TSG-RAN Meeting #13 *TSGRP#13(01) 0585*
Beijing, China, 18 - 21, September, 2001

Title: **Agreed CRs to TS 25.425**

Source: **TSG-RAN WG3**

Agenda item: **8.3.3/8.3.4/9.4.3**

RP Tdoc	R3 Tdoc	Spec	CR_Num	Rev	Release	CR_Subject	Cat	Cur_Ver	New_Ver	Workitem
RP-010585	R3-012603	25.425	032	2	R99	General Corrections on Common Transport Channel Data Streams	F	3.4.0	3.5.0	TEI
RP-010585	R3-012604	25.425	033	2	Rel-4	General Corrections on Common Transport Channel Data Streams	A	4.1.0	4.2.0	TEI

3GPP TSG-RAN WG3 Meeting #23
Helsinki, Finland, August 27th-31st, 2001

Tdoc R3-012603

CR-Form-v3

CHANGE REQUEST

⌘ **25.425** **CR** **032** ⌘ rev **2** ⌘ Current version: **3.4.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	General Corrections on Common Transport Channel Data Streams
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	August 2001
Category:	⌘	**F**
Release:	⌘	*R99*

Use one of the following categories:
F *(essential 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)*

Reason for change: ⌘ Editorial Corrections

Summary of change: ⌘

In Section 2, an additional reference to TS 25.321 is added because of the new reference to it in Section 6.2.5.13.

In 3.3, 4 formatting changes were made and 3 abbreviations were removed.

In 4.1.2, the MAC-c should be changed the MAC-c/sh.

In 4.2, 'data transport' is modified to 'the Data Transport Network Layer' to specify where services are served. And typo, 'ans' is corrected to 'and'.

In Figures of Section 5.1, 'data transfer' is corrected to 'Data Transfer procedure' to make clear that these are the procedures. And all 'data frame's are changed to 'DATA FRAME's because of consistency of 25.413, 25.423, and 25.433. There are explanations of the Procedure and Message notations.

In 5.1.2 and 5.1.4, MAC-c/sh is added in front of the SDUs and there are some minor editorial corrections and clarification phrases were added.

In 5.2, 'procedure's are added to make more clear that these are the procedure. And there are minor corrections and added clarification phrases.

In 6.1, 'picture 1' is corrected to 'Figure 8.'

In 6.2, there are also modifications of procedure and message notations, IEs in Figure and the titles, USCH Data Frames[TDD] and DSCH Data Frames, are corrected to 'USCH Channels[TDD] and DSCH Channels'.

In 6.2.5, 6.2.5.2, 6.2.5.3, 6.2.5.9, 6.2.5.12, 6.2.5.13, there are minor corrections.

The 6.2.3.14 is corrected to 6.2.5.14.

In 6.3 there are corrections of message notations and IE in Figure. And clarification phrases are added.

		In 6.3.3.1.1, subclause 6.2.3.4 is changed to subclause 6.2.5.4. In 6.3.3.1.2, subclause 6.2.3.6 is changed to subclause 6.2.5.7. In 6.3.3.4.4, subclause 6.3.3.14 is changed to subclause 6.2.5.15. In 6.3.3.1.3, there is minor correction.
Consequences if not approved:	⌘	If this CR is not approved, the mistake will remain in this specification. Backward compatibility: This CR is not backward compatible however is changing an essential correction.

Clauses affected:	⌘	2, 3.3, 4.1.2, 4.2, 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.2.4, 6.1, 6.2, 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.5.2, 6.2.5.3, 6.2.5.9, 6.2.5.12, 6.2.3.14, 6.3, 6.3.3.1, 6.3.3.1.1, 6.3.3.1.2, 6.3.3.1.3, 6.3.3.2, 6.3.3.3, 6.3.3.3.4, 6.3.3.3.5, 6.3.3.4, 6.3.3.4.1, 6.3.3.4.4			
Other specs affected:	⌘	X	Other core specifications	⌘	25.425 V4.0.0 CR 033
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

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. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] ITU-T Recommendation I.361 (11/95): "B-ISDN ATM Layer Specification".

[2] ITU-T Recommendation I.363.2 (9/97): "B-ISDN ATM Adaptation Layer type 2".

[3] ITU-T Recommendation I.366.1 (6/98): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2".

[4] 3G TS 25.427: "Iub/Iur User Plane Protocols for DCH Data Streams".

[5] 3G TS 25.401: "UTRAN overall description".

[6] 3G TS 25.990: "UTRAN vocabulary".

[7] 3G TS 25.321: “MAC protocol specification”.

3.3 Abbreviations

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

AAL2	ATM Adaptation Layer type 2
ATM	Asynchronous Transfer Mode
CFN	Connection Frame Number
CmCH	Com~~M~~mon T~~t~~ransport Channel
CPCH	Common Packet Channel
~~CPS~~	~~Common Part Sublayer~~
C-RNC	Controlling Radio Network Controller
CRC	Cyclic Redundancy Checksum
DCH	Dedicated Transport Channel
DL	Downlink
D-RNTI	Drift RNTI
DSCH	Downlink Shared Channel
FACH	Forward Access Channel
FP	Frame Protocol
FT	Frame Type
~~PC~~	~~Power Control~~
RACH	Random Access Ch~~H~~annel
RNC	Radio Network Controller
RNTI	Radio Network Temporary Identity
SRNC	Serving Radio Network Controller
S-RNTI	Serving RNTI
SSCS	Service Specific Convergence Sublayer
~~SSSAR~~	~~Service Specific Segmentation and Reassembly sublayer~~
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
ToA	Time of A~~a~~rrival
TTI	Transmission Time Interval
UE	User Equipment
UL	Uplink
U-RNTI	UTRAN RNTI
USCH	Uplink Shared Channel

4.1.2 FACH Data Streams User Plane Protocol Services

FACH frame protocol provides the following services:

- Transport of MAC-c/sh SDUs from the SRNC to the DRNC for FACH common transport channel.
- Flow Control between MAC-d and MAC-c/sh.

4.2 Services expected from the Ddata Ttransport Network layer

The following services are expected from the transport layer:

- Delivery of Frame Protocol PDUs.

In sequence delivery is not required. However, frequent out-of-sequence delivery may impact the performance and ans should be avoided.

5.1 Data Transfer

5.1.1 RACH/CPCH[FDD] Data Transfer

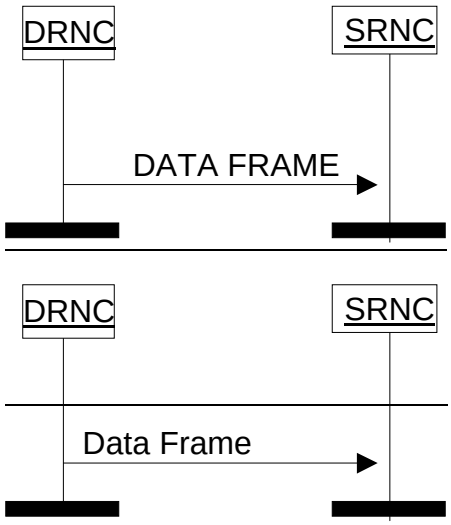


Figure 1: RACH/CPCH[FDD] Ddata Ttransfer procedure

Data received on the RACH/CPCH[FDD] transport channel is transmitted from the DRNC to the SRNC using RACH/CPCH[FDD] DATA FRAMEsdata frames. The data is protected by a mandatory payload CRC. Multiple MAC-c/sh SDUs of same length may be transmitted in the same RACH/CPCH[FDD] DATA FRAMEdata frame.

5.1.2 FACH Ddata Ttransfer

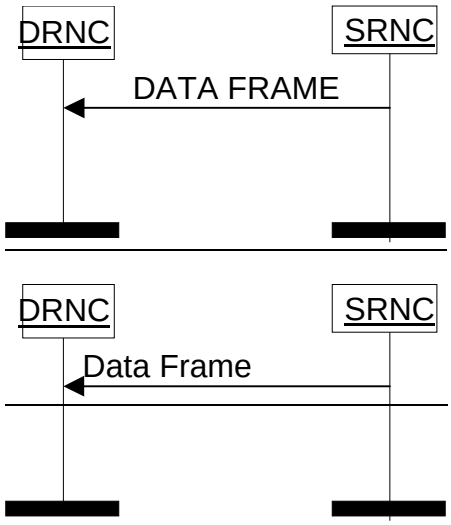


Figure 2: FACH Ddata Ttransfer procedure

Data to be transmitted on the FACH transport channel is transmitted from the SRNC to the DRNC using FACH DATA FRAMEsdata frames. Multiple MAC-c/sh SDUs of same length and same priority level (CmCH-PI) may be transmitted in the same FACH DATA FRAMEdata frame. Within one priority level and size the MAC-c/sh SDUs shall be transmitted by the DRNS on the Uu interface in the same order as they were received from the SRNC.

The *UE-ID Type Indicator* IE indicates which UE-ID type MAC-c/sh shall include in the MAC header.

5.1.3 USCH Data Transfer [TDD]

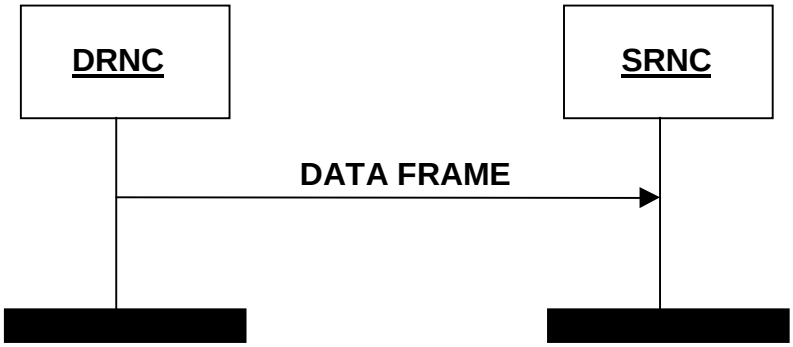


Figure 3: USCH Data Ttransfer procedure

Whenever there is USCH data in the DRNC, transfer is done immediately to the SRNC via the USCH Data Port using USCH DATAata FRAMEframes.

Data received on the USCH transport channel is transmitted from the DRNC to the SRNC using USCH DATAdata FRAMEframes. The data is protected by a mandatory payload CRC. Multiple MAC-c/sh SDUs of same length may be transmitted in the same USCH DATAdata FRAMEframe.

5.1.4 DSCH Data Transfer

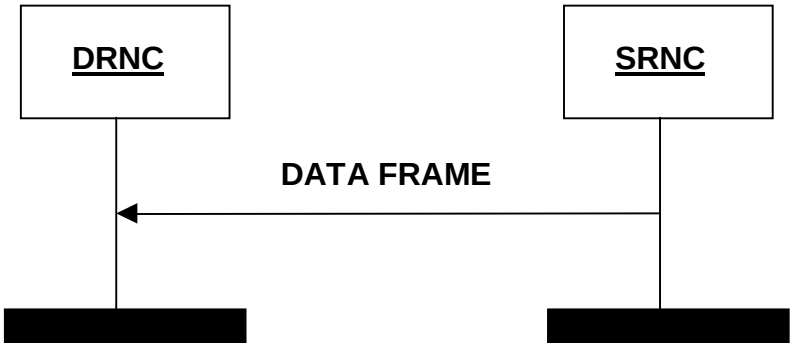


Figure 4: DSCH Data Transfer procedure

When the SRNC has been granted capacity by the DRNC via the DSCH CAPACITY ALLOCATION Control Frame and the SRNC has data waiting to be sent, then the DSCH DATAdata FRAMEframe is used to transfer the data. When data is waiting to be transferred, and a CAPACITYcapacity ALLOCATIONallocation Control Frame is received, a DSCH DATAdata FRAMEframe will be transmitted immediately according to allocation received.

Multiple MAC-c/sh SDUs of same length and same priority level (CmCH-PI) may be transmitted in the same DSCH dataDATA frameFRAME.

The DSCH DATAdata FRAMEframe includes a *Uuser Bbuffer Ssize* IEindication to indicate the amount of data pending for the respective UE and for the indicated priority level. Within one priority level and size the MAC-c/sh SDUs shall be transmitted by the DRNS on the Uu interface in the same order as they were received from the SRNC.

5.2 Flow Control

5.2.1 FACH Flow Control

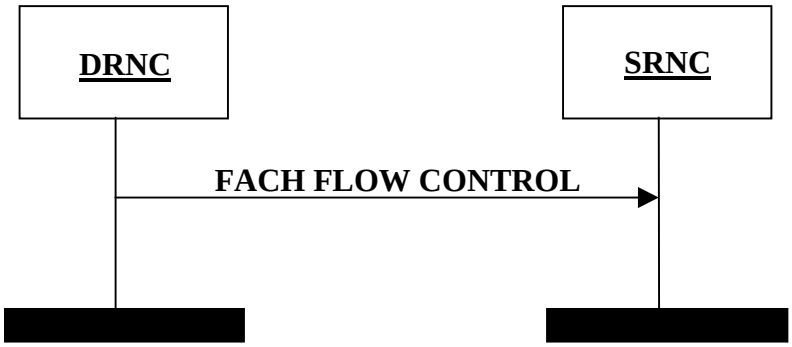


Figure 4A: FACH Flow Control procedure

The FACH ~~f~~Flow ~~c~~Control procedure~~frame~~ is used by the DRNC to control the user data flow. It may be generated in response to a FACH Capacity Request procedure or at any other time. The *Credits* IE indicates the number of MAC-c/sh SDUs the SRNC is allowed to transmit for the UE identified by the *SRNTI* IE and the associated priority level~~class~~ indicated by the *Common Transport Channel Priority Indicator* IE.

The *Credits* IE indicates the total amount of credits granted. Any credits previously granted are withdrawn.

If *Credits* IE = 0 (e.g. due to congestion in the DRNC), the SRNC shall immediately stop transmission of MAC-c/sh SDUs.

Credits IE = 'unlimited' indicates that the SRNC may transmit an unlimited number of MAC-c/sh SDUs.

