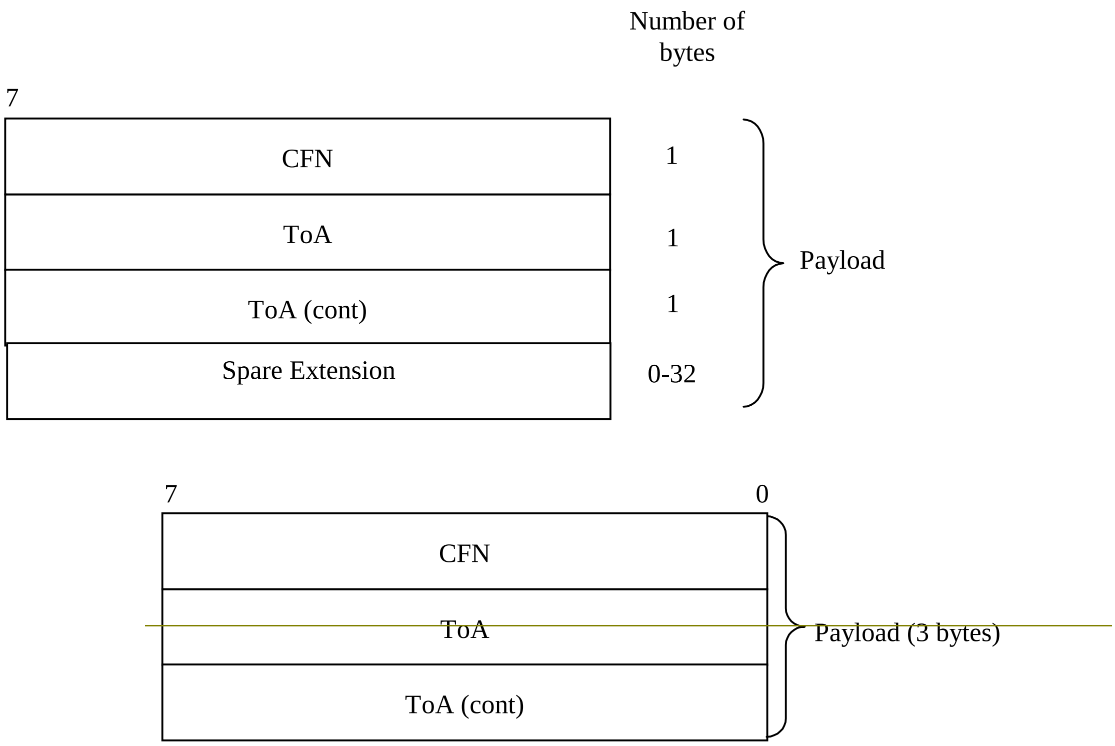
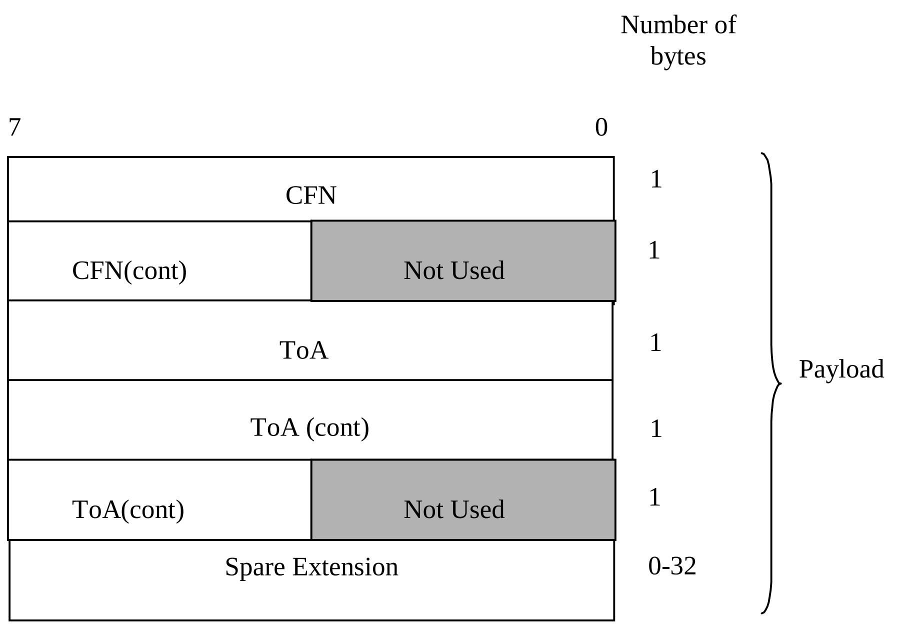


Figure 21: UL Synchronisation payload structure (non-PCH transport bearers)