5.2.2 DSCH Capacity Request

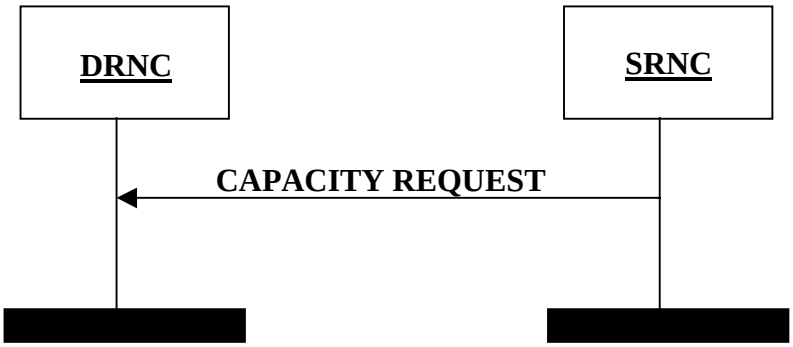


Figure 5: DSCH Capacity Request procedure

The DSCH Capacity Request procedure provides means for the SRNC to request DSCH capacity by indicating the user buffer size in the SRNC for a given priority level.

The SRNC is allowed to reissue the DSCH ~~c~~Capacity ~~r~~Request procedure if no CAPACITY ALLOCATION~~allocation~~ has been received within an appropriate time threshold.

5.2.3 DSCH Capacity Allocation

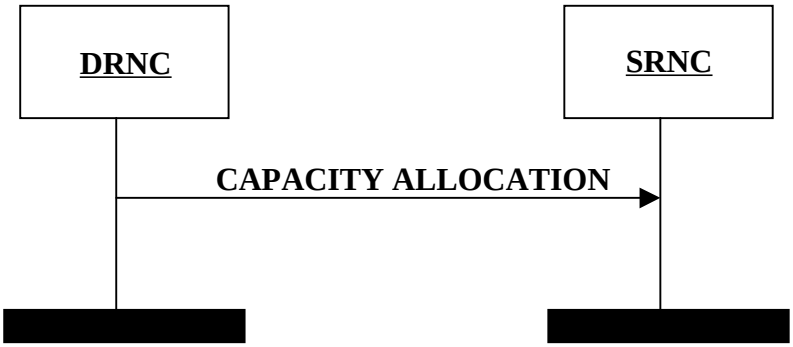


Figure 6: DSCH Capacity Allocation procedure

The DSCH Capacity Allocation procedure is generated within the DRNC. It may be generated either in response to thea DSCH Ccapacity Rrequest procedure or at any other time.

The DRNC may use this message to modify the capacity at any time, irrespective of the reported user buffer status.

The DSCH CAPACITYapacity ALLOCATIONllocation frame is used by the DRNC to control the user data flow. *Credits* IE It indicates the number of MAC-c/sh SDUs that the SRNC is allowed to transmit for the UE and the associated priority levelclass indicated by the *Common Transport Channel Priority Indicator* IE.

The *Maximum. MAC- c/sh SDU Llength*, *Credits*, *Interval* and *Repetition Period* IEs indicates the total amount of capacity granted. Any capacity previously granted is replaced.

If *Ccredits* IE = 0 (e.g. due to congestion in the DRNC), the SRNC shall immediately stop transmission of MAC-c/sh SDUs. If *Ccredits* IE = 255, the SRNC can transmit MAC-c/sh SDUs with unlimited capacity.

The IEs used in the DSCH CAPACITY ALLOCATION Control Frame are the *Common Transport Channel Priority Indicator*, *Credits*, *Maximum. MAC- c/sh SDU Length*, *Interval* and the *Repetition PeriodCount.*

If the Repetition Period IE = *'unlimited repetition period'* it indicates that the SRNC may transmit the specified number of MAC-c/sh SDUs for an unlimited period according to the bounds of *Maximum MAC-c/sh SDU L length*, *Credits* and *Interval* IEs.

5.2.4 FACH Capacity Request

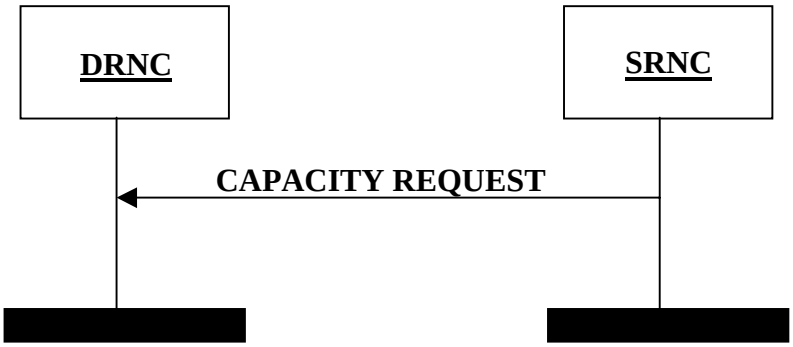


Figure 6A: FACH Capacity Request procedure

The FACH Capacity Request procedure provides the means for the SRNC to notify the DRNC about the user buffer size for a given priority levelclass. It may be sent if no FACH FLOWlow CONTROLontrol frame has been received within an appropriate time threshold, or to signal an event such as data arrival or user buffer discard.

6 Frame Structure and Coding

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 figure 7:

Header	Payload: Data or Control Information

Figure 7: 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).

1. Data frame
2. Control frame

In this specification the structure of frames will be specified by using pictures similar to the following figure 8:

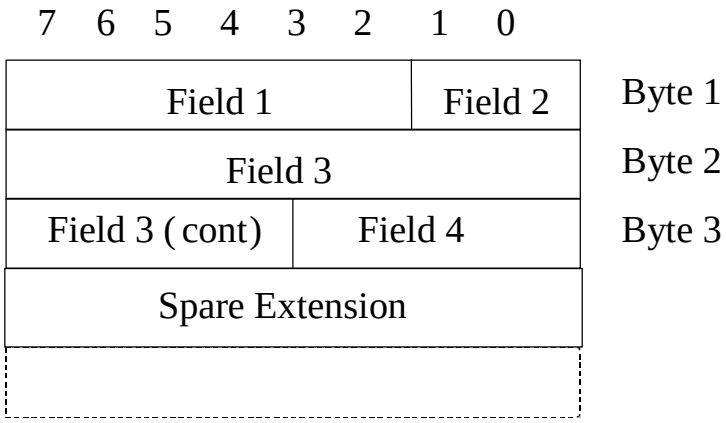


Figure 8: Example frame structure

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 8~~ picture 1~~). In addition, if a field spans several bytes, more significant bits will be located in lower numbered bytes (right of frame in Figure 8~~ picture 1~~).

On the Iur 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 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.

Spare bits shall be set to 0 by the transmitter and shall be ignored by the receiver.

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

- Lowest value (in the range) coded as a sequence of 0's;
- Highest value in the range coded as a sequence of 1's.

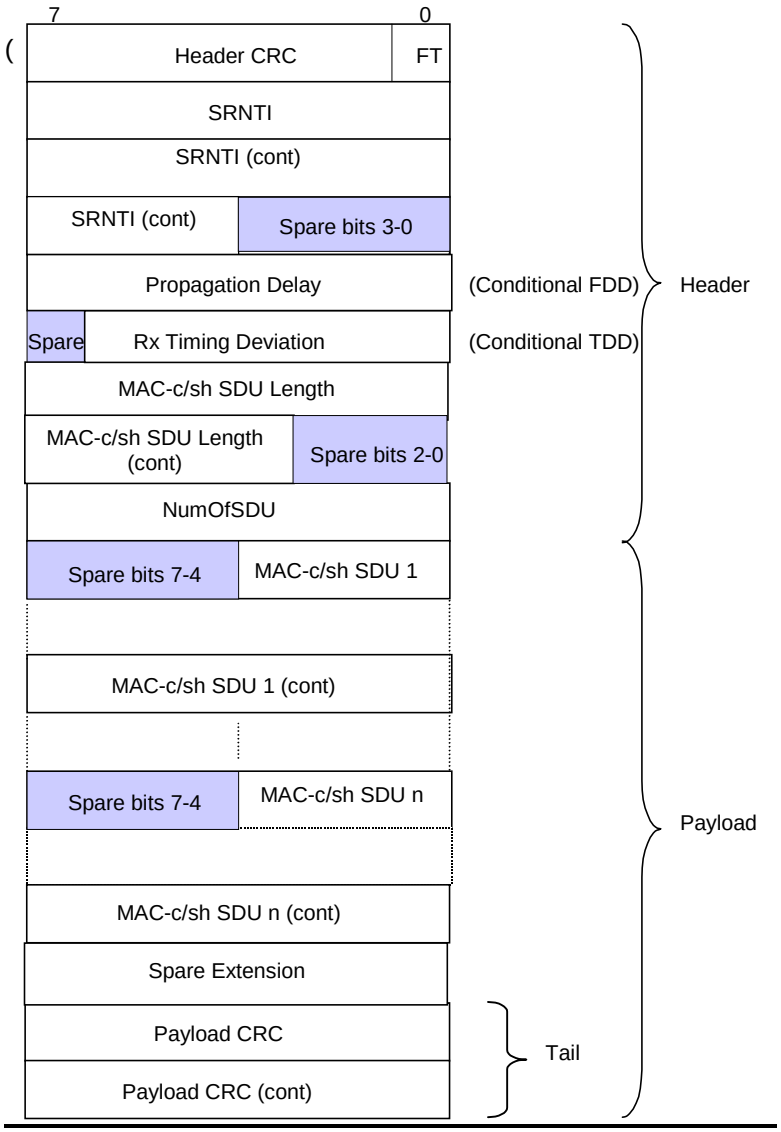
6.2 Data Fframe structure

6.2.1 RACH/CPCH[FDD] Channels

RACH/CPCH[FDD] Iur data stream corresponds to the data stream of one specific UE. The used transport bearer for the transport of FACH/RACH or FACH/CPCH[FDD] is bi-directional.

The RACH/CPCH[FDD]/FACH FP does not facilitate multiplexing of data streams from different UEs onto the same data frame, but does allow multiple UEs to share the same transport bearer.

The RACH DATAata FRAMEframe structure is defined as common for FDD and TDD with conditional fields, and CPCH[FDD] DATAata FRAMEframe structure is defined as common for FDD only.


7
0
Header CRC
FT
SRNTI
SRNTI (cont)
SRNTI (cont)
Spare bits 3-0
Propagation Delay
(Conditional FDD)
Spare
Rx Timing Deviation
(Conditional TDD)
MAC-c/sh SDU Length
MAC-c/sh SDU Length (cont)
Spare bits 2-0
NumOfSDU
Spare bits 7-4
MAC-c/sh SDU 1
MAC-c/sh SDU 1 (cont)
Spare bits 7-4
MAC-c/sh SDU n
MAC-c/sh SDU n (cont)
Spare Extension
Payload CRC
Payload CRC (cont)
Header
Payload
Tail

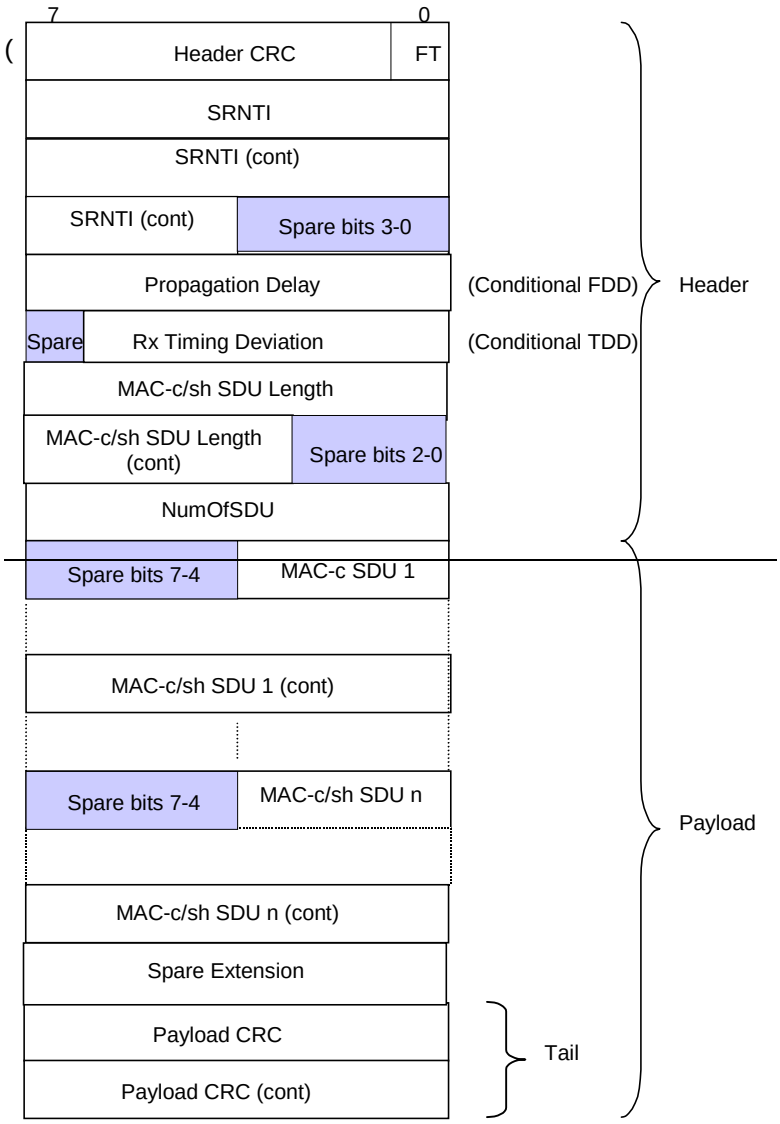
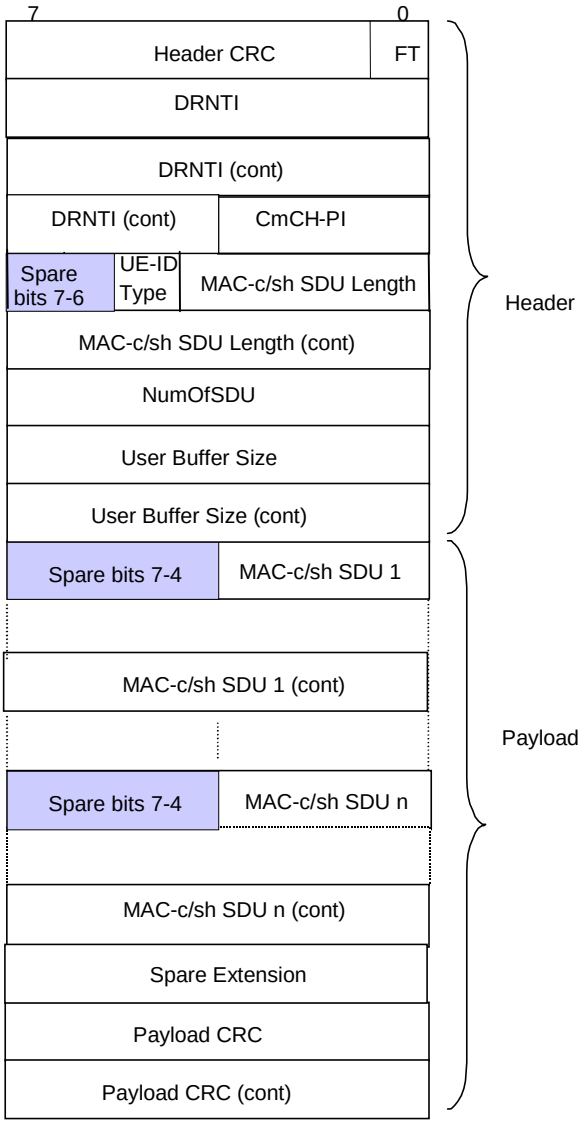


Figure 9: RACH/CPCH[FDD] D<u>ATA</u>~~ata~~ F<u>RAME</u>~~rame~~ structure

Propagation <u>D</u>~~d~~elay is a conditional Information Element which is only present when the Cell supporting the RACH/CPCH[FDD] 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 FACH Channels



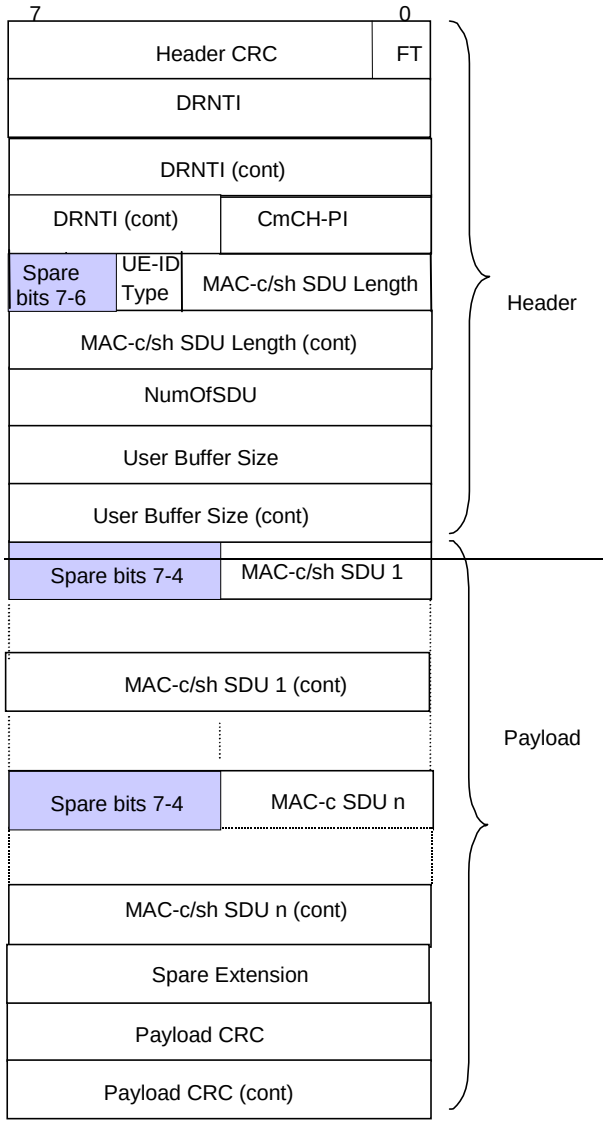
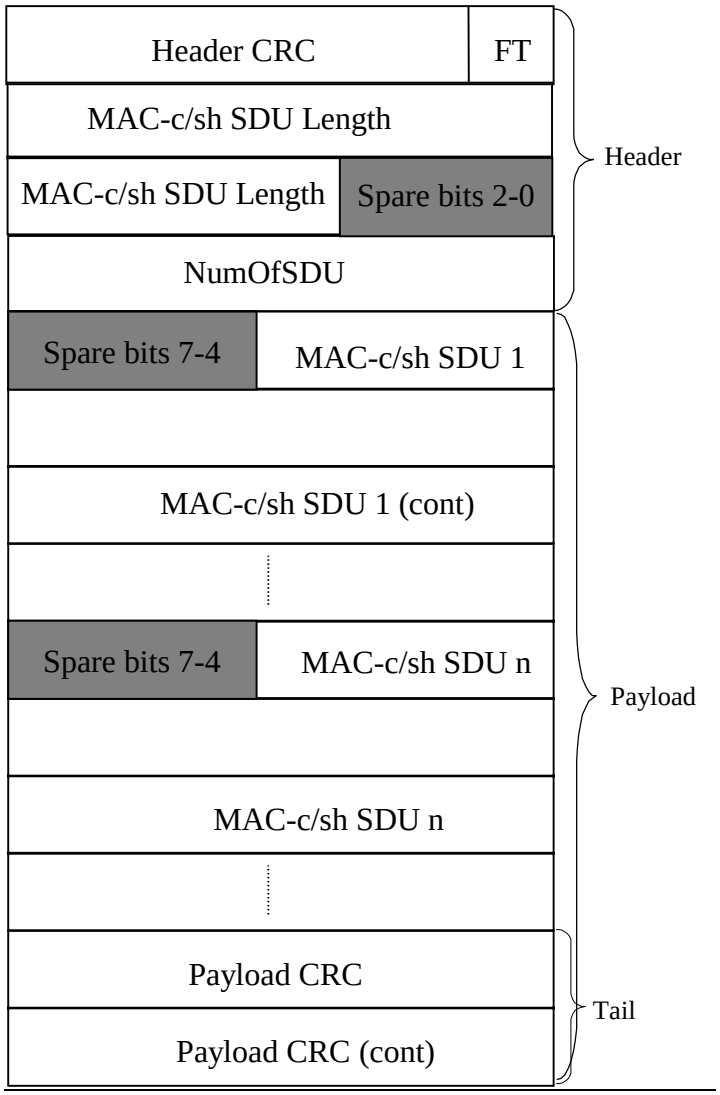


Figure 10: FACH D<u>ATA</u>~~ata~~ F<u>RAME</u>~~rame~~ structure

6.2.3 USCH Channels ~~Data Frames~~ [TDD]



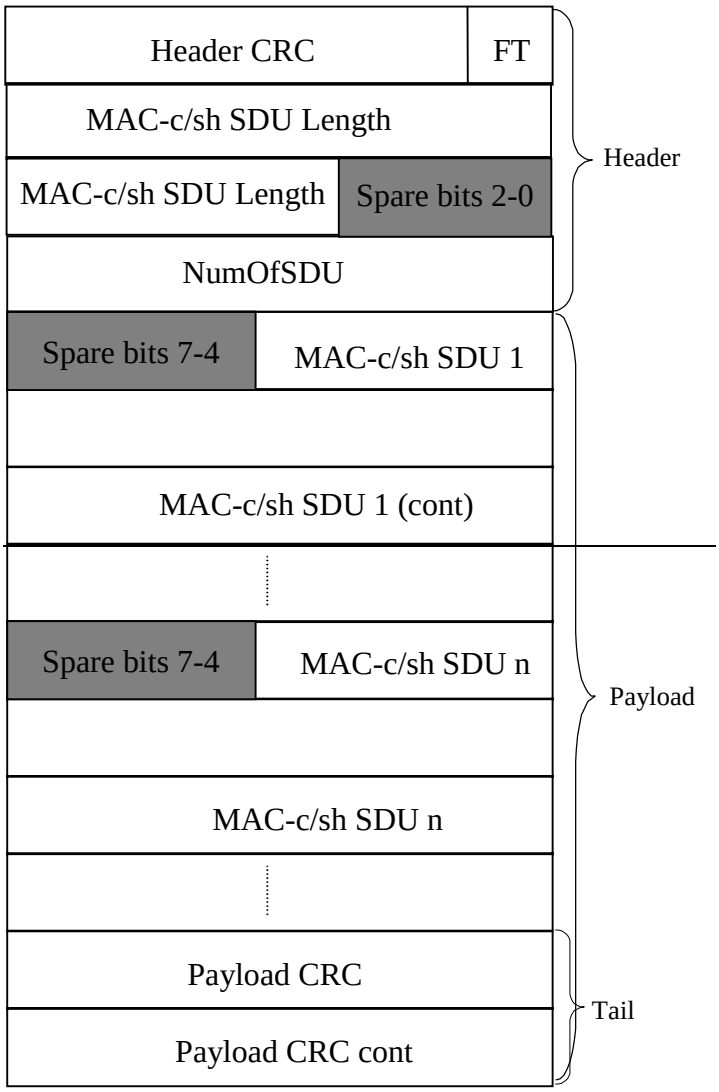
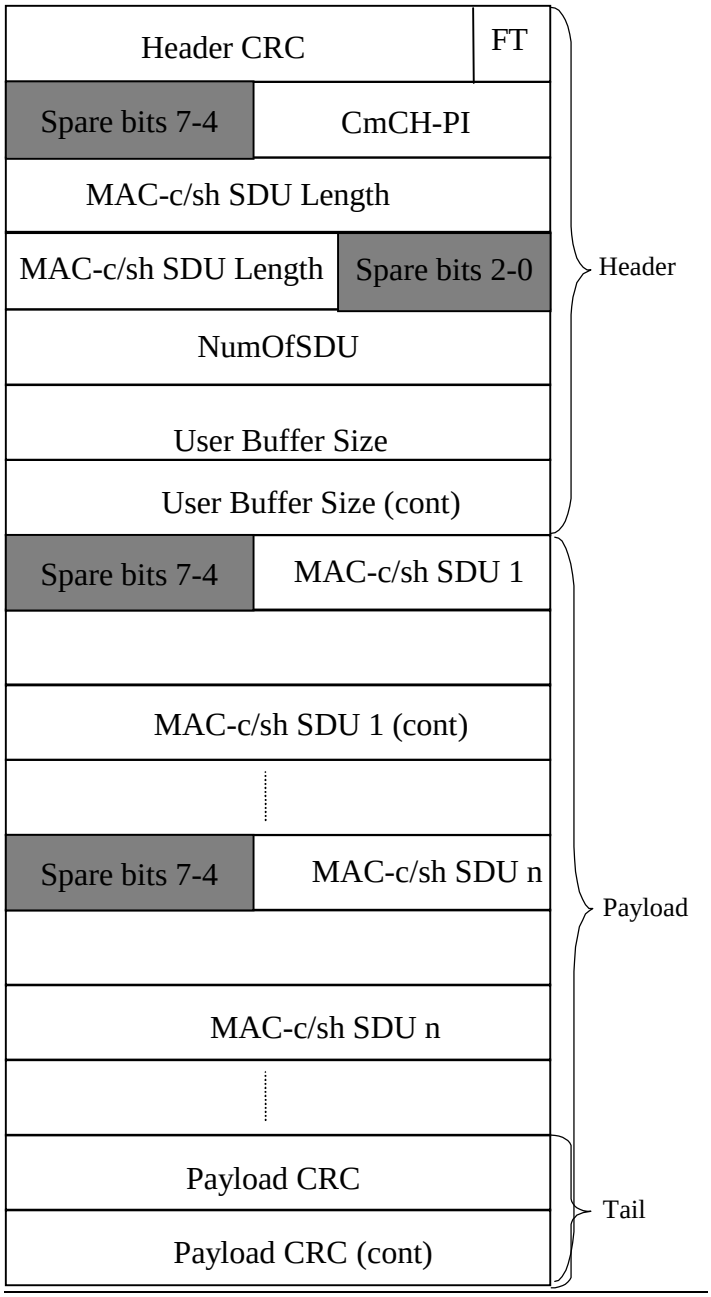


Figure 11: USCH D<u>ATA</u>~~ata~~ F<u>RAME</u>~~rame on the lur~~<u>structure</u>

6.2.4 DSCH Channels~~Data Frames~~



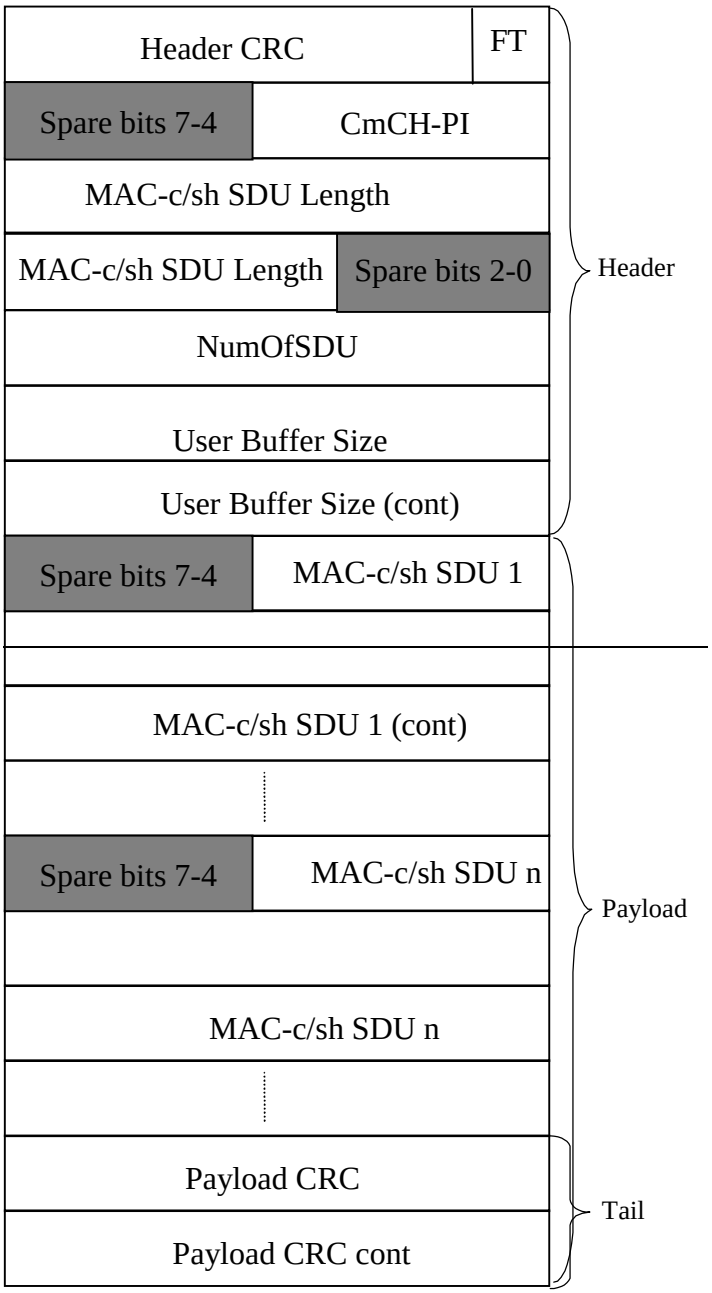


Figure 12: DSCH ~~lur~~ DATA~~ata~~ FRAME~~rame~~ S~~s~~tructure

6.2.5 Coding of Iinformation Eelements in DATAdata FRAMEframes

6.2.5.1 Header CRC

Description: Cyclic Redundancy Polynomial calculated on the header of a data frame with polynomial 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.