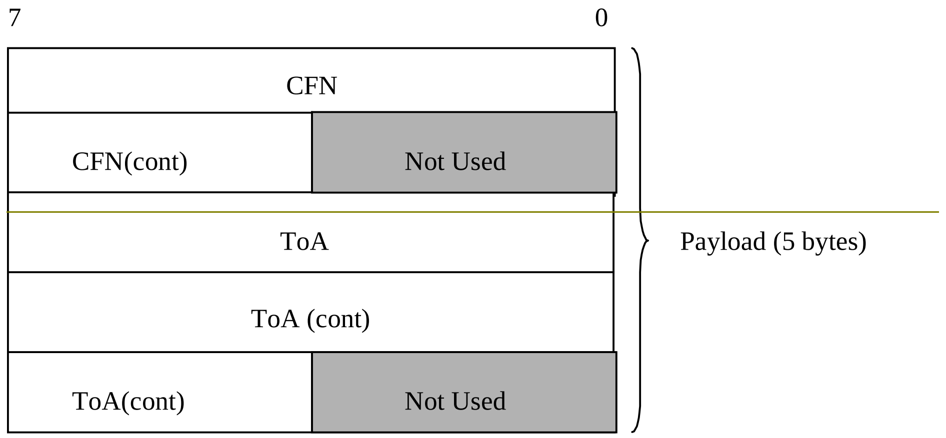


Figure 22: UL Synchronisation payload structure (PCH transport bearers)

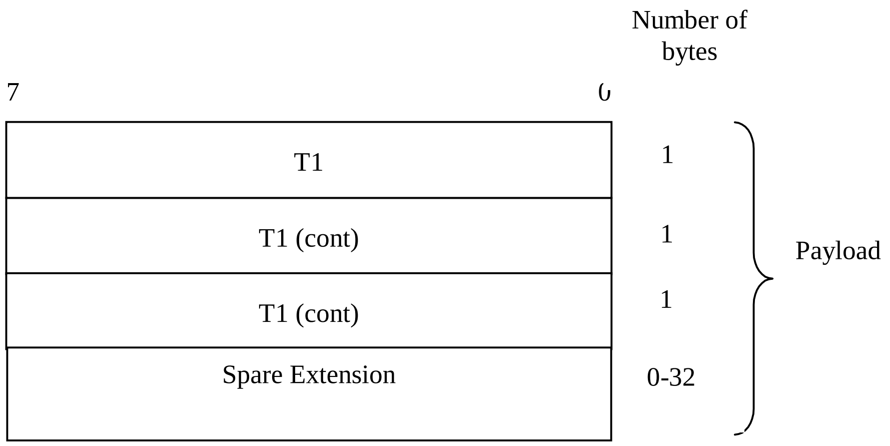
6.3.3.3.4 Spare Extension

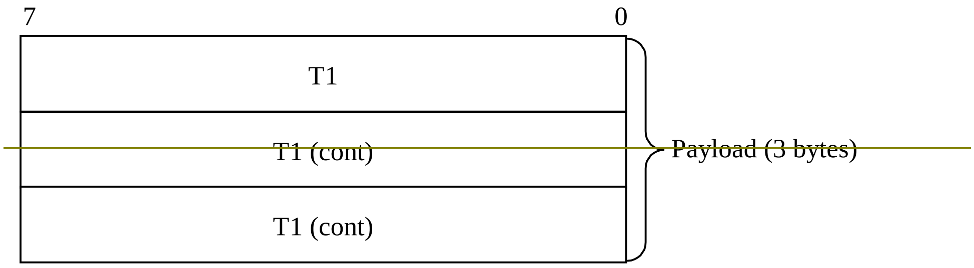
Description: The Spare Extension is described in section 6.3.3.1.4.

6.3.3.4 DL Node Synchronisation

6.3.3.4.1 Payload Structure

The payload of the DL Node synchronisation control frames is shown in the figure below:





6.3.3.4.3 Spare Extension

Description: The Spare Extension is described in section 6.3.3.1.4.

6.3.3.5 UL Node Synchronisation

6.3.3.5.1 Payload Structure

The payload of the UL Node synchronisation control frames is shown in the figure below:

7 … 0	Number of bytes	
T1	1	Payload
T1 (cont)	1	
T1 (cont)	1	
T2	1	
T2 (cont)	1	
T2 (cont)	1	
T3	1	
T3 (cont)	1	
T3 (cont)	1	
Spare Extension	0-32	

7 … 0	
T1	Payload (9 bytes)
T1 (cont)	
T1 (cont)	
T2	
T2 (cont)	
T2 (cont)	
T3	
T3 (cont)	
T3 (cont)	

6.3.3.5.5 Spare Extension

Description: The Spare Extension is described in section 6.3.3.1.4.