Value range: {0-127}.

Field length: 7 bits.

6.2.5.2 Frame Type (FT)

Description: Ddescribes if it is a control frame or a data frame.

Value range: {0=data, 1=control}.

Field Length: 1 bit.

6.2.5.3 D-RNTI

Description: Identifies the UE in the DRNC.

Value range: {0-1048575}.

Field length: 20 bits.

6.2.5.4 S-RNTI

Description: S-RNTI is defined in [5]. S-RNTI is used in UL control frames to identify the UE context in the SRNC.

Value range: {0-1048575}.

Field length: 20 bits.

6.2.5.5 UE-ID Type Indicator (UE-ID Type)

Description: Indicates the UE Identifier Type to be included by MAC-c/sh in the MAC header.

Value range: {0=U-RNTI, 1=C-RNTI}.

Field Length: 1 bit.

6.2.5.6 S-CCPCH Indicator (S-CI)

Void.

6.2.5.7 Common Transport Channel Priority Indicator (CmCH-PI)

Description: CmCH-PI is the relative priority of the data frame and the SDUs included.

Value range: {0-15, where 0=lowest priority, 15=highest priority}.

Field length: 4 bits.

6.2.5.8 MAC-c/sh SDU Length

Description: The value of that field indicates the length of every MAC-c/sh SDU in the payload of the FACH, DSCH and [TDD USCH] dataDATA frameFRAME in number of bits.

Value range: {0-5000}.

Field Length: 13 bits.

6.2.5.9 NumOfSDU

Description: Indicates the number of MAC-c/sh SDUs in the payload.

Value range: {1-255}.

Field Length: 8 bits.

6.2.5.10 [FDD - Propagation delay]

Description: One-way air interface delay as measured during RACH access.

Value range: {0 - 765 chips}.

Granularity: 3 chips.

Field length: 8 bits.

6.2.5.11 [TDD - Rx Timing Deviation]

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

Value range: {-256, ..., +256} chips

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

With N = 0, 1, ...,127

Granularity: 4 chips.

Field length: 7 bits.

6.2.5.12 User Buffer Size

Description: Indicates the users' buffer size (i.e. the amount of data in the buffer) in octets for a given Common Transport Channel Priority Indicator level.

Value range: {0-65535}.

Field length: 16 bits.

6.2.5.13 MAC-c/sh SDU

Description: A MAC-c/sh SDU contains the *C/T* IE field [7] of the MAC header followed by one RLC PDU.

Field length: See the value of the *MAC-c/sh SDU Length* IE.

6.2.53.14 Payload CRC

Description: Cyclic Redundancy Polynomial calculated on the payload of a data frame with polynomial 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.

6.2.5.15 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 Control Fframe structure

6.3.1 Introduction

Control Frames are used to transport control information between SRNC and DRNC.

The figure below defines the Control Frame structure for common transport channels.

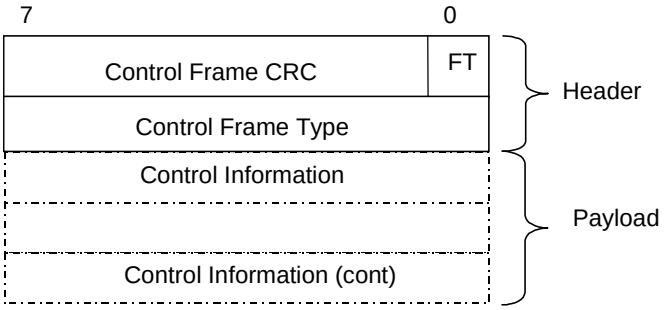


Figure 13: Iur Common Transport Channel Control Frame Format

The *Control Frame Type* IE defines the type of the control frames.

The length of the payload is variable accordingly to the control frame type.

The structure of the header and the payload of the control frames is defined in the following subclauses.

6.3.3.1 FACH FLOWlow CONTROLontrol

Figure 14 shows the payload structure when the control frame is used for the above mentioned purpose. This control information is sent in the UL only.

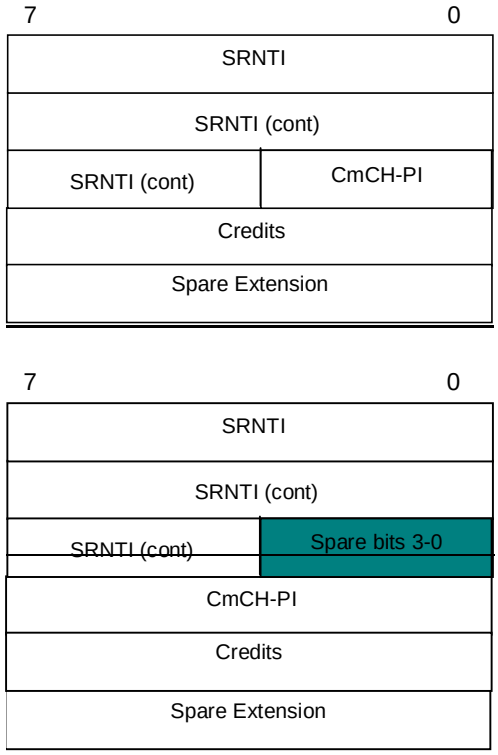


Figure 14: FACH FLOWlow CONTROLontrol Ppayload structure

6.3.3.1.1 S-RNTI

Refer to subclause 6.2.5.4. ~~6.2.3.4.~~

6.3.3.1.2 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7. ~~6.2.3.6.~~

6.3.3.1.3 Credits

Description: The *Credits* IE ~~Credits IE~~ indicates the number of MAC-c/sh SDUs that a user may transmit.

Value range: {0-255, where 0=stop transmission, 255=unlimited}.

Field length: 8 bits.

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 DSCH CAPACITY~~apacity~~ REQUEST~~equest~~

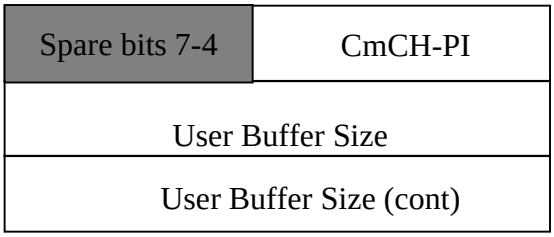


Figure 15: CAPACITY~~apacity~~ REQUEST~~equest~~ ~~Control Frame~~payload structure

The DSCH CAPACITY~~apacity~~ REQUEST~~equest~~ is sent to the DRNC for each priority level~~group~~ to indicate the user buffer size in the SRNC. The control frame is sent by the SRNC when the SRNC considers the user buffer size~~status~~ needs an increased buffer reporting frequency. This may be sent to signal an event, such as, data arrival or user-buffer discard. The ~~his~~ CAPACITY REQUEST C~~c~~ontrol F~~f~~rame is used to improve user-buffer reporting above the level produced by the user-buffer reporting associated with the DSCH DATA~~data~~ FRAME~~frame~~s.

6.3.3.2.1 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7.

6.3.3.2.2 User Buffer Size

Refer to subclause 6.2.5.12.

6.3.3.3 DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~

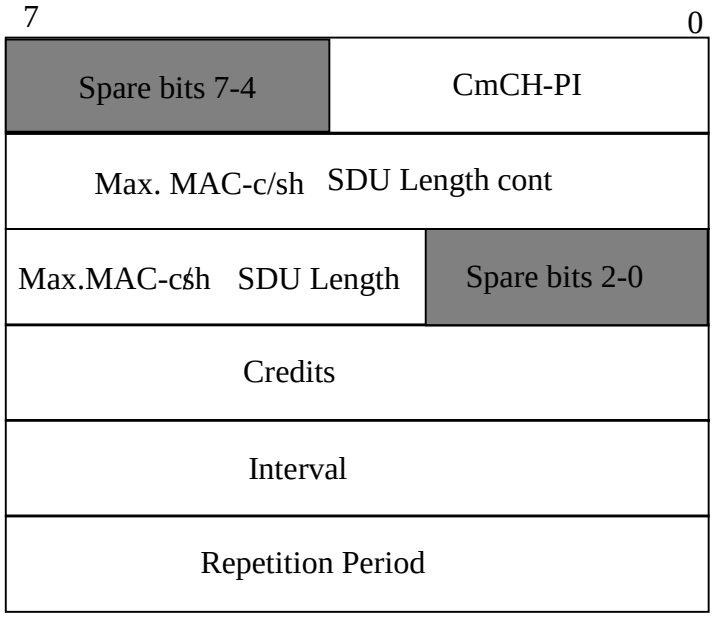


Figure 16: CAPACITY~~apacity~~ ALLOCATION~~llocation~~ ~~Control Frame~~payload structure

The CAPACITY ALLOCATION Control Frame~~is message~~ describes an allocation that the SRNC may use. When the *C~~c~~redits* IE has~~ve~~ a value of 0 it signifies that there is no resources allocated for transmission and to thus stop transmission. When the *C~~c~~redits* IE has~~ve~~ a value of 255, it signifies unlimited capacity for transmission of SDUs. When the *R~~r~~epetition P~~p~~eriod* IE has a value of 0, it signifies that the allocation (*Maximum~~.~~ MAC-c/sh SDU Length*, *Credits* and *Interval* IEs) can be repeated without limit.

6.3.3.3.1 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7.

6.3.3.3.2 Maximum MAC-c/sh SDU Length

Description: The value~~s~~ indicate~~s~~d the maximum allowable SDU size. MAC-c/sh SDU contains the C/T field of the MAC header followed by one RLC PDU

Field length: See the value of the *MAC-c/sh SDU Length* IE.

6.3.3.3.3 Credits

Refer to subclause 6.3.3.1.3.

6.3.3.3.4 Interval

Description: The value of this field indicates the time interval during which the ~~(~~*Credits* IE~~)~~ granted in the DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~ Control F~~f~~rame may be transmitted. This value is only applied to the DSCH transport channel.

Value range: {0-2550 ms}.

Granularity: 10ms.

Field Length: 8 bits.

6.3.3.3.5 Repetition Period

Description: The value of this field indicates the number of subsequent intervals that the ~~(~~*Credits* IE~~)~~ granted in the DSCH CAPACITY~~capacity~~ ALLOCATION~~allocation~~ Control Frame may be transmitted. These values represent an integer number of Intervals (see 6.3.3.3.4). This field is only applied to the DSCH transport channel.

Value range: {0-255, where 0= unlimited repetition period}.

Field Length: 8 bits.

6.3.3.4 FACH CAPACITY~~apacity~~ REQUEST~~equest~~

Figure 17 shows the payload structure when the control frame is used for the above mentioned purpose. This control information is sent in the DL only.

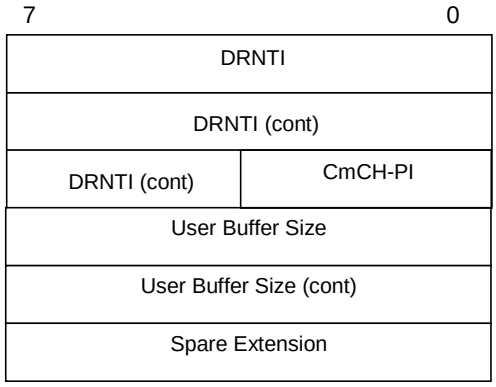


Figure 17: FACH CAPACITY~~apacity~~ REQUEST~~equest~~ ~~Control Frame~~payload structure

6.3.3.4.1 D-RNTI

Refer to subclause 6.2.5.3.

6.3.3.4.2 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7.

6.3.3.4.3 User Buffer Size

Refer to subclause 6.2.5.12.

6.3.3.4.4 Spare extension

Refer to subclause 6.3.3.1.4~~2.5.15. 6.3.3.14.~~

3GPP TSG-RAN WG3 Meeting #23
Helsinki, Finland, August 27th-31st, 2001

Tdoc R3-012604

CR-Form-v3

CHANGE REQUEST

⌘ **25.425** **CR** **033** ⌘ rev **2** ⌘ Current version: **4.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	General Corrections on Common Transport Channel Data Streams
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	August 2001
Category:	⌘	**A**
Release:	⌘	*REL-4*

Use one of the following categories:
F *(essential 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)*

Reason for change: ⌘ Editorial Corrections

Summary of change: ⌘

In Section 2, an additional reference to TS 25.321 is added because of the new reference to it in Section 6.2.5.13.

In 3.3, 4 formatting changes were made and 3 abbreviations were removed.

In 4.1.2, the MAC-c should be changed the MAC-c/sh.

In 4.2, 'data transport' is modified to 'the Data Transport Network Layer' to specify where services are served. And typo, 'ans' is corrected to 'and'.

In Figures of Section 5.1, 'data transfer' is corrected to 'Data Transfer procedure' to make clear that these are the procedures. And all 'data frame's are changed to 'DATA FRAME's because of consistency of 25.413, 25.423, and 25.433. There are explanations of the Procedure and Message notations.

In 5.1.2 and 5.1.4, MAC-c/sh is added in front of the SDUs and there are some minor editorial corrections and clarification phrases were added.

In 5.2, 'procedure's are added to make more clear that these are the procedure. And there are minor corrections and added clarification phrases.

In 6.1, 'picture 1' is corrected to 'Figure 8.'

In 6.2, there are also modifications of procedure and message notations, IEs in Figure and the titles, USCH Data Frames[TDD] and DSCH Data Frames, are corrected to 'USCH Channels[TDD] and DSCH Channels'.

In 6.2.5, 6.2.5.2, 6.2.5.3, 6.2.5.9, 6.2.5.12, 6.2.5.13, there are minor corrections.

The 6.2.3.14 is corrected to 6.2.5.14.

In 6.3 there are corrections of message notations and IE in Figure. And clarification phrases are added.

		In 6.3.3.1.1, subclause 6.2.3.4 is changed to subclause 6.2.5.4. In 6.3.3.1.2, subclause 6.2.3.6 is changed to subclause 6.2.5.7. In 6.3.3.4.4, subclause 6.3.3.14 is changed to subclause 6.2.5.15. In 6.3.3.1.3, there is minor correction.
Consequences if not approved:	⌘	If this CR is not approved, the mistake will remain in this specification. Backward compatibility: This CR is not backward compatible however is changing an essential correction.

Clauses affected:	⌘	2, 3.3, 4.1.2, 4.2, 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.2.1, 5.2.2, 5.2.3, 5.2.4, 6.1, 6.2, 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.5.2, 6.2.5.3, 6.2.5.9, 6.2.5.12, 6.2.3.14, 6.3, 6.3.3.1, 6.3.3.1.1, 6.3.3.1.2, 6.3.3.1.3, 6.3.3.2, 6.3.3.3, 6.3.3.3.4, 6.3.3.3.5, 6.3.3.4, 6.3.3.4.1, 6.3.3.4.4			
Other specs affected:	⌘	X	Other core specifications	⌘	25.425 V3.4.0 CR 032
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

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. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] ITU-T Recommendation I.361 (11/95): "B-ISDN ATM Layer Specification".

[2] ITU-T Recommendation I.363.2 (11/2000): "B-ISDN ATM Adaptation Layer type 2".

[3] ITU-T Recommendation I.366.1 (6/98): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2".

[4] 3G TS 25.427: "Iub/Iur User Plane Protocols for DCH Data Streams".

[5] 3G TS 25.401: "UTRAN overall description".

[6] 3G TS 25.990: "UTRAN vocabulary".

[7] 3G TS 25.321: “MAC protocol specification”.

3.3 Abbreviations

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

AAL2	ATM Adaptation Layer type 2
ATM	Asynchronous Transfer Mode
CFN	Connection Frame Number
CmCH	Com~~M~~mon T~~t~~ransport Channel
CPCH	Common Packet Channel
~~CPS~~	~~Common Part Sublayer~~
C-RNC	Controlling Radio Network Controller
CRC	Cyclic Redundancy Checksum
DCH	Dedicated Transport Channel
DL	Downlink
D-RNTI	Drift RNTI
DSCH	Downlink Shared Channel
FACH	Forward Access Ch~~H~~annel
FP	Frame Protocol
FT	Frame Type
~~PC~~	~~Power Control~~
RACH	Random Access C~~H~~hannel
RNC	Radio Network Controller
RNTI	Radio Network Temporary Identity
SRNC	Serving Radio Network Controller
S-RNTI	Serving RNTI
SSCS	Service Specific Convergence Sublayer
~~SSSAR~~	~~Service Specific Segmentation and Reassembly sublayer~~
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
ToA	Time of A~~a~~rrival
TTI	Transmission Time Interval
UE	User Equipment
UL	Uplink
U-RNTI	UTRAN RNTI
USCH	Uplink Shared Channel

4.1.2 FACH Data Streams User Plane Protocol Services

FACH frame protocol provides the following services:

- Transport of MAC-c/sh SDUs from the SRNC to the DRNC for FACH common transport channel.
- Flow Control between MAC-d and MAC-c/sh.

4.2 Services expected from the Ddata Ttransport Network layer

The following services are expected from the transport layer:

- Delivery of Frame Protocol PDUs.

In sequence delivery is not required. However, frequent out-of-sequence delivery may impact the performance and ans should be avoided.

5.1 Data Transfer

5.1.1 RACH/CPCH[FDD] Data Transfer

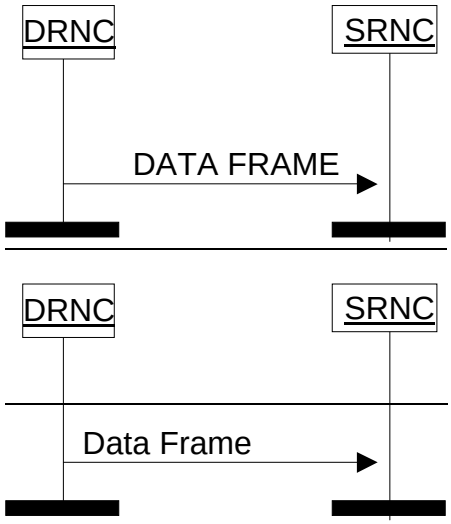


Figure 1: RACH/CPCH[FDD] Ddata Ttransfer procedure

Data received on the RACH/CPCH[FDD] transport channel is transmitted from the DRNC to the SRNC using RACH/CPCH[FDD] DATA FRAMEdata frames. The data is protected by a mandatory payload CRC. Multiple MAC-c/sh SDUs of same length may be transmitted in the same RACH/CPCH[FDD] DATA FRAMEdata frame.

5.1.2 FACH Ddata Ttransfer

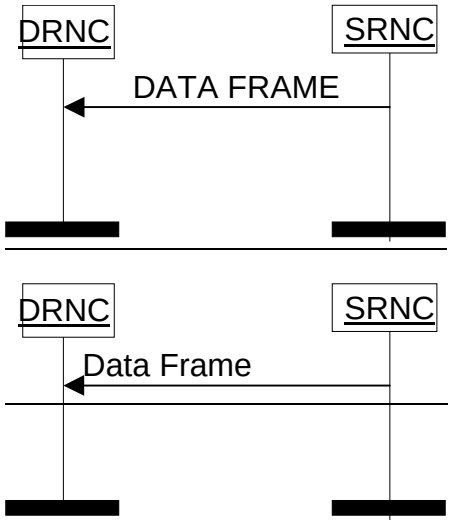


Figure 2: FACH Ddata Ttransfer procedure

Data to be transmitted on the FACH transport channel is transmitted from the SRNC to the DRNC using FACH DATA FRAMEdata frames. Multiple MAC-c/sh SDUs of same length and same priority level (CmCH-PI) may be transmitted in the same FACH DATA FRAMEdata frame. Within one priority and size the MAC-c/sh SDUs shall be transmitted by the DRNS on the Uu interface in the same order as they were received from the SRNC.

The *UE-ID Type Indicator* IE indicates which UE-ID type MAC-c/sh shall include in the MAC header.

5.1.3 USCH Data Transfer [TDD]

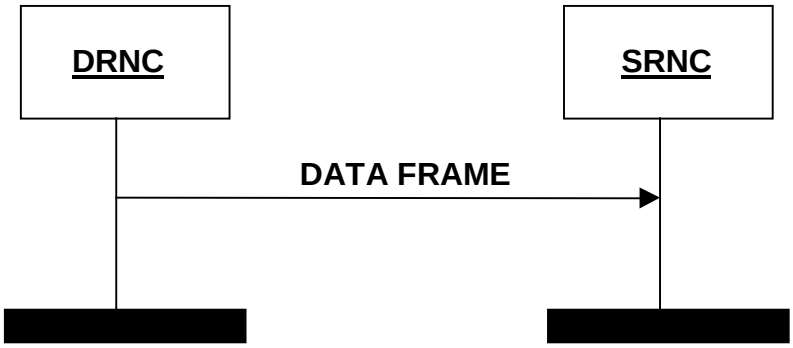


Figure 3: USCH Data Ttransfer procedure

Whenever there is USCH data in the DRNC, transfer is done immediately to the SRNC via the USCH Data Port using USCH DATAata FRAMErames.

Data received on the USCH transport channel is transmitted from the DRNC to the SRNC using USCH DATAdata FRAMEframes. The data is protected by a mandatory payload CRC. Multiple MAC-c/sh SDUs of same length may be transmitted in the same USCH DATAdata FRAMEframe.

5.1.4 DSCH Data Transfer

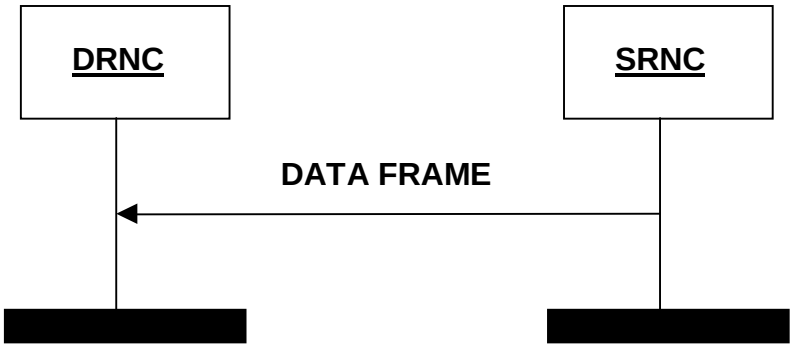


Figure 4: DSCH Data Transfer procedure

When the SRNC has been granted capacity by the DRNC via the DSCH CAPACITY ALLOCATION Control Frame and the SRNC has data waiting to be sent, then the DSCH DATAdata FRAMEframe is used to transfer the data. When data is waiting to be transferred, and a CAPACITYcapacity ALLOCATIONallocation is received, a DATAdata FRAMEframe will be transmitted immediately according to allocation received.

Multiple MAC-c/sh SDUs of same length and same priority level (CmCH-PI) may be transmitted in the same DSCH data DATA frameFRAME.

The DSCH DATAdata FRAMEframe includes a *Uuser Bbuffer Ssize* IEindication to indicate the amount of data pending for the respective UE and for the indicated priority level. Within one priority level and size the MAC-c/sh SDUs shall be transmitted by the DRNS on the Uu interface in the same order as they were received from the SRNC.

5.2 Flow Control

5.2.1 FACH Flow Control

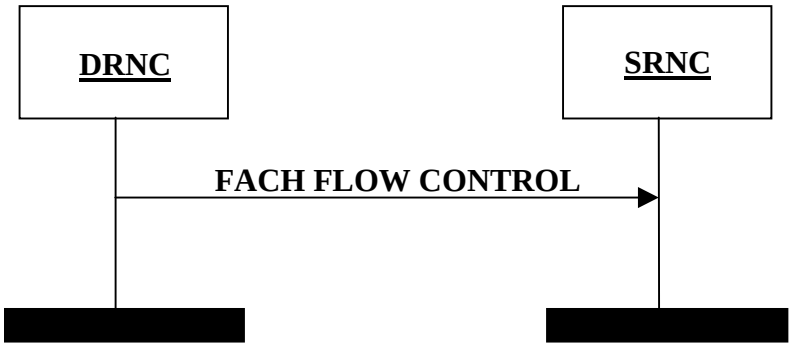


Figure 4A: FACH Flow Control procedure

The FACH ~~f~~Flow ~~c~~Control procedure~~frame~~ is used by the DRNC to control the user data flow. It may be generated in response to a FACH Capacity Request procedure or at any other time. The *Credits* IE indicates the number of MAC-c/sh SDUs the SRNC is allowed to transmit for the UE identified by the *SRNTI* IE and the associated priority level~~class~~ indicated by the *Common Transport Channel Priority Indicator* IE.

The *Credits* IE indicates the total amount of credits granted. Any credits previously granted are withdrawn.

If *Credits* IE = 0 (e.g. due to congestion in the DRNC), the SRNC shall immediately stop transmission of MAC-c/sh SDUs.

Credits IE = 'unlimited' indicates that the SRNC may transmit an unlimited number of MAC-c/sh SDUs.

5.2.2 DSCH Capacity Request

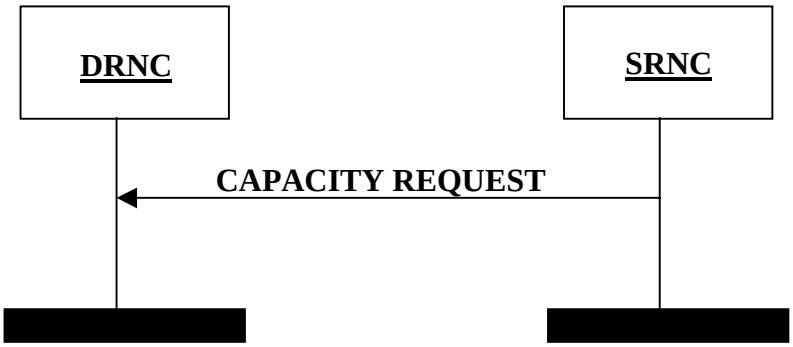


Figure 5: DSCH Capacity Request procedure

The DSCH Capacity Request procedure provides means for the SRNC to request DSCH capacity by indicating the user buffer size in the SRNC for a given priority level.

The SRNC is allowed to reissue the DSCH ~~c~~Capacity ~~r~~Request if no CAPACITY ALLOCATION~~allocation~~ has been received within an appropriate time threshold.

5.2.3 DSCH Capacity Allocation

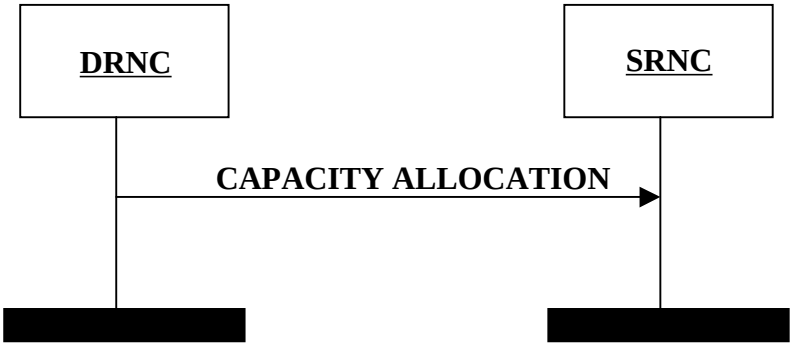


Figure 6: DSCH Capacity Allocation procedure

DSCH Capacity Allocation procedure is generated within the DRNC. It may be generated either in response to a DSCH Ceapacity Rrequest or at any other time.

The DRNC may use this message to modify the capacity at any time, irrespective of the reported user buffer status.

The DSCH CAPACITYapacity ALLOCATIONllocation frame is used by the DRNC to control the user data flow. *Credits* IE It indicates the number of MAC-c/sh SDUs that the SRNC is allowed to transmit for the UE and the associated priority levelclass indicated by the *Common Transport Channel Priority Indicator* IE.

The *Maximum. MAC- c/sh SDU length*, *Credits*, *Interval* and *Repetition Period* IEs indicates the total amount of capacity granted. Any capacity previously granted is replaced.

If *Ceredits* IE = 0 (e.g. due to congestion in the DRNC), the SRNC shall immediately stop transmission of MAC-c/sh SDUs. If *Ceredits* IE = 255, the SRNC can transmit MAC-c/sh SDUs with unlimited capacity.

The IEs used in the DSCH CAPACITY ALLOCATION Control Frame are the *Common Transport Channel Priority Indicator*, *Credits*, *Maximum. MAC- c/sh SDU Length*, *Interval* and the *Repetition PeriodCount*.

If the Repetition Period IE = *'unlimited repetition period'* it indicates that the SRNC may transmit the specified number of MAC-c/sh SDUs for an unlimited period according to the bounds of *Maximum MAC-c/sh SDU Llength*, *Credits* and *Interval* IEs.

5.2.4 FACH Capacity Request

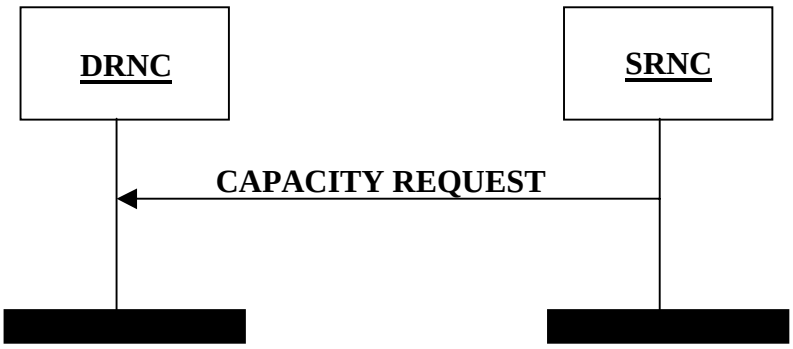


Figure 6A: FACH Capacity Request procedure

The FACH Capacity Request procedure provides the means for the SRNC to notify the DRNC about the user buffer size for a given priority levelclass. It may be sent if no FACH FLOWlow CONTROLontrol frame has been received within an appropriate time threshold, or to signal an event such as data arrival or user buffer discard.

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 figure 7:

Header	Payload: Data or Control Information

Figure 7: 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).

1. Data frame
2. Control frame

In this specification the structure of frames will be specified by using pictures similar to the following figure 8:

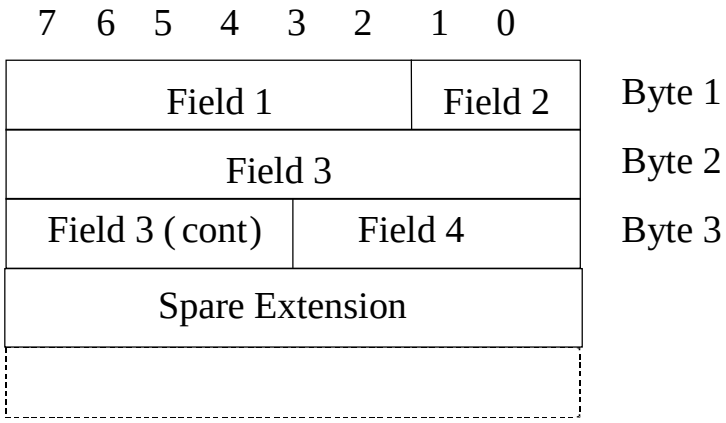


Figure 8: Example frame structure

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 8~~picture 1~~). In addition, if a field spans several bytes, more significant bits will be located in lower numbered bytes (right of frame in Figure 8~~picture 1~~).

On the Iur 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 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.

Spare bits shall be set to 0 by the transmitter and shall be ignored by the receiver.

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

- Lowest value (in the range) coded as a sequence of 0's;
- Highest value in the range coded as a sequence of 1's.

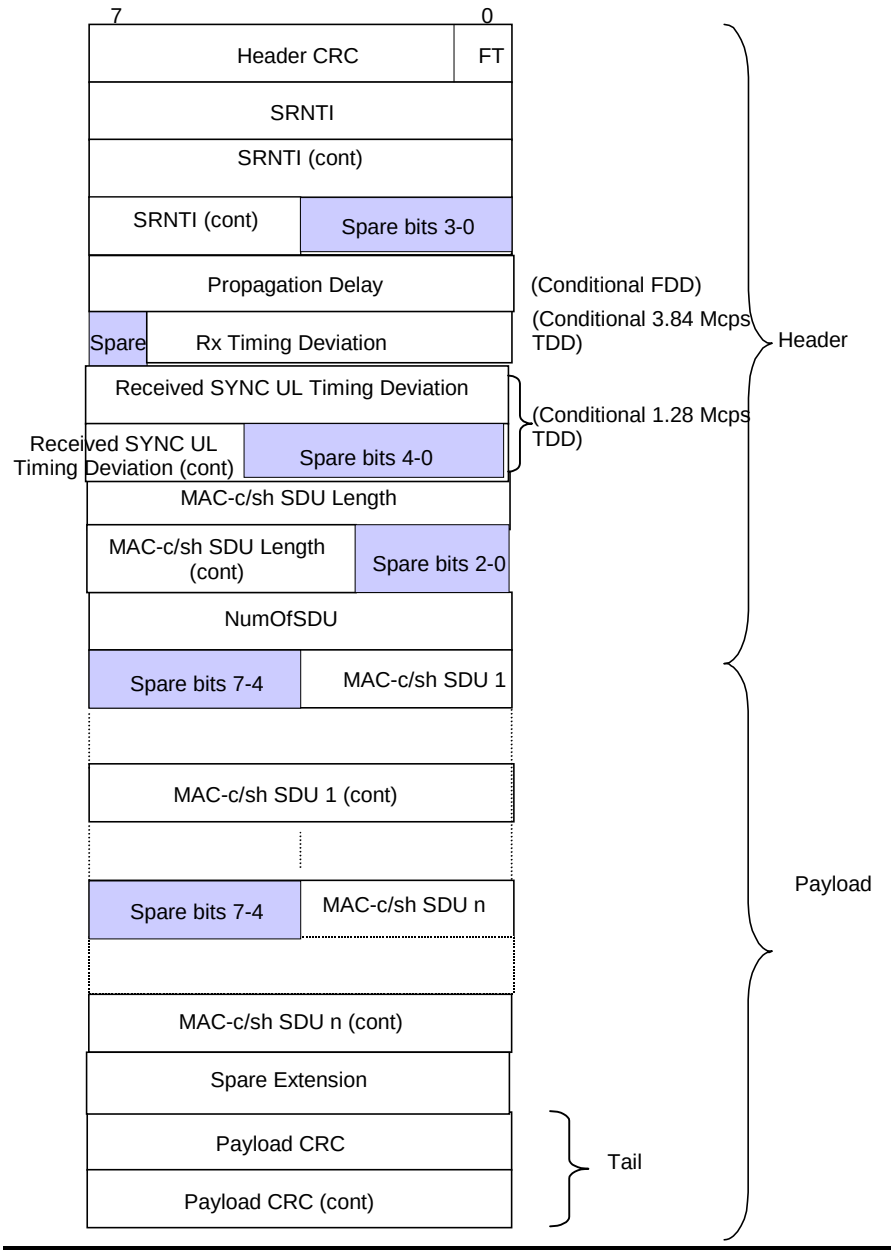
6.2 Data Fframe structure

6.2.1 RACH/CPCH[FDD] Channels

RACH/CPCH[FDD] Iur data stream corresponds to the data stream of one specific UE. The used transport bearer for the transport of FACH/RACH or FACH/CPCH[FDD] is bi-directional.

The RACH/CPCH[FDD]/FACH FP does not facilitate multiplexing of data streams from different UEs onto the same data frame, but does allow multiple UEs to share the same transport bearer.

The RACH DATA~~ata~~ FRAME~~frame~~ structure is defined as common for FDD and TDD with conditional fields, and CPCH[FDD] DATA~~ata~~ FRAME~~frame~~ structure is defined as common for FDD only.


7
0
Header CRC
FT
SRNTI
SRNTI (cont)
SRNTI (cont)
Spare bits 3-0
Propagation Delay
(Conditional FDD)
Spare
Rx Timing Deviation
(Conditional 3.84 Mcps TDD)
Header
Received SYNC UL Timing Deviation
(Conditional 1.28 Mcps TDD)
Received SYNC UL Timing Deviation (cont)
Spare bits 4-0
MAC-c/sh SDU Length
MAC-c/sh SDU Length (cont)
Spare bits 2-0
NumOfSDU
Spare bits 7-4
MAC-c/sh SDU 1
MAC-c/sh SDU 1 (cont)
Spare bits 7-4
MAC-c/sh SDU n
Payload
MAC-c/sh SDU n (cont)
Spare Extension
Payload CRC
Payload CRC (cont)
Tail

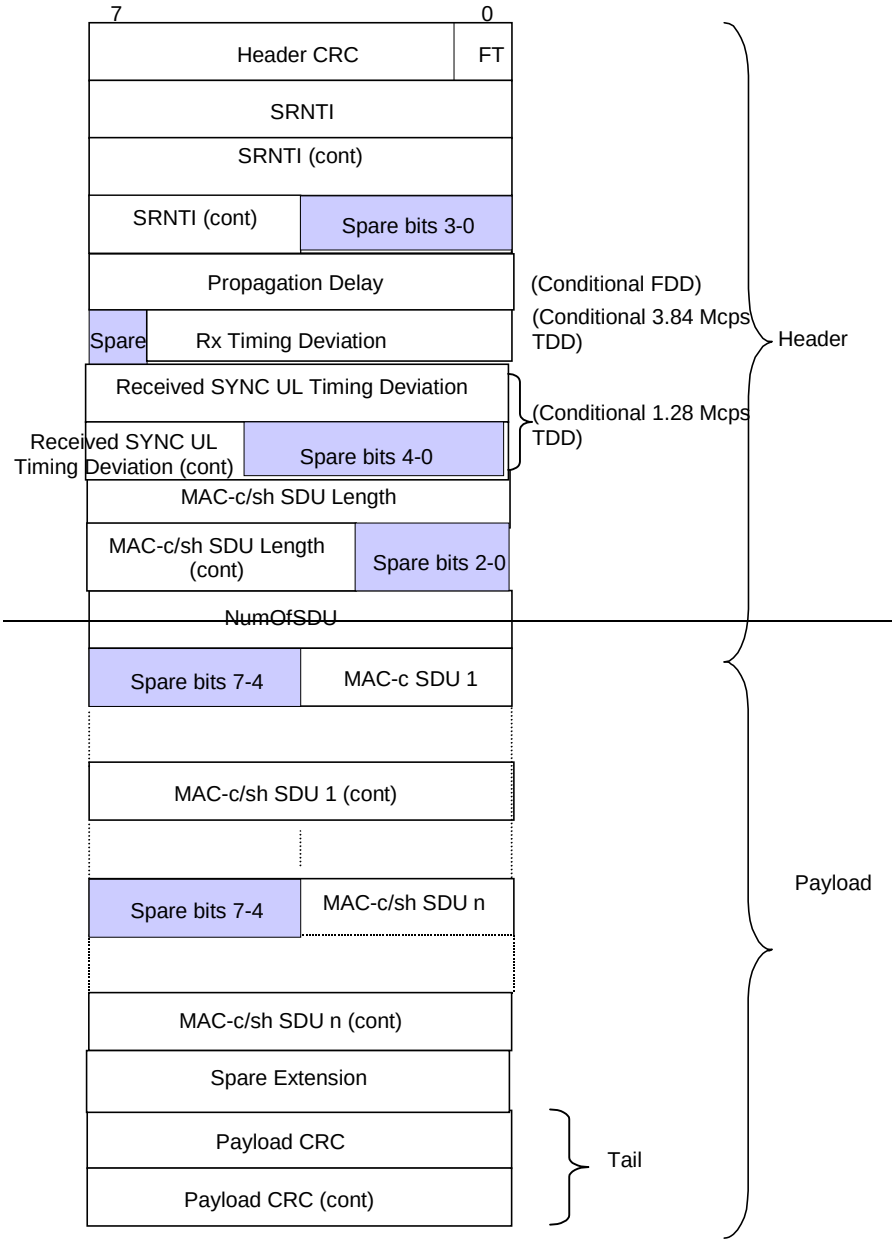


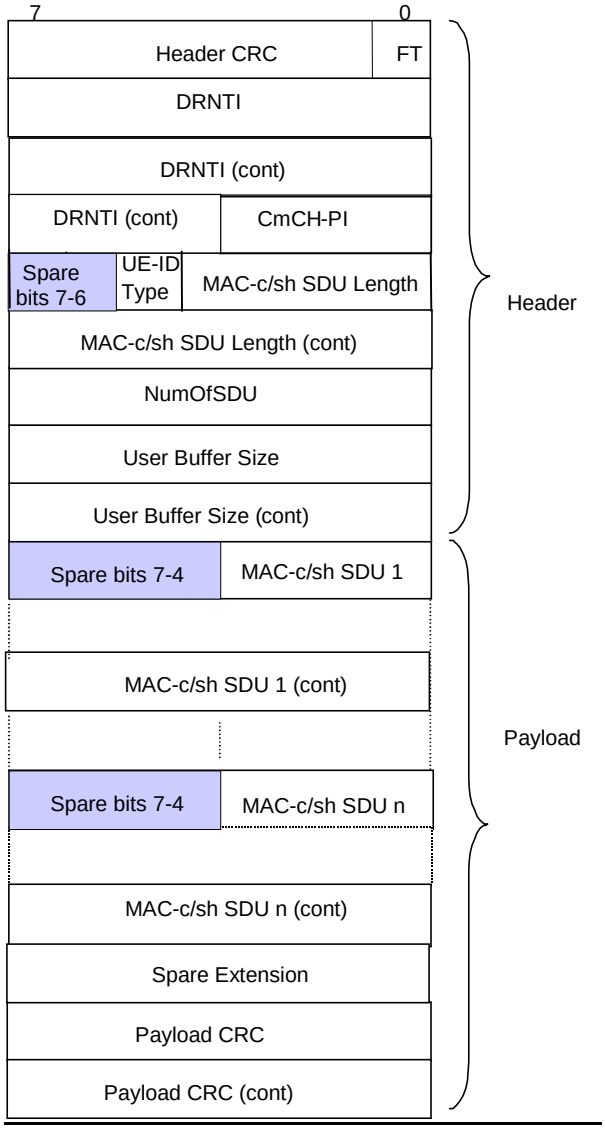
Figure 9: RACH/CPCH[FDD] DATA~~ata~~ FRAME~~rame~~ structure

Propagation delay is a conditional Information Element which is only present when the Cell supporting the RACH/CPCH[FDD] 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 3.8Mcps TDD Cell.

Received SYNC UL Timing Deviation is a conditional Information Element which is only present when the Cell supporting the RACH Transport Channel is a 1.28Mcps TDD Cell.

6.2.2 FACH Channels



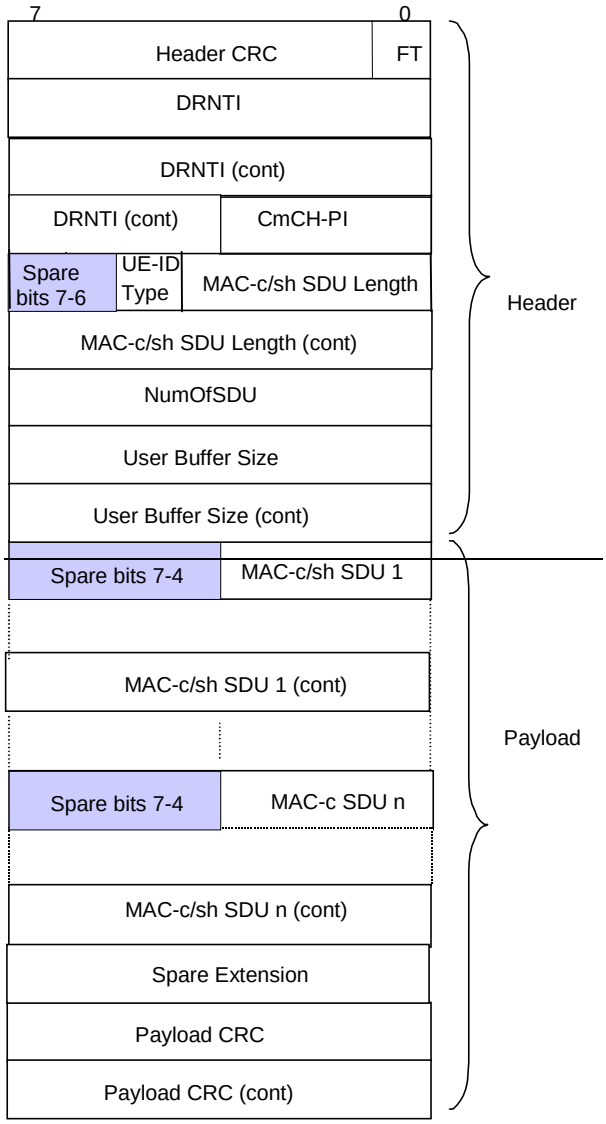
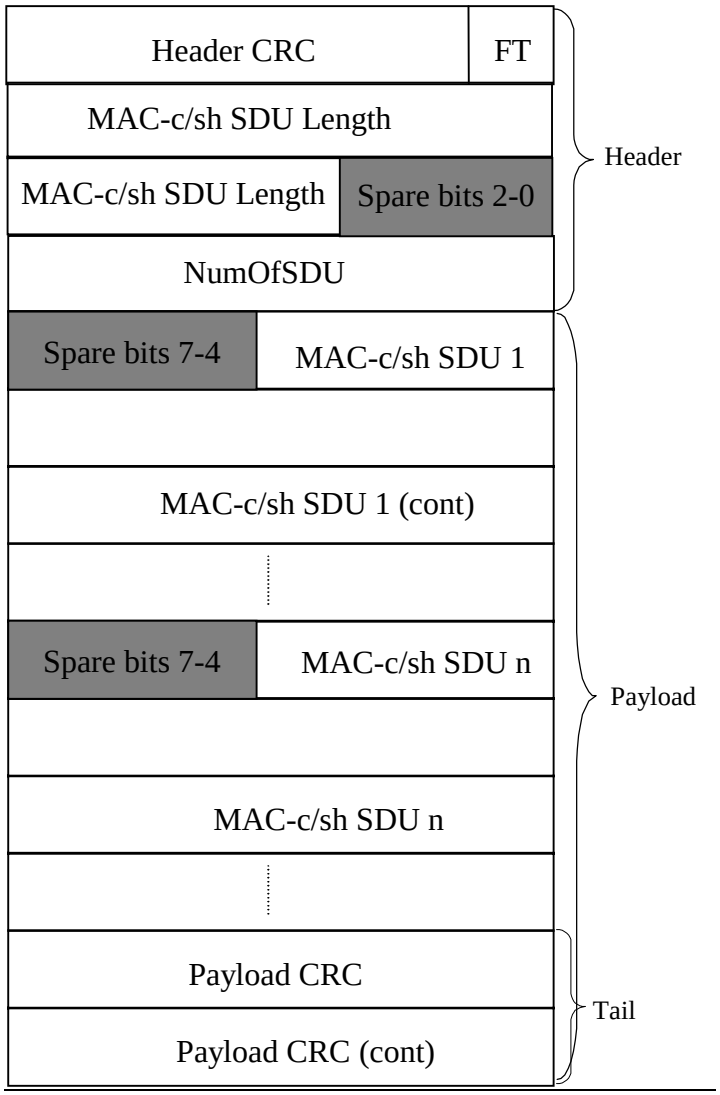


Figure 10: FACH D<u>ATA</u>~~ata~~ F<u>RAME</u>~~rame~~ structure

6.2.3 USCH Channels~~Data Frames~~ [TDD]



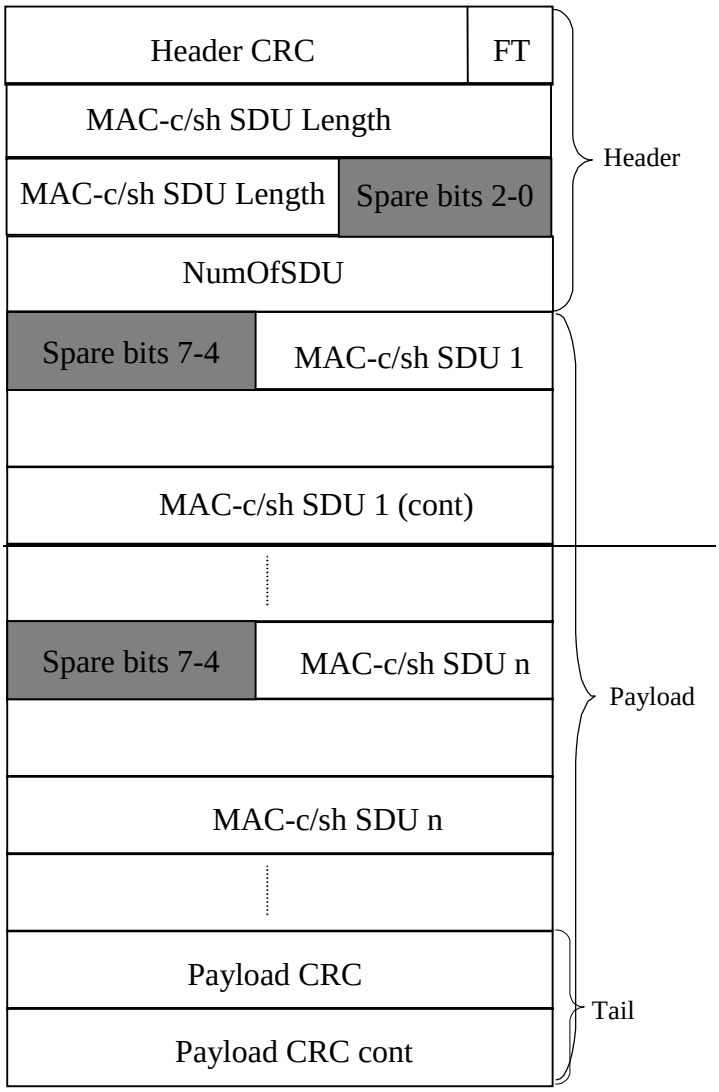
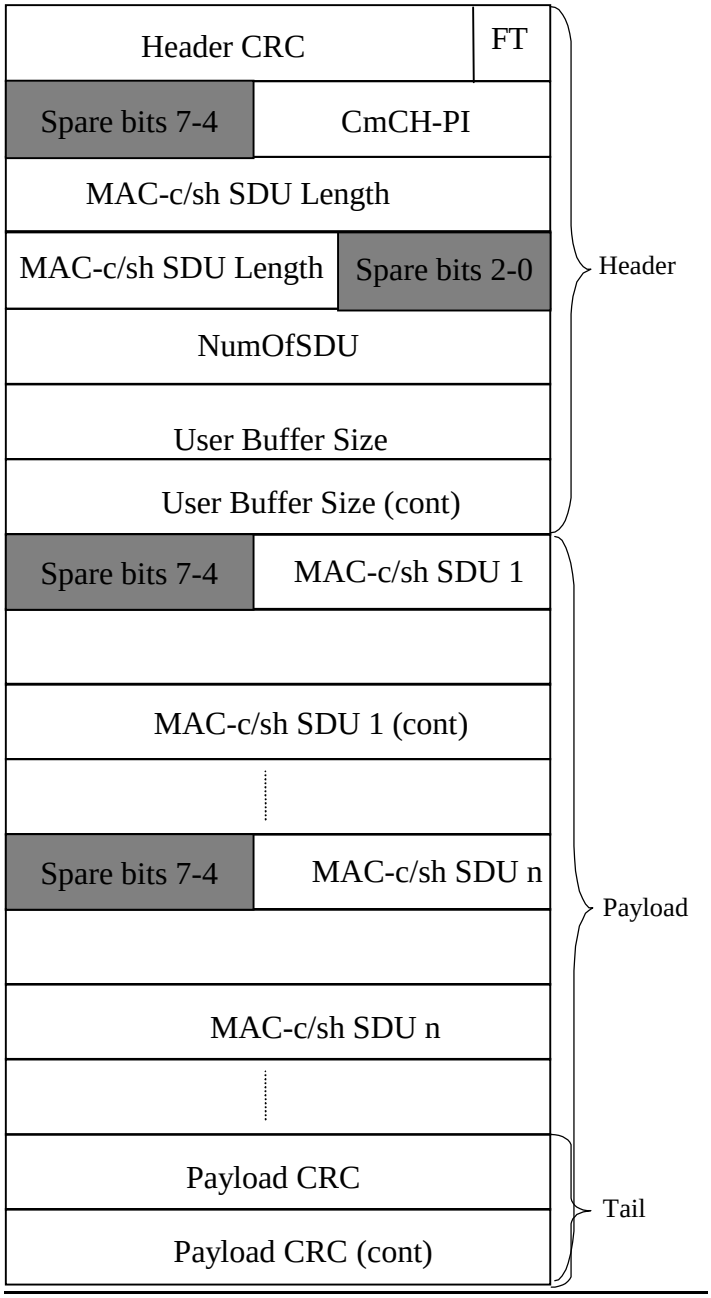


Figure 11: USCH D<u>ATA</u>~~ata~~ F<u>RAME</u>~~rame on the lur~~<u>structure</u>

6.2.4 DSCH Channels~~Data Frames~~



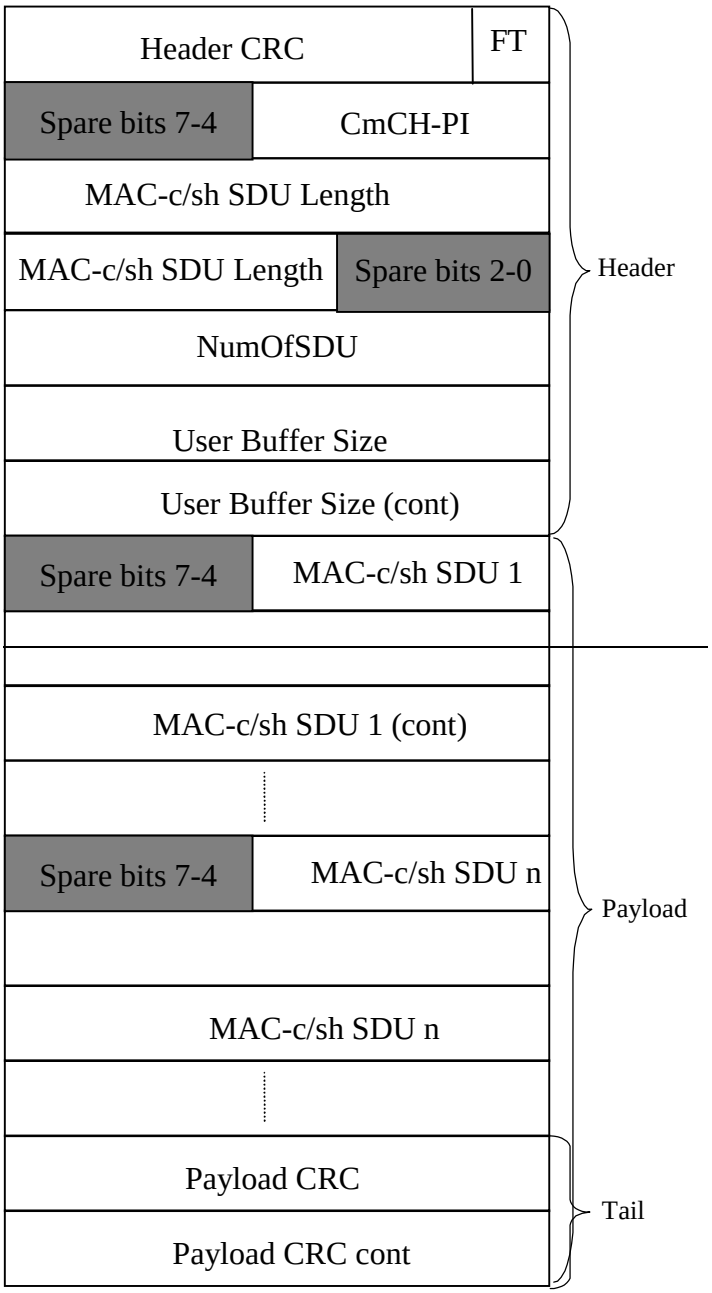


Figure 12: DSCH ~~lur~~ DATA~~ata~~ FRAME~~rame~~ S~~s~~tructure

6.2.5 Coding of Iinformation Eelements in DATAdata FRAMEframes

6.2.5.1 Header CRC

Description: Cyclic Redundancy Polynomial calculated on the header of a data frame with polynomial 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.

Value range: {0-127}.

Field length: 7 bits.

6.2.5.2 Frame Type (FT)

Description: Ddescribes if it is a control frame or a data frame.

Value range: {0=data, 1=control}.

Field Length: 1 bit.

6.2.5.3 D-RNTI

Description: Identifies the UE in the DRNC.

Value range: {0-1048575}.

Field length: 20 bits.

6.2.5.4 S-RNTI

Description: S-RNTI is defined in [5]. S-RNTI is used in UL control frames to identify the UE context in the SRNC.

Value range: {0-1048575}.

Field length: 20 bits.

6.2.5.5 UE-ID Type Indicator (UE-ID Type)

Description: Indicates the UE Identifier Type to be included by MAC-c/sh in the MAC header.

Value range: {0=U-RNTI, 1=C-RNTI}.

Field Length: 1 bit.

6.2.5.6 S-CCPCH Indicator (S-CI)

Void.

6.2.5.7 Common Transport Channel Priority Indicator (CmCH-PI)

Description: CmCH-PI is the relative priority of the data frame and the SDUs included.

Value range: {0-15, where 0=lowest priority, 15=highest priority}.

Field length: 4 bits.

6.2.5.8 MAC-c/sh SDU Length

Description: The value of that field indicates the length of every MAC-c/sh SDU in the payload of the FACH, DSCH and [TDD USCH] dataDATA frameFRAME in number of bits.

Value range: {0-5000}.

Field Length: 13 bits.

6.2.5.9 NumOfSDU

Description: Indicates the number of MAC-c/sh SDUs in the payload.

Value range: {1-255}.

Field Length: 8 bits.

6.2.5.10 [FDD - Propagation delay]

Description: One-way air interface delay as measured during RACH access.

Value range: {0 - 765 chips}.

Granularity: 3 chips.

Field length: 8 bits.

6.2.5.11 [3.84Mcps TDD - Rx Timing Deviation]

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

Value range: {-256, ..., +256} chips

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

With N = 0, 1, ...,127

Granularity: 4 chips.

Field length: 7 bits.

6.2.5.11A [1.28Mcps TDD – Received SYNC UL Timing Deviation]

Description: Measured Received SYNC UL Timing Deviation as a basis for propagation delay.

Value range: {0, ..., +256} chips

Granularity: 1/8 chips.

Field length: 11 bits.

6.2.5.12 User Buffer Size

Description: Indicates the users' buffer size (i.e. the amount of data in the buffer) in octets for a given Common Transport Channel Priority Indicator level.

Value range: {0-65535}.

Field length: 16 bits.

6.2.5.13 MAC-c/sh SDU

Description: A MAC-c/sh SDU contains the *C/T* IE field [7] of the MAC header followed by one RLC PDU.

Field length: See the value of the *MAC-c/sh SDU Length* IE.

6.2.3.14 Payload CRC

Description: Cyclic Redundancy Polynomial calculated on the payload of a data frame with polynomial 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.

6.2.5.15 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 Control Fframe structure

6.3.1 Introduction

Control Frames are used to transport control information between SRNC and DRNC.

The figure below defines the Control Frame structure for common transport channels.

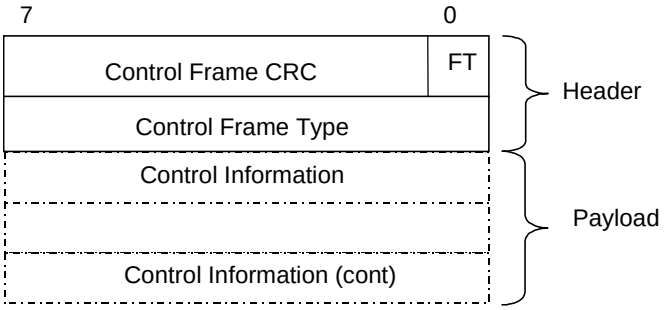


Figure 13: Iur Common Transport Channel Control Frame Format

The *Control Frame Type* IE defines the type of the control frames.

The length of the payload is variable accordingly to the control frame type.

The structure of the header and the payload of the control frames is defined in the following subclauses.

6.3.3.1 FACH FLOWlow CONTROLontrol

Figure 14 shows the payload structure when the control frame is used for the above mentioned purpose. This control information is sent in the UL only.

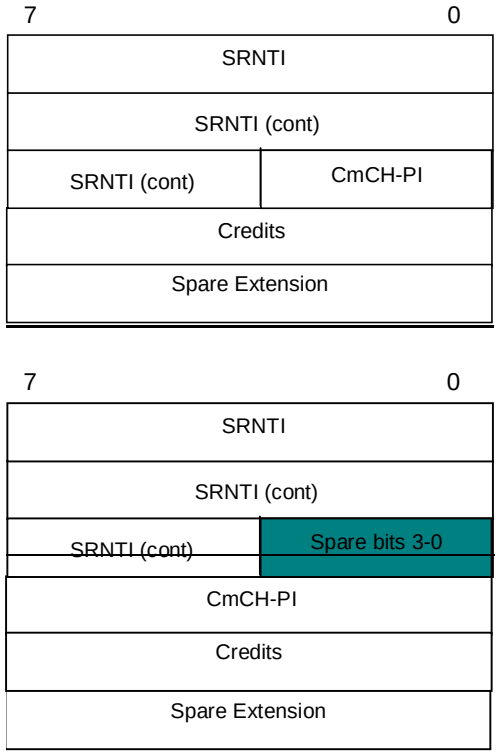


Figure 14: FACH FLOWlow CONTROLontrol Ppayload structure

6.3.3.1.1 S-RNTI

Refer to subclause 6.2.5.4. ~~6.2.3.4.~~

6.3.3.1.2 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7. ~~6.2.3.6.~~

6.3.3.1.3 Credits

Description: The *Credits* IE ~~Credits IE~~ indicates the number of MAC-c/sh SDUs that a user may transmit.

Value range: {0-255, where 0=stop transmission, 255=unlimited}.

Field length: 8 bits.

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 DSCH CAPACITY~~apacity~~ REQUEST~~equest~~

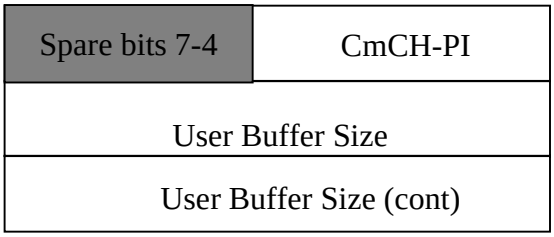


Figure 15: CAPACITY~~apacity~~ REQUEST~~equest~~ ~~Control Frame~~payload structure

DSCH CAPACITY~~apacity~~ REQUEST~~equest~~ is sent for each priority group to indicate the user buffer size. The control frame is sent by the SRNC when the SRNC considers the user buffer status needs an increased buffer reporting frequency. This may be sent to signal an event, such as, data arrival or user-buffer discard. This control frame is used to improve user-buffer reporting above the level produced by the user-buffer reporting associated with the DSCH ~~data~~DATA ~~frame~~FRAMEs.

6.3.3.2.1 Cbommon Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7.

6.3.3.2.2 User Buffer Size

Refer to subclause 6.2.5.12.

6.3.3.3 DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~

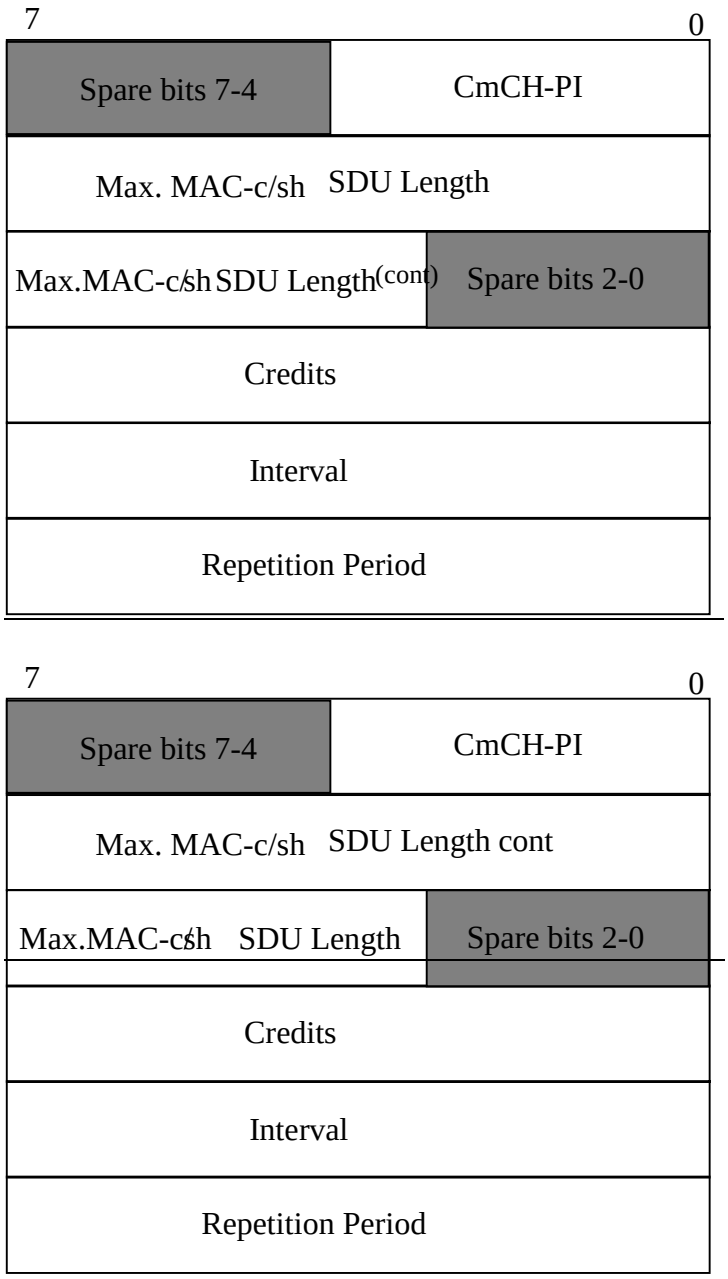


Figure 16: C~~APACITY~~apacity ~~A~~LLOCATION~~llocation~~ ~~Control Frame~~payload structure

The~~is message~~ CAPACITY ALLOCATION Control Frame describes an allocation that the SRNC may use. When the *C~~e~~redits* IE has~~ve~~ a value of 0 it signifies that there is no resources allocated for transmission and to thus stop transmission. When the *C~~e~~redits* IE has~~ve~~ a value of 255, it signifies unlimited capacity for transmission of SDUs. When the *R~~r~~epetition P~~p~~eriod* IE has a value of 0, it signifies that the allocation (*Maximum~~.~~ MAC-c/sh SDU Length*, *Credits* and *Interval* IEs) can be repeated without limit.

6.3.3.3.1 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7.

6.3.3.3.2 Maximum MAC-c/sh SDU Length

Description: The values indicated the maximum allowable SDU size. MAC-c/sh SDU contains the C/T field of the MAC header followed by one RLC PDU

Field length: See the value of the *MAC-c/sh SDU Length* IE.

6.3.3.3.3 Credits

Refer to subclause 6.3.3.1.3.

6.3.3.3.4 Interval

Description: The value of this field indicates the time interval during which the ~~(~~*Credits* IE~~)~~ granted in the DSCH CAPACITY~~apacity~~ ALLOCATION~~llocation~~ Control F~~f~~rame may be transmitted. This value is only applied to the DSCH transport channel.

Value range: {0-2550 ms}.

Granularity: 10ms.

Field Length: 8 bits.

6.3.3.3.5 Repetition Period

Description: The value of this field indicates the number of subsequent intervals that the ~~(~~*Credits* IE~~)~~ granted in the DSCH CAPACITY~~capacity~~ ALLOCATION~~allocation~~ Control Frame may be transmitted. These values represent an integer number of Intervals (see 6.3.3.3.4). This field is only applied to the DSCH transport channel.

Value range: {0-255, where 0= unlimited repetition period}.

Field Length: 8 bits.

6.3.3.4 FACH CAPACITY~~apacity~~ REQUEST~~equest~~

Figure 17 shows the payload structure when the control frame is used for the above mentioned purpose. This control information is sent in the DL only.

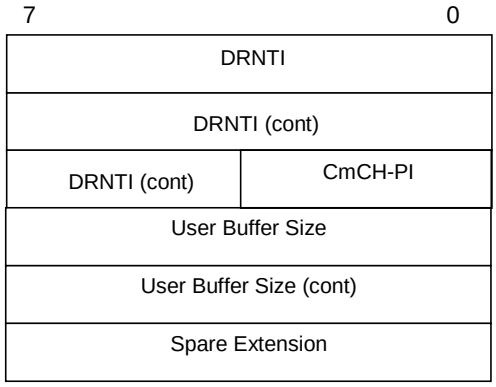


Figure 17: FACH CAPACITY~~apacity~~ REQUEST~~equest~~ ~~Control Frame~~payload structure

6.3.3.4.1 D-RNTI

Refer to subclause 6.2.5.3.

6.3.3.4.2 Common Transport Channel Priority Indicator (CmCH-PI)

Refer to subclause 6.2.5.7.

6.3.3.4.3 User Buffer Size

Refer to subclause 6.2.5.12.

6.3.3.4.4 Spare extension

Refer to subclause 6.3.3.1.4~~2.5.15. 6.3.3.14.~~